Technical Service Manual
Air-Cooled Heat Pump R410A

CONTENTS

Part 1 General information

1.1 Model line up

1.1.1 Indoor unit

Category	Type	Chassis		Model names					
				Capacity, kw(kBtu/h)					
				3.5 (12)	5.1 (18)	7.1 (24)	10.5 (36)	14 (48)	16 (60)
4-way cassette	Compact		C1		**IC**-18HR/U				
	Standard		C1		**IC**-18HR/U	**IC**-24HR/U			
			C2				**IC**-36HRS/U	**IC**-48HRS/U	
Ceiling floor			C1	**IF**-12HR/AU **IF**-12HR/HU	**IF**-18HR/AU **IF**-18HR/HU	**IF**-24HR/AU **IF**-24HR/HU			
			C2				**IF**-36HRS/AU **IF**-36HRS/HU		
			C3					**IF**-48HRS/AU **IF**-48HRS/HU	
			C4						**IF**-60HRS/AU **IF**-60HRS/HU
Duct	High static pressure		C1	**ID**-12HR/U					
			C2		**ID**-18HR/U				
			C3			**ID**-24HR/U			
			C4				**ID**-36HRS/U	**ID**-48HRS/U	
	Mediium stactic pressure		C1		**ID**-18HMR/U				
			C2			**ID**-24HMR/U	**ID**-36HMRS/U		
			C3					**ID**-48HMRS/U	**ID**-60HMRS/U
	High static pressure		C1				**ID**-36HTRS/U		
			C1					**ID**-48HTRS/U	**ID**-60HTRS/U

1.1.2 Outdoor unit

1 phase

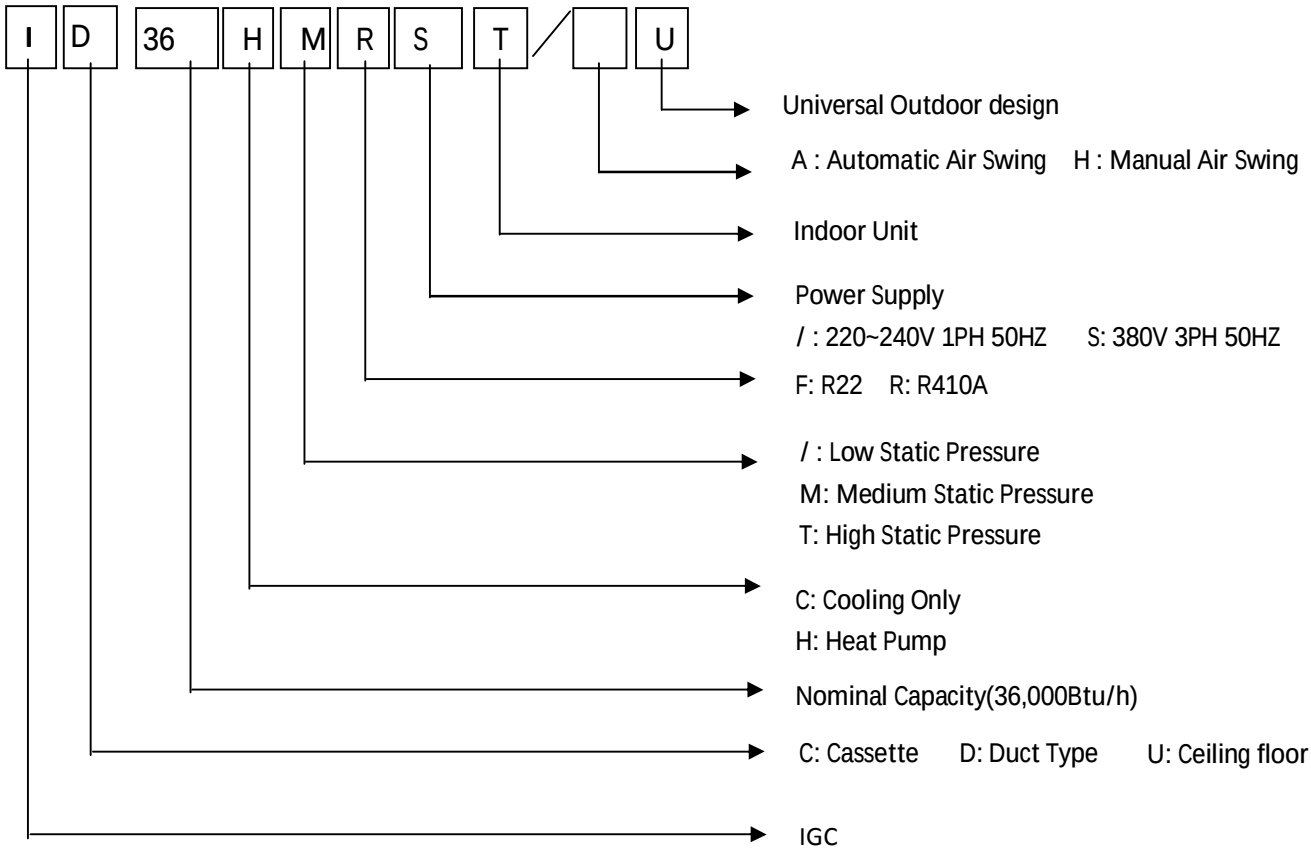
Heat pump		**IU**-12HR	**IU**-18HR	**IU**-24HR
Cooling capacity	Kw	3.5	5.1	7.1
	kBtu/h	12	18	24
Power supply		220-240V, 50Hz		
Chassis				

3 phase

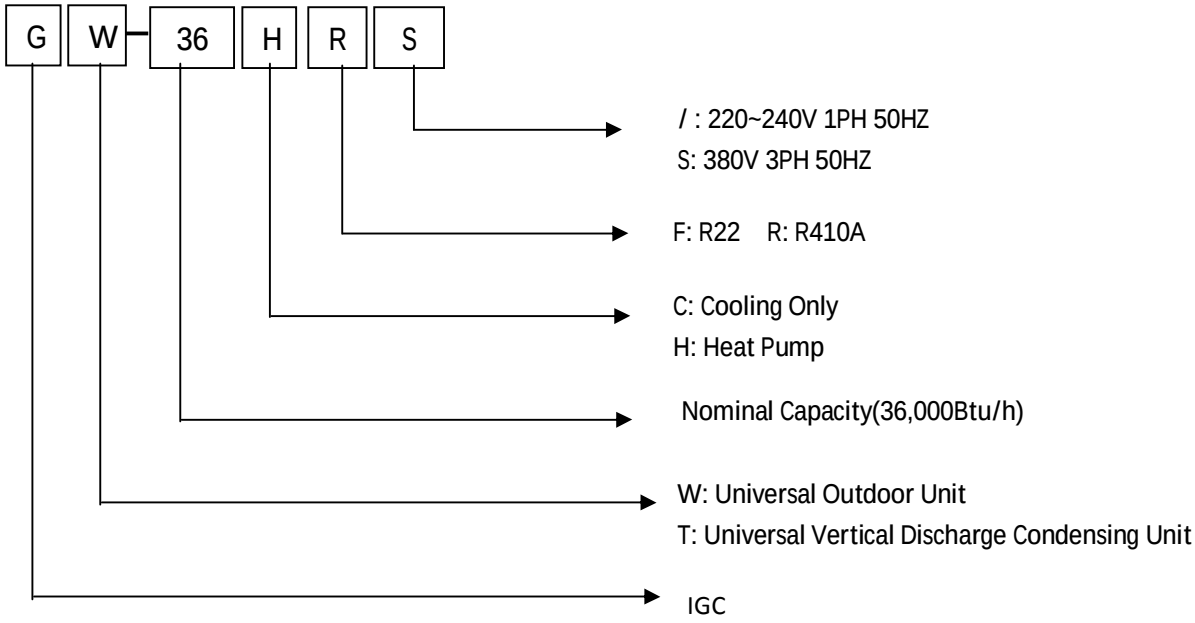
Heat pump		**IU**-36HRS	**IU**-48HRS	**IU**-60HRS
Cooling capacity	Kw	10.5	14	16
	kBtu/h	36	48	60
Power supply		380-415V, 50Hz		
Chassis				

1.2 Naming Rule

1.2.1 Naming rule of indoor unit



1.2.2 Naming rule of outdoor unit

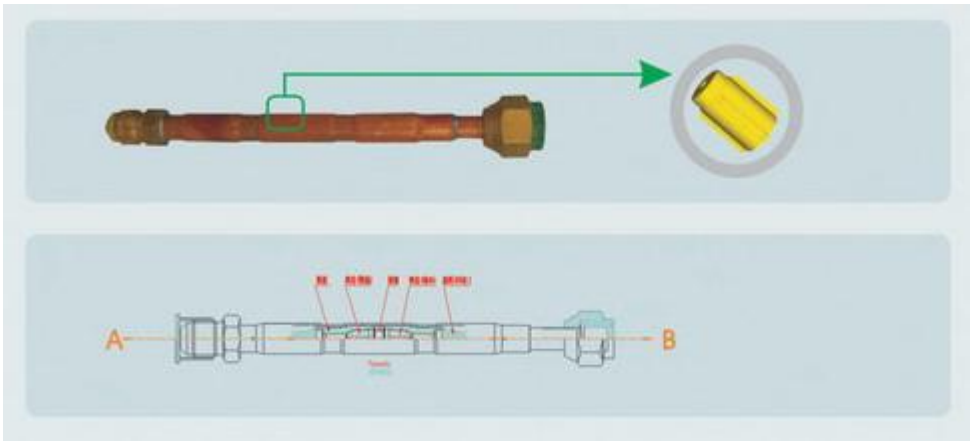


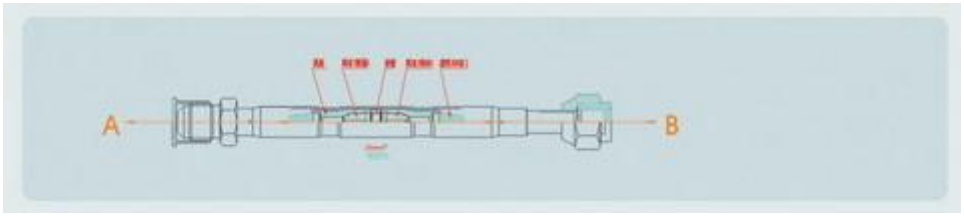
1.3 Characteristics of the Series

1.3.1 General features

ONE PCB compatible for
ALL types of indoor units
ALL capacities
ALL refrigerants

Easy and efficient throttle part
No capillary in outdoor unit, using piston oriface throttling instead in indoor unit





Universal outdoor design
One outdoor unit can match different indoor unit at same capacity.

High efficiency compressor

1.3.2 Cassette features

Compact design for 18k type, suitable for easy ceiling installation, no more additional work needed.

Four stepping motors. One stepping motor for each vane, makes it's moving easier and safer

Auto swing and 3 steps of swing positions controlled by controller, standard mode, anti-direct blow mode, anti-ceiling blow mode

Built-in drain pump, makes the condensing water drainge easier and safer

Detachable corners enable easy access to control parts when installing and maitaining.

One-step panel can be fitted without any tool.

4 way air discharge ensures better air distribution and circulation in the room, with effictive blowing height 3.5m

1.3.3 Ceiling floor

Ceiling and floor installing optional carter for different interior design requirements.

Easy accessable filter when cleaning

Horizontal and vertical wide-angle swing directions.

Special side-panel design for control box and pipe connection makes installation and maintainance more convenient.

Manual or automatic control of the air outlet louver available

LED digital display

Slim and compact design, four different body sizes

1.3.4 Duct

Wide range of applications. suitable for places such as restaurants, concert halls and hotels.

Two air intake methods: air intake from below or from near.

Low noise. Using direct-drive method enabling low noise level.

Drainage pipe behind the unit, easy installation

Three fan speeds available

1.4 Control system

Item		Model name	Image	Function	Applicable model
Remote Controller	Standard type				
	Luxury type				
Wire Controller	Common type	ZP-DX010			Four-way cassette Ceiling floor Low static pressure duct Medium static pressure duct High static pressure duct
	With signal receiver	ZP-DX011			
	With weekly timer	ZP-DX012			

Part 2 Product Data

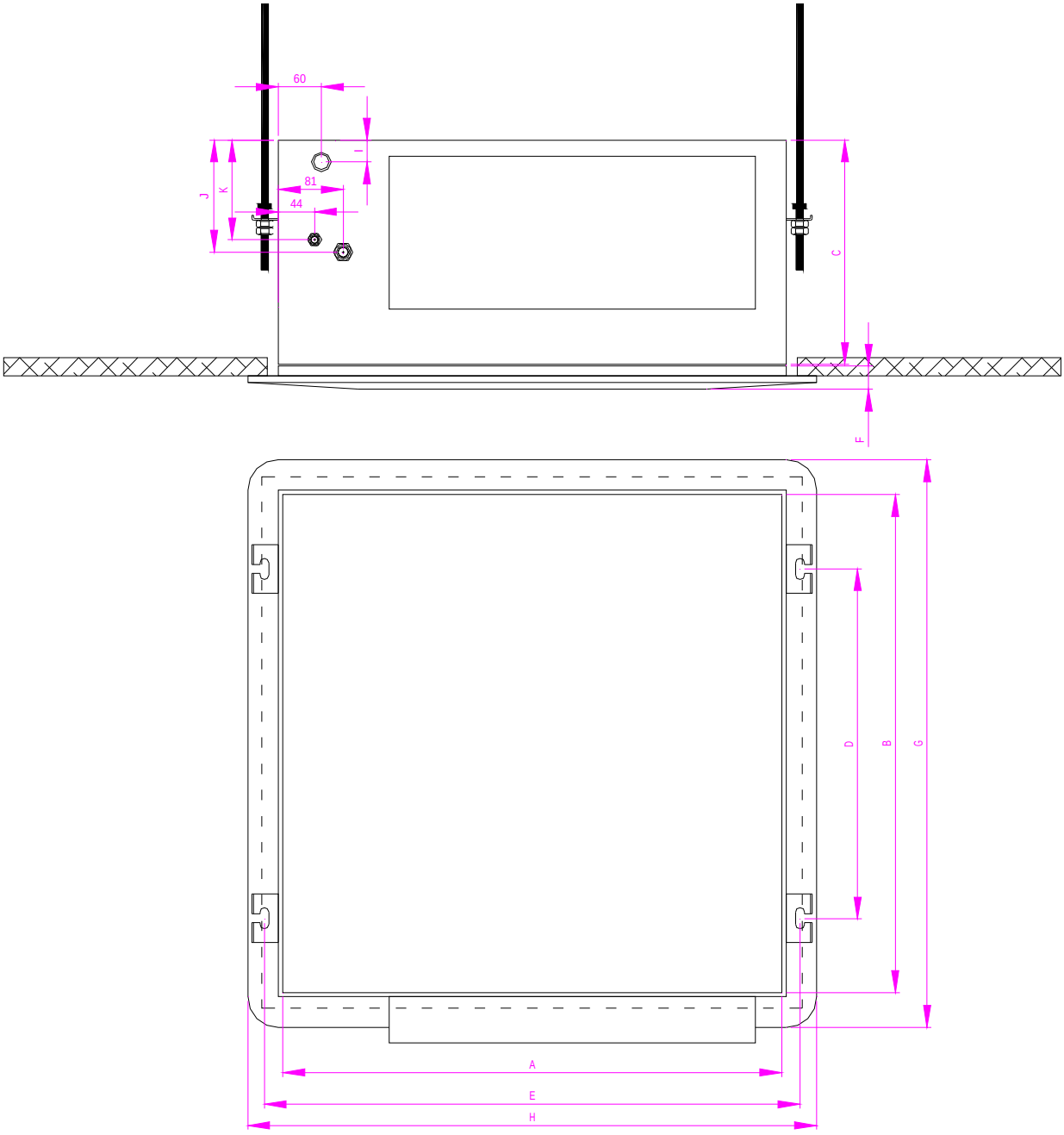
2.1 Four-way Cassette Type

2.1.1 Specifications

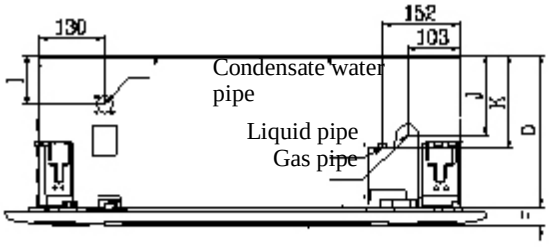
Model name	FACTORY	Set	IC-18HR/U	IC-24HR/U	IC-36HRS/U	IC-48HRS/U
Power supply		V/Ph/Hz	220-240/1/50	220-240/1/50	380V/3/50	380V/3/50
Cooling	Capacity	Btu/h	18000	24000	36000	48000
	Capacity	W	5300	7100	10500	14000
	Input	W	1820	2460	3745	5120
	Rated current	A	8.2	11.8	6.7	8.93
	EER	W/W	2.91	2.89	2.80	2.73
Heating	Capacity	Btu/h	19800	26000	41600	52800
	Capacity	W	5800	7620	12200	15470
	Input	W	1860	2340	3810	5080
	Rated current	A	8.9	11.2	6.5	9.1
	COP	W/W	3.12	3.26	3.20	3.05
Moisture Removal		l/h	2.55	3.15	4.1	4.26
Max. input consumption		W	2490	3200	5070	6770
Max. current		A	11.9	15.3	9.1	12.1
Starting current		A	45	60	35	45
Operation Control			remote/wrie controller	remote/wrie controller	remote/wrie controller	remote/wrie controller
Indoor coil	Number of row		2	2	2	2
	Fin spacing	mm	1.3	1.3	1.3	1.3
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	mm	φ7	φ7	φ7	φ7
	Tube material		Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube
	Coil size (L/H/W)	mm	1220x210x25.4	1980x168x25.4	1980x252x25.4	1980x252x25.4
	Number of circuit		5	8	12	12
Indoor fan motor	Brand		MIKE	HELONG	HELONG	HELONG
	Model		YDK120-30-6P	YDK-40A-6	YDK-70A-6	YDK-100D-6
	Input	W	45	78	100	160
	Output	W	30	40	70	100
	Running current	A	0.22	0.37	0.5	0.75
	Capacitor	mF	3.5	3.5	3.5	5
	Speed (Hi/Me/Lo)	rpm	930/820/710	710/580/330	770/650/450	860/760/670
Indoor air flow (Hi/Me/Lo)		m^3/h	750/680/590	1200/1000/580	1600/1300/970	1800/1600/1400
Indoor noise level (Hi/Me/Lo)		dB(A)	42/40/38	51/45/31	52/48/41	52/48/41
Casing dimension	Unit (WxHxD)	mm	570x255x570	840x230x840	840x300x840	840x300x840
	Packing (WxHxD)	mm	710x310x710	950x345x940	950x415x940	950x415x940
Panel dimension	Unit (WxHxD)	mm	650×30×650	953×40×953	953×40×953	953×40×953
	Packing (WxHxD)	mm	760×100×760	1030×135×1030	1030×135×1030	1030×135×1030
Casing weight	Net	kg	23	27	33	33

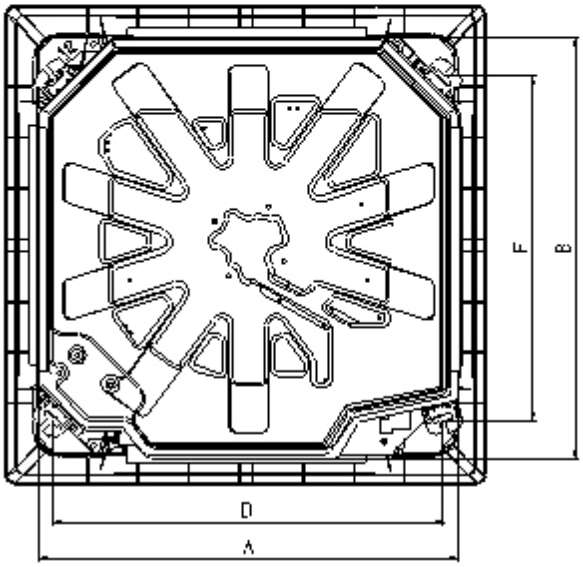
	Gross	**kg**	25	36	43	43
Panel weight	**Net**	**kg**	2	6	6	6
	Gross	**kg**	4	9	9	9
Outdoor coil	**Number of row**		2	2	2	2
	Fin spacing	**mm**	1.5	1.5	1.5	1.5
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	**mm**	φ9.52	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil size (L/H/W)	**mm**	754×650×44	790x655x44	830x760x44	920x900x44
	Number of circuit		3	4	6	8
Compressor	**Brand**		HITACHI	PANASONIC	SANYO	SANYO
	Model		ASH218SV-C8LU	5VS270EAA21	C－SBN303H8D	C－SBN373H8D
	Type		Rotary	Rotary	Scroll	Scroll
	Capacity	**Btu/h**	17640	22810	33400	48100
	Input	**W**	1780	2260	3650	4750
	Rated current(RLA)	**A**	8.21	10.4	6.58	8.22
	Locked rotor Amp	**A**	41	50	30	40
	Thermal protector		INNER	INNER	INNER	INNER
	Capacitor	**mF**	50μF/370V	40μF/450V	/	/
	Refrigerant oil	**ml**	HAF68D1/520ml	FV50S/750ml	FV68S/1700ml	FV68S/1700ml
Outdoor fan motor	**Brand**		GALANZ	GALANZ	GALANZ	GALANZ
	Model		GAL6P55A-KWD	GAL075H61225-K01	GAL090H61230-K01	GAL180H61445-K01
	Input	**W**	90	125	150	300
	Output	**W**	45	65	75	150
	Running current	**A**	0.4	0.55	0.66	1.33
	Capacitor	**mF**	3μF/450V	4μF/450V	5μF/450V	10μF/450V
	Speed	**rpm**	900	830	850	740
Outdoor air flow		**m^3/h**	1800	2800	4000	5000
Outdoor noise level		**dB(A)**	56	58	62	62
Outdoor dimension	**Unit (WxHxD)**	**mm**	800×670×300	845x680x310	880x790x360	970×928×345
	Packing (WxHxD)	**mm**	1010×775×430	1010×755×430	1030x890x480	1095×1070×470
Outdoor weight	**Net**	**kg**	50	64	70	85
	Gross	**kg**	55	69	80	97
Refrigerant	**Type**		R410A	R410A	R410A	R410A
	Charge	**g**	1800	2200	2800	3300
Refrigerant pipe	**Liquid side**	**mm**	6.35(1/4")	9.52(3/8")	9.52(3/8")	9.52(3/8")
	Gas side	**mm**	12.7(1/2")	15.88(5/8")	19.05(3/4")	19.05(3/4")
	Max. pipe length	**m**	25	30	30	50
	Max. level difference	**m**	10	15	15	30
Operation temperature range		**℃**	16～31	16～31	16～31	16～31
Ambient temperature range		**℃**	-7～43	-7～43	-7～43	-7～43
Application area		**m^2**	20～36	27～45	40～71	55～98
Qty'per 20'& 40'&40HQ		**Set**	52/111/118	29/69/80	25/58/64	24/56/60

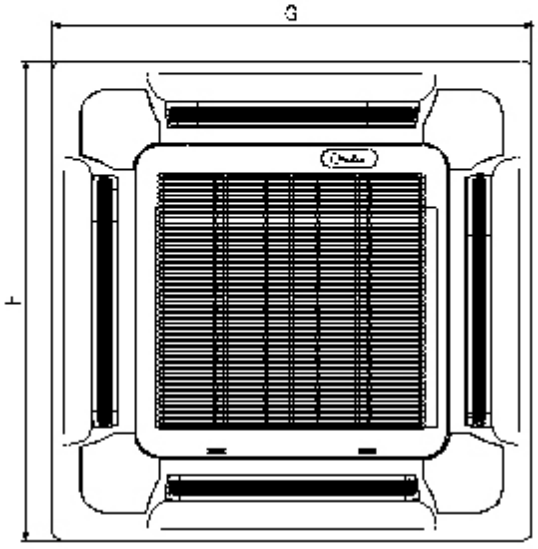
2.1.2 Structure Diagram



Specification \ Dimension code	Overall dimension			Installation dimension		Panel dimension			Dimension of position for exit pipe		
	A	B	C	D	E	F	G	H	I	J	K
18K	570	570	255	398	618	30	650	650	41	125	110



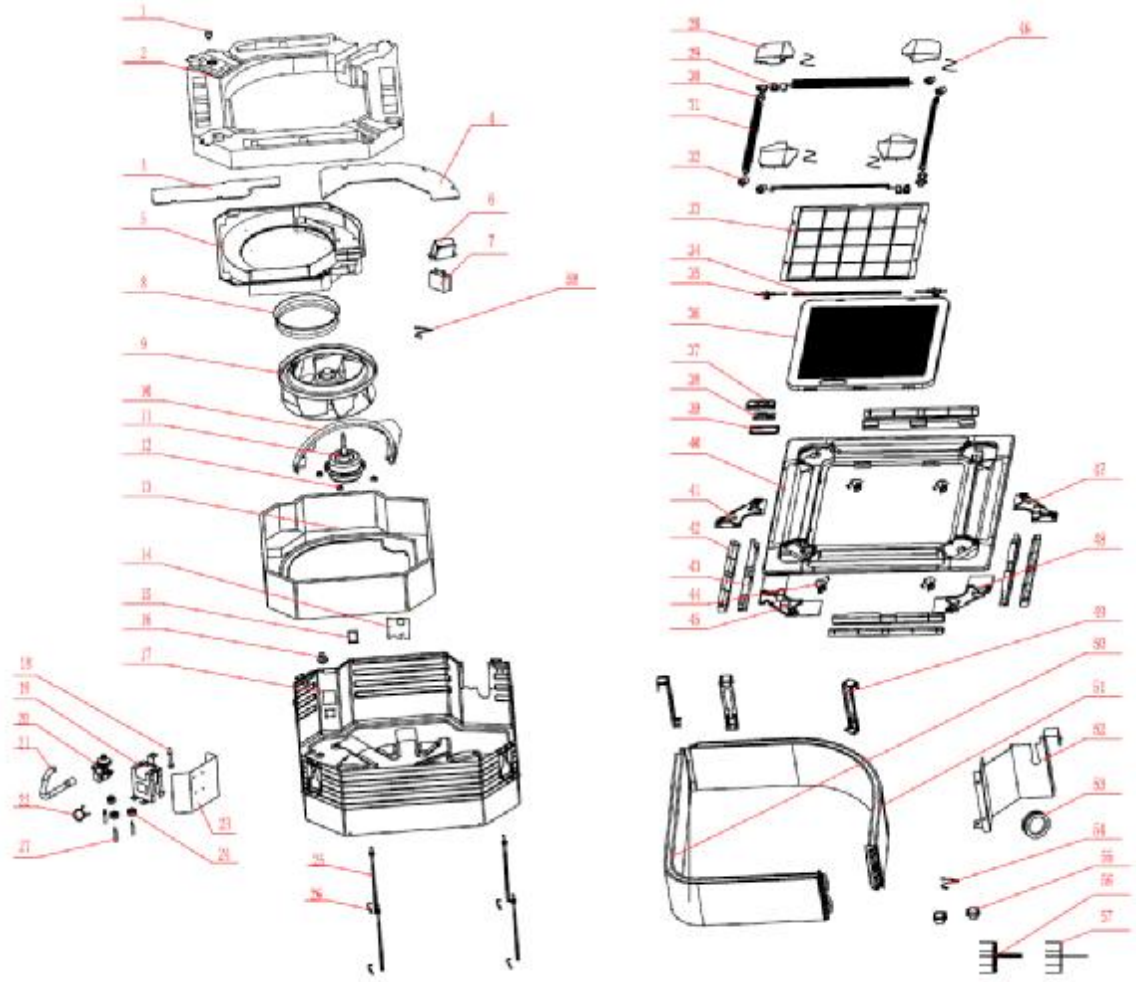




Unit: mm

Specification \ Dimension code	Overall dimension			Installation dimension		Panel dimension			Dimension of position for exit pipe		
	A	B	C	D	E	F	G	H	I	J	K
24K 36K	840	840	230	780	680	38	950	950	50	68	105
42K 48K	840	840	300	780	680	38	950	950	98	160	185

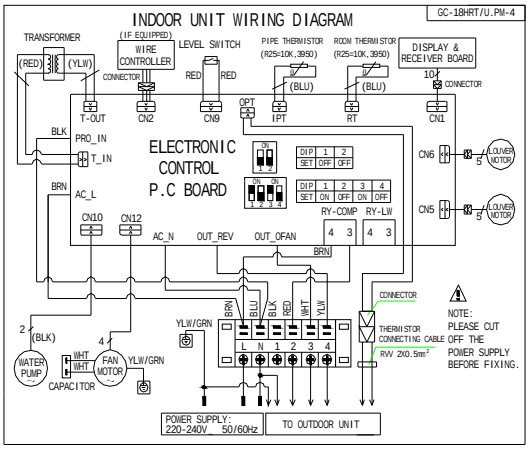
2.1.3 Explosion Diagram



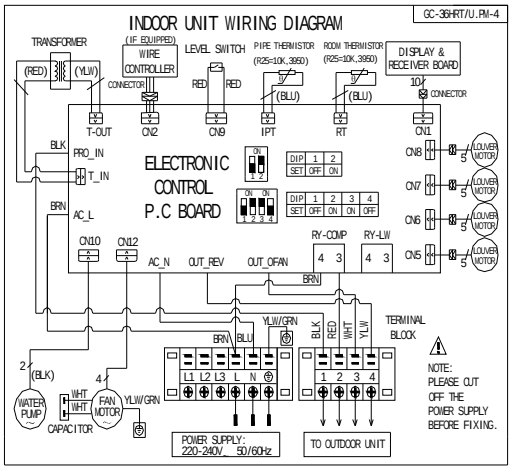
No.	English name	Q.	No.	English name	Q.	No.	English name	Q.
1	Drain plug	1	20	Water pump	1	39	Signal receiver cover	1
2	Drain pan assembly	1	21	Drain pipe 1	1	40	Indoor panel	1
3	Control box cover 1	1	22	Drain pipe clip ring	1	41	Air outtake cover plate 3	1
4	Control box cover 2	1	23	Water baffler	1	42	Panel foam 1	4
5	Control box	1	24	Water pump plastic washer	3	43	Panel foam 1	4
6	Transformer	1	25	Mounting Hanging Bracket Assembly	4	44	Panel hook assembly	4
7	Fan motor capacitor	1	26	Expansion Hook Assembly	4	45	Air outtake cover plate 1	1
8	Air-flow guiding ring	1	27	Water pump supporter fixing bolt	3	46	Mounting cover plate rope	4
9	Fan assembly	1	28	Mounting cover panel	4	47	Air outtake cover plate 2	1
10	Electric heater assembly	1	29	Stepping motor fixing supportor	4	48	Air outtake cover plate 4	1
11	Indoor fan motor	1	30	Stepping motor	4	49	Evaporator fixing plate assembly	3
12	Motor steel washer	6	31	Deflection panel	4	50	Evaporator assembly 1	1
13	Evaporator supporting foam	1	32	Bearing supportor	4	51	Evaporator assembly 2	1
14	Pipes fixing plate	1	33	Filter assembly	1	52	Separating plate	1
15	Checking spot cover plate	1	34	Grill switch fixing panel	1	53	Cable protecting ring	1
16	Drain pipe joint	1	35	Grill switch	2	54	Sensor socket	2
17	Indoor case	1	36	Air intake grill	1	55	Evaporator protection clip	2
18	Water level switch	1	37	Signal receiver panel	1	56	Evaporator distributing tubes	1
19	Water pump supporter	1	38	Signal receiving board	1	57	Evaporator header assembly	1
						58	Coil sensor	1

2.1.4 Wiring Diagram

18K Heat Pump



24K 36K 48K Heat Pump



2.1.5 Performance Variable Table

2.5.1 Variation table of cooling capacity

Cooling capacity (kW)	Outdoor temperature (℃, WB)	Indoor temperature (℃, WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
7.1 (24K)	10.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.2	5.0
	12.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.1	4.9
	14.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.0	4.9
	16.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.9	4.8
	18.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.7	4.7
	20.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.5	4.6
	21.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.4	4.5
	23.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.3	4.5
	25.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.2	4.4
	27.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.1	4.7	8.2	4.5
	29.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.0	4.7	8.1	4.5
	31.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.9	4.6	7.8	4.3
	33.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.8	4.6	7.8	4.3
	35.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.6	4.5	7.7	4.2
	37.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.4	4.8	7.5	4.5	7.6	4.3
	39.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.2	4.7	7.4	4.4	7.6	4.3
10.5 (36K)	10.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	13.8	8.0
	12.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	12.9	7.5
	14.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	12.7	7.4
	16.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	12.6	7.3
	18.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	12.5	7.3
	20.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	12.4	7.2
	21.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.9	7.4	12.3	7.1
	23.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.7	7.3	12.2	7.1
	25.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.6	7.2	12.1	7.0
	27.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.5	7.1	12.0	7.0
	29.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.4	7.1	11.9	7.0
	31.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.3	7.0	11.4	6.7
	33.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.6	7.2	11.2	6.9	11.2	6.6
	35.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.5	7.1	11.1	6.9	11.0	6.5
	37.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.4	7.1	11.0	6.8	10.8	6.4
	39.0	6.9	5.7	8.1	6.3	9.4	6.9	10.5	7.0	10.2	6.9	10.9	6.8	10.6	6.4

TH: total heat SH: sensible heat

Cooling capacity (kW)	Outdoor temperature (℃, WB)	Indoor temperature (℃, WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
12.5 (42K)	10.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	17.3	10.0
	12.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	16.1	9.4
	14.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	15.9	9.2
	16.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	15.8	9.1
	18.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	15.6	9.1
	20.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	15.5	9.0
	21.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.9	9.2	15.4	8.9
	23.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.6	9.1	15.3	8.8
	25.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.5	9.0	15.1	8.8
	27.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.4	8.9	15.0	8.7
	29.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.3	8.8	14.9	8.8
	31.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.1	8.8	14.3	8.4
	33.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.3	9.0	14.0	8.7	14.0	8.3
	35.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.1	8.9	13.9	8.6	13.8	8.1
	37.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	13.0	8.8	13.8	8.5	13.5	8.0
	39.0	8.6	7.2	10.1	7.9	11.8	8.6	12.5	8.8	12.8	8.7	13.6	8.4	13.3	8.0
14.0 (48K)	10.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	18.2	10.2
	12.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.9	10.0
	14.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.8	10.0
	16.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.5	9.8
	18.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	17.1	9.6
	20.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	16.8	9.4
	21.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.7	10.2	16.5	9.3
	23.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.4	10.2	16.4	9.2
	25.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.2	10.1	16.2	9.1
	27.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.1	10.0	16.1	9.2
	29.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	16.0	9.9	16.0	9.1
	31.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	15.8	9.8	15.4	8.8
	33.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.8	9.8	15.7	9.7	15.4	8.8
	35.0	9.7	7.8	11.3	8.6	13.2	9.6	**14.0**	9.8	14.7	9.7	15.1	9.4	15.1	8.8
	37.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.6	9.6	15.1	9.4	15.0	8.7
	39.0	9.7	7.8	11.3	8.6	13.2	9.6	14.0	9.8	14.3	9.4	14.6	9.2	15.0	8.8

TH: total heat SH: sensible heat

2.5.2 Variation table of heating capacity

Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃, DB)						Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃, DB)					
			16	18	20	21	22	24				16	18	20	21	22	24
			TH	TH	TH	TH	TH	TH				TH	TH	TH	TH	TH	TH
	WB	DB	kW	kW	kW	kW	kW	kW		WB	DB	kW	kW	kW	kW	kW	kW
7.1 (24K)	-15.0	-14.7	5.04	5.04	5.04	5.04	5.04	5.04	10.5 (36K)	-15.0	-14.7	6.93	6.93	6.93	6.93	6.93	6.93
	-13.0	-12.6	5.36	5.36	5.36	5.36	5.36	5.36		-13.0	-12.6	7.37	7.37	7.37	7.37	7.37	7.37
	-11.0	-10.5	5.60	5.60	5.60	5.60	5.60	5.60		-11.0	-10.5	7.70	7.70	7.70	7.70	7.70	7.70
	-10.0	-9.5	5.84	5.84	5.84	5.84	5.84	5.84		-10.0	-9.5	8.03	8.03	8.03	8.03	8.03	8.03
	-9.1	-8.5	6.00	6.00	6.00	6.00	6.00	6.00		-9.1	-8.5	8.25	8.25	8.25	8.25	8.25	8.25
	-7.6	-7.0	6.08	6.08	6.08	6.08	6.08	6.08		-7.6	-7.0	8.36	8.36	8.36	8.36	8.36	8.36
	-5.6	-5.0	6.32	6.32	6.32	6.32	6.32	6.32		-5.6	-5.0	8.69	8.69	8.69	8.69	8.69	8.69
	-3.7	-3.0	6.64	6.64	6.64	6.64	6.64	6.64		-3.7	-3.0	9.13	9.13	9.13	9.13	9.13	9.13
	-0.7	0.0	7.12	7.12	7.12	7.12	7.12	6.72		-0.7	0.0	9.79	9.79	9.79	9.79	9.79	9.24
	2.2	3.0	7.52	7.52	7.52	7.52	7.36	6.72		2.2	3.0	10.34	10.34	10.34	10.34	10.12	9.24
	4.1	5.0	7.76	7.76	7.76	7.76	7.36	6.72		4.1	5.0	10.67	10.67	10.67	10.67	10.12	9.24
	6.0	7.0	8.00	8.00	8.00	7.76	7.36	6.72		6.0	7.0	11.00	11.00	11.00	10.67	10.12	9.24
	7.9	9.0	8.24	8.24	8.00	7.76	7.36	6.72		7.9	9.0	11.33	11.33	11.00	10.67	10.12	9.24
	9.8	11.0	8.48	8.48	8.00	7.76	7.36	6.72		9.8	11.0	11.66	11.66	11.00	10.67	10.12	9.24
	11.8	13.0	8.80	8.64	8.00	7.76	7.36	6.72		11.8	13.0	12.10	11.88	11.00	10.67	10.12	9.24
	13.7	15.0	9.04	8.64	8.00	7.76	7.36	6.72		13.7	15.0	12.43	11.88	11.00	10.67	10.12	9.24
12.5 (42K)	-15.0	-14.7	8.51	8.51	8.51	8.51	8.51	8.51	14.0 (48K)	-15.0	-14.7	9.45	9.45	9.45	9.45	9.45	9.45
	-13.0	-12.6	9.05	9.05	9.05	9.05	9.05	9.05		-13.0	-12.6	10.05	10.05	10.05	10.05	10.05	10.05
	-11.0	-10.5	9.45	9.45	9.45	9.45	9.45	9.45		-11.0	-10.5	10.50	10.50	10.50	10.50	10.50	10.50
	-10.0	-9.5	9.86	9.86	9.86	9.86	9.86	9.86		-10.0	-9.5	10.95	10.95	10.95	10.95	10.95	10.95
	-9.1	-8.5	10.13	10.13	10.13	10.13	10.13	10.13		-9.1	-8.5	11.25	11.25	11.25	11.25	11.25	11.25
	-7.6	-7.0	10.26	10.26	10.26	10.26	10.26	10.26		-7.6	-7.0	11.40	11.40	11.40	11.40	11.40	11.40
	-5.6	-5.0	10.67	10.67	10.67	10.67	10.67	10.67		-5.6	-5.0	11.85	11.85	11.85	11.85	11.85	11.85
	-3.7	-3.0	11.21	11.21	11.21	11.21	11.21	11.21		-3.7	-3.0	12.45	12.45	12.45	12.45	12.45	12.45
	-0.7	0.0	12.02	12.02	12.02	12.02	12.02	11.34		-0.7	0.0	13.35	13.35	13.35	13.35	13.35	12.60
	2.2	3.0	12.69	12.69	12.69	12.69	12.42	11.34		2.2	3.0	14.10	14.10	14.10	14.10	13.80	12.60
	4.1	5.0	13.10	13.10	13.10	13.10	12.42	11.34		4.1	5.0	14.55	14.55	14.55	14.55	13.80	12.60
	6.0	7.0	13.50	13.50	13.50	13.10	12.42	11.34		6.0	7.0	15.00	15.00	15.00	14.55	13.80	12.60
	7.9	9.0	13.91	13.91	13.50	13.10	12.42	11.34		7.9	9.0	15.45	15.45	15.00	14.55	13.80	12.60
	9.8	11.0	14.31	14.31	13.50	13.10	12.42	11.34		9.8	11.0	15.90	15.90	15.00	14.55	13.80	12.60
	11.8	13.0	14.85	14.58	13.50	13.10	12.42	11.34		11.8	13.0	16.50	16.20	15.00	14.55	13.80	12.60
	13.7	15.0	15.26	14.58	13.50	13.10	12.42	11.34		13.7	15.0	16.95	16.20	15.00	14.55	13.80	12.60

TH: total heat

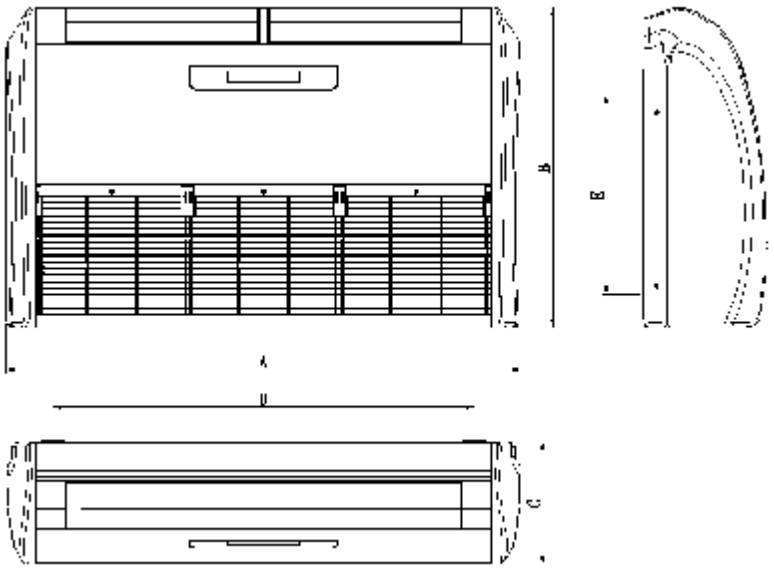
2.2 Ceiling Floor Type

2.2.1 Specifications

Model name		Set	IF-12HR/AU	IF-18HR/AU	IF-24HR/AU	IF-36HRS/AU	IF-48HRS/AU	IF-60HRS/AU
Power supply		V/Ph/Hz	220V/1Ph/50Hz	220V/1Ph/50Hz	220V/1Ph/50Hz	380V/3Ph/50Hz	380V/3Ph/50Hz	380V/3Ph/50Hz
Cooling	Capacity	Btu/h	12000	18000	24000	36000	48000	60000
	Capacity	W	3500	5300	7100	10500	14000	16000
	Input	W	1200	1860	2510	3740	5020	5780
	Rated current	A	5.3	8.2	11.0	6.7	8.9	10.2
	EER	W/W	2.92	2.85	2.83	2.81	2.79	2.77
Heating	Capacity	Btu/h	13200	19800	26400	39600	52800	66000
	Capacity	W	3870	5560	7730	11600	15475	18000
	Input	W	1185	1870	2580	3910	5350	6200
	Rated current	A	5.1	8.3	11.3	7.0	9.2	10.4
	COP	W/W	3.27	2.97	3.00	2.97	2.89	2.90
Moisture Removal		l/h	2.17	2.66	2.93	3.88	4.5	5.2
Max. input consumption		W	1570	2570	3410	5220	7130	8420
Max. current		A	7.5	12.3	16.3	9.3	12.7	15.1
Starting current		A	30	48	60	35	45	55
Operation Control			Remote/wire controler	Remote/wire controler	Remote/wire controler	Remote/wire controler	Remote/wire controler	Remote/wire controler
Indoor coil	Number of row		2	3	3	3	3	3
	Fin spacing	mm	1.4	1.4	1.4	1.4	1.4	1.4
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	mm	Φ7	Φ7	Φ7	Φ7	Φ7	Φ7
	Tube material		Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube
	Coil size (L/H/W)	mm	965×276×25.4	965×276×38.1	965×276×38.1	1265×276×38.1	1565×276×38.1	1865×276×38.1
	Number of circuit		2	3	3	8	8	8
Indoor fan motor	Brand		zhongshan broad-ocean	zhongshan broad-ocean	zhongshan broad-ocean	zhongshan broad-ocean	zhongshan broad-ocean	zhongshan broad-ocean
	Model		Y6S419B05	Y6S419B04	Y6S419C83	Y6S419B57	Y6S419B58	Y7S423D013
	Input	W	63	112	240	225	440	520
	Output	W	35	60	100	90	120*2	135*2
	Running current	A	0.26	0.51	1.1	1	2	2.35
	Capacitor	μF	3	3	6	4	3.5	6
	Speed (Hi/Me/Lo)	rpm	950/795/630	1220/1090/940	1690/1180/1000	1625/1455/1260	1610/1300/1160	1700/1500/1200
Indoor air flow (Hi/Me/Lo)		m^3/h	650	850	1200	1700	2200	2600
Indoor noise level (Hi/Me/Lo)		dB(A)	42/40/38	44/42/40	46/44/42	49/47/45	52/50/48	53/51/49
Indoor dimension	Unit (WxHxD)	mm	1016×630×240	1016×630×240	1016×630×240	1316×630×240	1616×630×240	1916×630×240
	Packing (WxHxD)	mm	1085×700×285	1085×700×285	1085×700×285	1385×700×285	1685×700×285	1985×700×285
Indoor weight	Net	kg	32	34	34	45	56	70
	Gross	kg	37	39	39	50	62	78

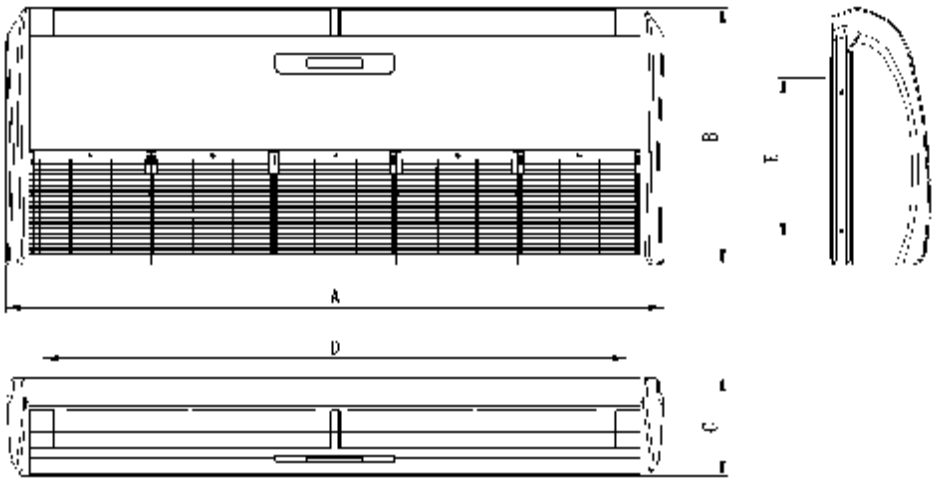
Outdoor coil	Number of row		1	2	2	2	2	2
	Fin spacing	mm	1.4	1.5	1.5	1.5	1.5	1.8
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	mm	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil size (L/H/W)	mm	654×523×22	754×650×44	790x655x44	830x760x44	920x900x44	920x1220x44
	Number of circuit		3	3	4	6	8	8
Compressor	Brand		GALANZ	HITACHI	PANASONIC	SANYO	SANYO	SANYO
	Model		QXR-AB132Z235CBA	ASH218SV-C8LU	5VS270EAA21	C－SBN303H8D	C－SBN373H8D	C－BN453H8D
	Type		Rotary	Rotary	Rotary	Scroll	Scroll	Scroll
	Capacity	Btu/h	11000	17640	22810	33400	48100	56900
	Input	W	1100	1780	2260	3650	4750	5750
	Rated current(RLA)	A	5.05	8.21	10.4	6.58	8.22	9.77
	Locked rotor Amp	A	24	41	50	30	40	45
	Thermal protector		INNER	INNER	INNER	INNER	INNER	INNER
	Capacitor	mF	30μF/370V	50μF/370V	40μF/450V	/	/	/
	Refrigerant oil	ml	FV50S/350ml	HAF68D1/520ml	FV50S/750ml	FV68S/1700ml	FV68S/1700ml	FV68S/1700ml
Outdoor fan motor	Brand		GALANZ	GALANZ	GALANZ	GALANZ	GALANZ	GALANZ
	Model		GAL030H60920-K01	GAL6P55A-KWD	GAL075H61225-K01	GAL090H61230-K01	GAL180H61445-K01	GAL6P60A2-KWD
	Input	W	50	90	125	150	300	105×2
	Output	W	25	45	65	75	150	60×2
	Running current	A	0.23	0.4	0.55	0.66	1.33	0.45×2
	Capacitor	mF	2μF/450V	3μF/450V	4μF/450V	5μF/450V	10μF/450V	3μF/450V
	Speed	rpm	780	900	830	850	740	830
Outdoor air flow		m^3/h	1500	1800	2800	4000	5000	5800
Outdoor noise level		dB(A)	53	56	58	62	62	63
Outdoor dimension	Unit (WxHxD)	mm	700x540x255	800×670×300	845x680x310	880x790x360	970×928×345	973x1239x350
	Packing (WxHxD)	mm	800x620x375	1010×775×430	1010×755×430	1030x890x480	1095×1070×470	1065x1390x435
Outdoor weight	Net	kg	30	50	64	80	85	110
	Gross	kg	33.5	55	69	90	97	122
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A	R410A
	Charge	g	1100	1800	2200	2800	3300	3800
Refrigerant pipe	Liquid side	mm	6.35	6.35	9.52	9.52	9.52	9.52
	Gas side	mm	12.7	12.7	15.88	19.05	19.05	19.05
	Max. pipe length	m	25	25	30	30	50	50
	Max. level difference	m	10	10	15	15	30	30
Operation temperature range		℃	16～31	16～31	16～31	16～31	16～31	16～31
Ambient temperature range		℃	-7～43	-7～43	-7～43	-7～43	-7～43	-7～43
Application area		m^2	14～21	20～36	27～45	40～71	55～98	68～110
Qty'per 20'& 40'&40HQ		Set	63/143/168	51/109/120	51/109/120	36/76/94	30/64/67	25/52/55

2.2.2 Structure Diagram



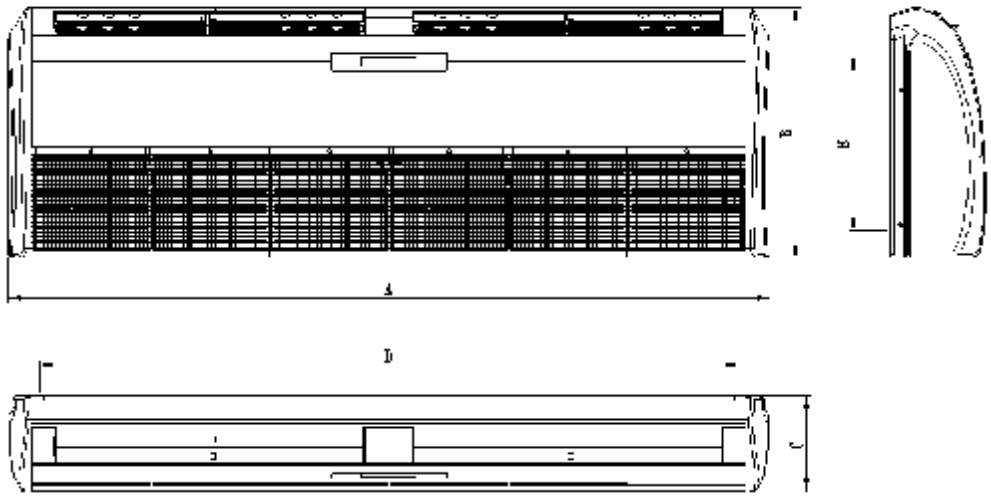
Unit:mm

Dimension / Model	Net dimension			Installing dimension (on the ceiling)		Installing dimension (on the floor)	
	A	B	C	D	E	D	E
12K	1016	630	240	938	294	818	310
18K	1016	630	240	938	294	818	310
24K	1016	630	240	938	294	818	310
36K	1316	630	240	1238	294	1118	310



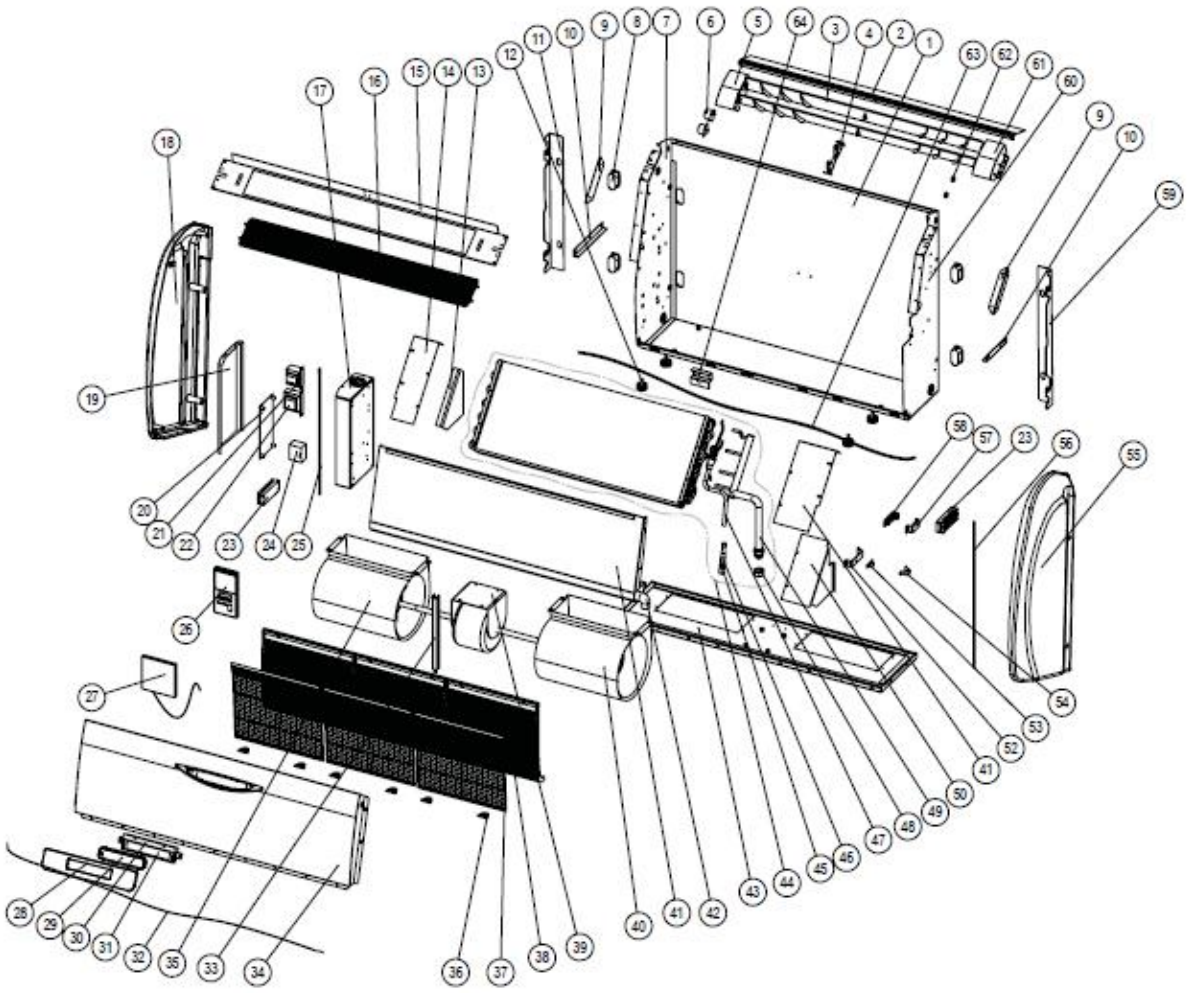
Unit:mm

Dimension / Model	Net dimension			Installing dimension (on the ceiling)		Installing dimension (on the floor)	
	A	B	C	D	E	D	E
48K	1616	630	240	1538	294	1418	310



Dimension / Model	Net dimension			Installing dimension (on the ceiling)		Installing dimension (on the floor)	
	A	B	C	D	E	D	E
60K	1916	630	240	1838	294	1718	310

2.2.3 Explosion Diagram

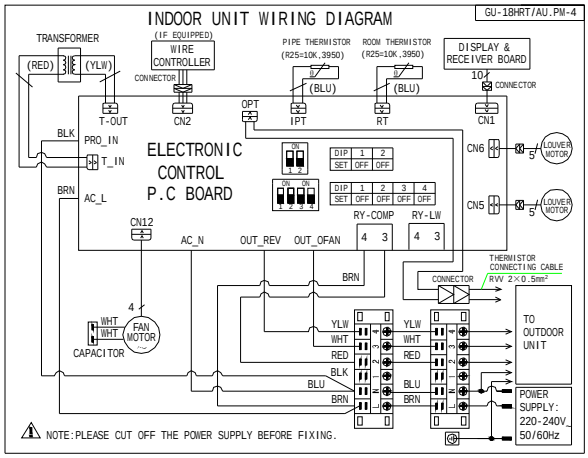


No.	English name	Q.	No.	English name	Q.
1	PLATE , BACK	1	33	PLATE , USUPPORTER	1
2	PLATE , TOP	1	34	PLATE , FRONT	1
3	PANEL, LOUVER , P LASTIC	2	35	FAN , SY P 150/200J, R IG H T	1
4	PANEL, SUPPORTLOUVER , PLASTIC , 90DEGREE	1	36	LOCK FOR RETURN GRILL, PLASTIC	6
5	BAR , LEFT, PLASTIC	1	37	FILTER , AIR -RETURN , PLASTIC	3
6	STEPPING MOTOR	2	38	GRILL, AIR -RETURN , PLASTIC	3
7	P LATE , SIDE , LEFT	1	39	MOTOR	1
8	COVER , FIXHOLE , PLASTIC	4	40	FAN, SYP150/200J, LEFT	1
9	PLATE , COIL, FIXER , SIDE	2	41	PAN, DRAIN, FRONT	1
10	PLATE , FANHOUSING -FIXER	2	42	PIP E , DRAIN	1
11	PLATE , HANGER , RIGHT	1	43	PLATE , MOTOR BASE , ASSEMBLY	1
12	BOTTOMSTEPPING , PLASTIC	4	44	COIL ASSEMBLY	1
13	PLATE , COIL, FIXER , BACK , LEFT	1	45	FLOW CONTROL BODY	1

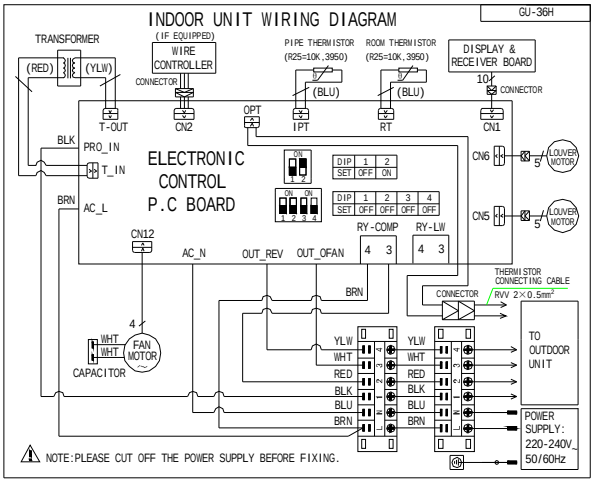
14	PLATE , COIL, FIXER , LEFT	1	46	PISTON , 042”	1
15	PLATE , GRILL, FRONT	1	47	DISTRIBUTOR ASSEMBLY	1
16	PLATE , GRILL, HAND PROTECTOR	1	48	CONCOURSELID	1
17	CONTROL BOX	1	49	HEADER , TUBE , ASSEMBLY	1
18	PANEL, SIDE , LEFT, PLASTIC	1	50	PLATE , COIL, FIXER , BACK , RIGHT	1
19	ELECTRIC BOX LID , PLATE	1	51	PLATE , COIL, FIXER , RIGHT	1
20	MAINPCBOARD	1	52	PLATE , TUBECONTROL, SIDE , RIGHT	1
21	PC BTRANS FOR MER	1	53	PLATE , TUBEFASEND 7, SIDE , RIGHT	1
22	CONTROL TRANS FO R MER	1	54	PLATE , TUBEFASTEN , SIDE , RIGHT	1
23	TERM INAL 6P 450V A C 4M M 2	2	55	PANEL, SIDE , RIGHT, PLASTIC	1
24	CAPACITOR , 3μF 450V	1	56	ROOM SENSOR, R25=10K, B=3950, L=1000mm	1
25	COILSENSOR , R 25=10K , B =3950, L=1000m m	1	57	CLAMP , HOSE , ABS	1
26	WIRELESS REMOTE CONTR O L	1	58	CLAMP , HOSE , ABS	1
27	WIRE CONTROL	1	59	PLATE , HANGER , LEFT	1
28	SCREEN , FRONT, PLASTIC	1	60	PLATE , SIDE , RIGHT	1
29	SCREEN , FRONTIN SID E , PLASTIC	1	61	BAR , RIGHT, PLASTIC	1
30	PANEL, CONTROL DISPLAY , PLASTIC	1	62	BUSH , PLASTIC	2
31	PC _BOARD , DISPLAY	1	63	PLATE , MID , UHOLDE R	1
32	WIRE, BULK, 18C2, WH, 016, AWM, TEW	1	64	WIRE , BULK , 18C2, BK , 016, AWM , TEW	1

2.2.4 Wiring diagram

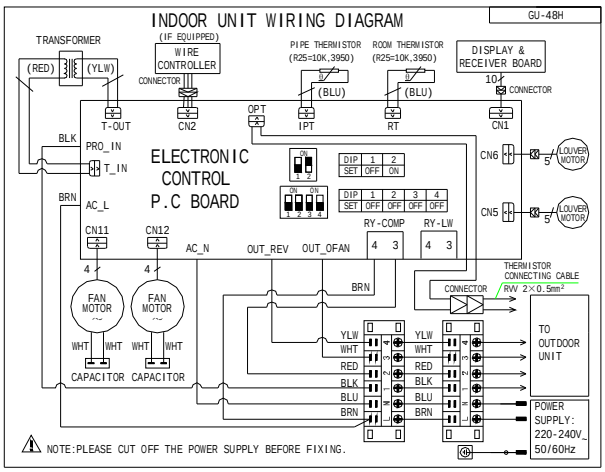
09K 12K 18K Heat Pump, Auto Swing



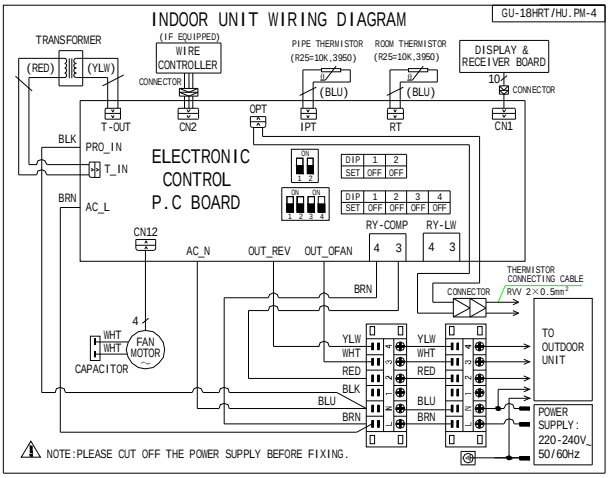
24K 30K 36K Heat Pump, Auto Swing



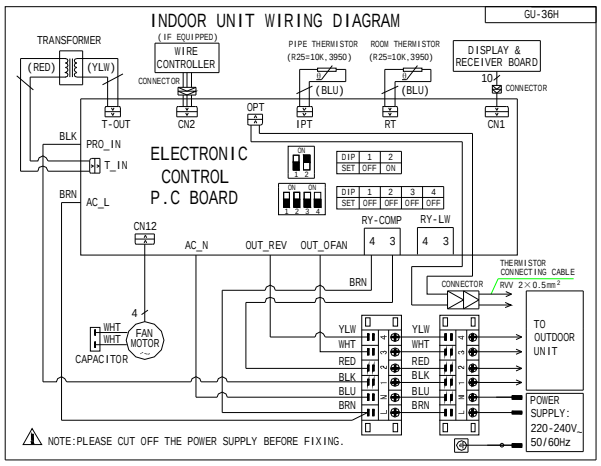
48K 60K Heat Pump, Auto Swing



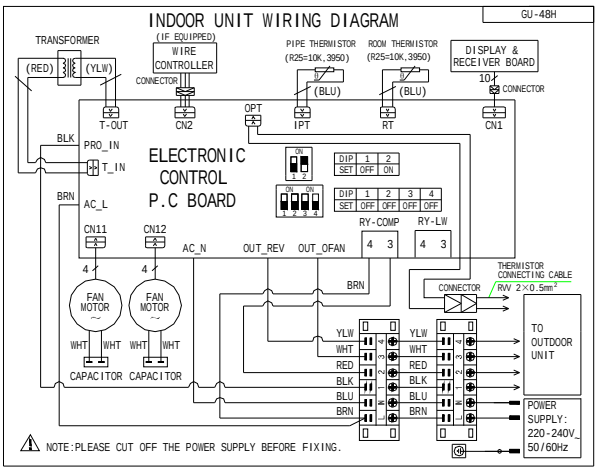
12K 18K Heat Pump, Manual Swing



24K 30K 36K Heat Pump, Manual Swing



48K 60K Heat Pump, Manual Swing



2.2.5 Performace Varable Table

Cooling capacity variation table

Cooling capacity (kW)	Outdoor temperature (℃，WB)	Indoor temperature (℃， WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
3.5 (12K)	10.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.9	2.3
	12.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.9	2.3
	14.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.8	2.3
	16.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.6	2.2
	18.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.7	2.3
	20.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.7	2.3
	21.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.6	2.3
	23.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.3	2.7	4.5	2.2
	25.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.2	2.3	4.4	2.2
	27.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.1	2.2	4.2	2
	29.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4.1	2.2	4.2	2
	31.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	4	2.1	4.1	1.9
	33.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	3.9	2.1	4.1	1.9
	35.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	3.8	2	4	1.9
	37.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.2	3.8	2.1	3.9	1.8
	39.0	2.1	1.6	2.7	1.8	3.2	2.1	3.5	2.2	3.6	2.1	3.7	2.1	3.8	1.8
5.3 (18K)	10.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.3	3.9
	12.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.2	3.8
	14.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.1	3.8
	16.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.0	3.7
	18.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.8	3.7
	20.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.7	3.6
	21.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.6	3.6
	23.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.6	3.5
	25.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.5	3.5
	27.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.4	3.8	6.4	3.5
	29.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.3	3.8	6.4	3.6
	31.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.2	3.7	6.2	3.4
	33.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.2	3.7	6.2	3.4
	35.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.0	3.6	6.0	3.4
	37.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	5.9	3.5	6.0	3.4
	39.0	3.9	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.7	3.7	5.8	3.5	6.0	3.4

TH: total heat SH: sensible heat

Cooling capacity (kW)	Outdoor temperature (℃，WB)	Indoor temperature (℃，WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
7.1 (24K)	10.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.2	5.0
	12.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.1	4.9
	14.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	9.0	4.9
	16.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.9	4.8
	18.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.7	4.7
	20.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.5	4.6
	21.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.4	4.5
	23.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.3	4.5
	25.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.4	4.9	8.2	4.4
	27.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.1	4.7	8.2	4.5
	29.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	8.0	4.7	8.1	4.5
	31.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.9	4.6	7.8	4.3
	33.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.8	4.6	7.8	4.3
	35.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.5	4.8	7.6	4.5	7.7	4.2
	37.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.4	4.8	7.5	4.5	7.6	4.3
	39.0	4.9	3.9	5.8	4.3	6.7	4.7	7.1	4.9	7.2	4.7	7.4	4.4	7.6	4.3
10.5 (36K)	10.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	10.4	7.8
	12.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	10.2	7.7
	14.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	10.2	7.7
	16.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	10.0	7.6
	18.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	9.8	7.6
	20.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	9.6	7.5
	21.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	9.4	7.4
	23.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	9.4	7.3
	25.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.4	7.9	9.3	7.3
	27.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11.1	7.7	9.2	7.2
	29.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	11	7.6	9.1	7.2
	31.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	10.9	7.5	8.8	7.1
	33.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.6	8.1	10.8	7.5	8.8	7.1
	35.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.5	8.1	10.6	7.3	8.6	7.1
	37.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.2	8.1	10.4	7.2	8.6	7.1
	39.0	8	7.2	9	7.6	9.9	8.1	10.5	8.2	10.2	8	10.3	7.2	8.6	7.1

TH: total heat SH: sensible heat

Cooling capacity (kW)	Outdoor temperature (℃，WB)	Indoor temperature (℃，WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
14 (48K)	10.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	18.5	12
	12.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	17.4	11.4
	14.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	17.2	11.2
	16.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	17.1	11.2
	18.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	17	11.1
	20.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	16.9	11.1
	21.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.3	11.3	16.8	11
	23.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16.1	11.1	16.7	10.9
	25.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	16	11.1	16.6	10.9
	27.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	15.9	11	16.4	10.8
	29.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	15.8	10.9	16.3	10.9
	31.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	15.7	10.8	15.8	10.5
	33.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.9	11.1	15.5	10.8	15.5	10.4
	35.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.8	11	15.4	10.7	15.3	10.3
	37.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.6	10.9	15.3	10.6	15.1	10.1
	39.0	10.7	7.4	12.1	10.1	13.5	10.7	14	10.8	14.4	10.8	15.2	10.6	14.9	10.1
17.5 (60K)	10.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.6	14.5	20.5	16
	12.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.6	14.5	20.4	15.4
	14.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.6	14.5	20.2	15.2
	16.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.6	14.5	20.1	15.2
	18.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.6	14.5	20	15.1
	20.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.6	14.5	19.9	15.1
	21.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.5	14.5	19.8	15
	23.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.4	14.4	19.7	14.9
	25.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.3	14.4	19.6	14.9
	27.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.2	14.3	19.4	14.8
	29.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	19.1	14.3	19.3	13.9
	31.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	18.9	14.2	18.8	13.5
	33.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.2	14.4	18.8	14.1	18.5	13.4
	35.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	18.1	14.3	18.7	14	18.3	13.3
	37.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	17.9	14.2	18.6	13.9	18.2	13.1
	39.0	14	12.7	15.4	13.4	16.8	14	17.5	11.1	17.7	14.1	18.5	13.9	18.1	13.1

TH: total heat SH: sensible heat

Heating capacity variation table

Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)						Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)					
			16	18	20	21	22	24				16	18	20	21	22	24
			TH	TH	TH	TH	TH	TH				TH	TH	TH	TH	TH	TH
	WB	DB	kW	kW	kW	kW	kW	kW		WB	DB	kW	kW	kW	kW	kW	kW
3.5 (12K)	-15.0	-14.7	2.15	2.15	2.15	2.15	2.15	2.15	5.3 (18K)	-15.0	-14.7	3.78	3.78	3.78	3.78	3.78	3.78
	-13.0	-12.6	2.35	2.35	2.35	2.35	2.35	2.35		-13.0	-12.6	4.02	4.02	4.02	4.02	4.02	4.02
	-11.0	-10.5	2.50	2.50	2.50	2.50	2.50	2.50		-11.0	-10.5	4.20	4.20	4.20	4.20	4.20	4.20
	-10.0	-9.5	2.65	2.65	2.65	2.65	2.65	2.65		-10.0	-9.5	4.38	4.38	4.38	4.38	4.38	4.38
	-9.1	-8.5	2.75	2.75	2.75	2.75	2.75	2.75		-9.1	-8.5	4.50	4.50	4.50	4.50	4.50	4.50
	-7.6	-7.0	2.80	2.80	2.80	2.80	2.80	2.80		-7.6	-7.0	4.56	4.56	4.56	4.56	4.56	4.56
	-5.6	-5.0	2.95	2.95	2.95	2.95	2.95	2.95		-5.6	-5.0	4.74	4.74	4.74	4.74	4.74	4.74
	-3.7	-3.0	3.15	3.15	3.15	3.15	3.15	3.15		-3.7	-3.0	4.98	4.98	4.98	4.98	4.98	4.98
	-0.7	0.0	3.45	3.45	3.45	3.45	3.45	3.20		-0.7	0.0	5.34	5.34	5.34	5.34	5.34	5.04
	2.2	3.0	3.70	3.70	3.70	3.70	3.60	3.20		2.2	3.0	5.64	5.64	5.64	5.64	5.52	5.04
	4.1	5.0	4.85	3.85	3.85	3.85	3.60	3.20		4.1	5.0	5.82	5.82	5.82	5.82	5.52	5.04
	6.0	7.0	4.00	4.00	4.00	3.85	3.60	3.20		6.0	7.0	6.00	6.00	6.00	5.82	5.52	5.04
	7.9	9.0	4.15	4.15	4.00	3.85	3.60	3.20		7.9	9.0	6.18	6.18	6.00	5.82	5.52	5.04
	9.8	11.0	4.30	4.30	4.00	3.85	3.60	3.20		9.8	11.0	6.36	6.36	6.00	5.82	5.52	5.04
	11.8	13.0	4.50	4.40	4.00	3.85	3.60	3.20		11.8	13.0	6.60	6.48	6.00	5.82	5.52	5.04
	13.7	15.0	4.65	4.40	4.00	3.85	3.60	3.20		13.7	15.0	6.78	6.48	6.00	5.82	5.52	5.04
7.1 (24K)	-15.0	-14.7	4.73	4.73	4.73	4.73	4.73	4.73	10.5 (36K)	-15.0	-14.7	8.67	8.67	8.67	8.67	8.67	8.67
	-13.0	-12.6	5.03	5.03	5.03	5.03	5.03	5.03		-13.0	-12.6	9.03	9.03	9.03	9.03	9.03	9.03
	-11.0	-10.5	5.25	5.25	5.25	5.25	5.25	5.25		-11.0	-10.5	9.30	9.30	9.30	9.30	9.30	9.30
	-10.0	-9.5	5.48	5.48	5.48	5.48	5.48	5.48		-10.0	-9.5	9.57	9.57	9.57	9.57	9.57	9.57
	-9.1	-8.5	5.63	5.63	5.63	5.63	5.63	5.63		-9.1	-8.5	9.75	9.75	9.75	9.75	9.75	9.75
	-7.6	-7.0	5.70	5.70	5.70	5.70	5.70	5.70		-7.6	-7.0	9.84	9.84	9.84	9.84	9.84	9.84
	-5.6	-5.0	5.93	5.93	5.93	5.93	5.93	5.93		-5.6	-5.0	10.11	10.11	10.11	10.11	10.11	10.11
	-3.7	-3.0	6.23	6.23	6.23	6.23	6.23	6.23		-3.7	-3.0	10.47	10.47	10.47	10.47	10.47	10.47
	-0.7	0.0	6.68	6.68	6.68	6.68	6.68	6.30		-0.7	0.0	11.01	11.01	11.01	11.01	11.01	10.56
	2.2	3.0	7.05	7.05	7.05	7.05	6.90	6.30		2.2	3.0	11.46	11.46	11.46	11.46	11.28	10.56
	4.1	5.0	7.28	7.28	7.28	7.28	6.90	6.30		4.1	5.0	11.73	11.73	11.73	11.73	11.28	10.56
	6.0	7.0	7.50	7.50	7.50	7.28	6.90	6.30		6.0	7.0	12.00	12.00	12.00	11.73	11.28	10.56
	7.9	9.0	7.73	7.73	7.50	7.28	6.90	6.30		7.9	9.0	12.27	12.27	12.00	11.73	11.28	10.56
	9.8	11.0	7.95	7.95	7.50	7.28	6.90	6.30		9.8	11.0	12.54	12.54	12.00	8.73	8.28	10.56
	11.8	13.0	8.25	8.10	7.50	7.28	6.90	6.30		11.8	13.0	12.90	12.72	12.00	8.73	8.28	10.56
	13.7	15.0	8.48	8.10	7.50	7.28	6.90	6.30		13.7	15.0	13.17	12.72	12.00	8.73	8.28	10.56

TH: total heat

Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)						Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)					
			16	18	20	21	22	24				16	18	20	21	22	24
			TH	TH	TH	TH	TH	TH				TH	TH	TH	TH	TH	TH
	WB	DB	kW	kW	kW	kW	kW	kW		WB	DB	kW	kW	kW	kW	kW	kW
14 (48K)	-15.0	-14.7	14.15	14.15	14.15	14.15	14.15	14.15	17.5 (60K)	-15.0	-14.7	17.78	17.78	17.78	17.78	17.78	17.78
	-13.0	-12.6	14.35	14.35	14.35	14.35	14.35	14.35		-13.0	-12.6	18.02	17.02	18.02	18.02	18.02	18.02
	-11.0	-10.5	14.50	14.50	14.50	14.50	14.50	14.50		-11.0	-10.5	18.20	17.20	18.20	18.20	18.20	18.20
	-10.0	-9.5	14.65	14.65	14.65	14.65	14.65	14.65		-10.0	-9.5	18.38	18.38	18.38	18.38	18.38	18.38
	-9.1	-8.5	14.75	14.75	14.75	14.75	14.75	14.75		-9.1	-8.5	18.50	18.50	18.50	18.50	18.50	18.50
	-7.6	-7.0	14.80	14.80	14.80	14.80	14.80	14.80		-7.6	-7.0	18.56	18.56	18.56	18.56	18.56	18.56
	-5.6	-5.0	14.95	14.95	14.95	14.95	14.95	14.95		-5.6	-5.0	18.74	18.74	18.74	18.74	18.74	18.74
	-3.7	-3.0	15.15	15.15	15.15	14.15	15.15	15.15		-3.7	-3.0	18.98	18.98	18.98	18.98	18.98	18.98
	-0.7	0.0	15.45	15.45	15.45	14.45	15.45	15.20		-0.7	0.0	19.34	19.34	19.34	19.34	19.34	19.04
	2.2	3.0	15.70	15.70	15.70	15.70	15.60	15.20		2.2	3.0	19.64	19.64	19.64	19.64	19.52	19.04
	4.1	5.0	16.85	15.85	15.85	15.85	15.60	15.20		4.1	5.0	19.82	19.82	19.82	19.82	19.52	19.04
	6.0	7.0	16.00	16.00	16.00	15.85	15.60	15.20		6.0	7.0	20.00	20.00	20.00	19.82	19.52	19.04
	7.9	9.0	16.15	16.15	16.00	15.85	15.60	15.20		7.9	9.0	20.18	20.18	20.00	19.82	19.52	19.04
	9.8	11.0	16.30	16.30	16.00	15.85	15.60	15.20		9.8	11.0	20.36	20.36	20.00	19.82	19.52	19.04
	11.8	13.0	16.50	16.40	16.00	15.85	15.60	15.20		11.8	13.0	20.60	20.48	20.00	19.82	19.52	19.04
	13.7	15.0	16.65	16.40	16.00	15.85	15.60	15.20		13.7	15.0	20.78	20.48	20.00	19.82	19.52	19.04

TH: total heat

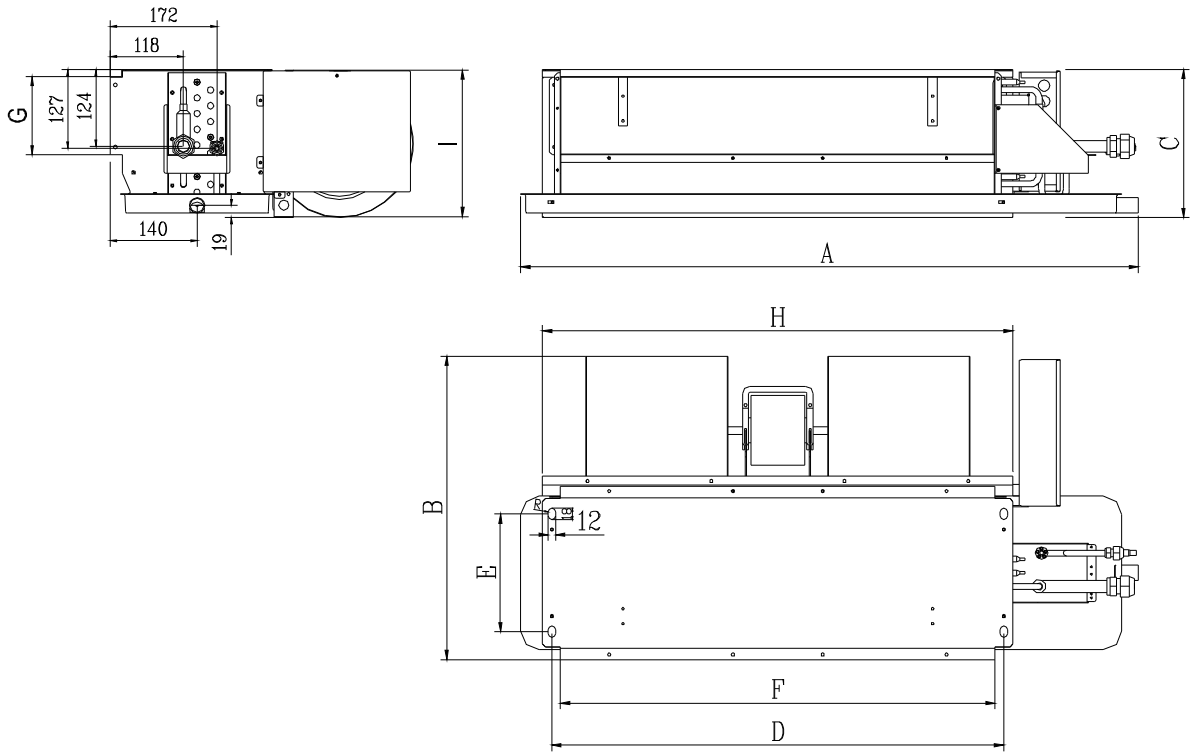
2.3 Low E.S.P Duct Type

2.3.1 Specifications

Model name		Set	ID-12HR/U	ID-18HR/U	ID-24HR/U	ID-36HRS/U	ID-48HRS/U
Power supply		V/Ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	380V/3/50	380V/3/50
Cooling	Capacity	Btu/h	12000	18000	24000	36000	48000
	Capacity	W	3500	5300	7100	10500	14000
	Input	W	1210	1840	2500	3760	5030
	Rated current	A	5.2	8.2	10.9	6.7	8.9
	EER	W/W	2.89	2.88	2.84	2.79	2.78
Heating	Capacity	Btu/h	13200	19800	26400	39600	52800
	Capacity	W	3860	5800	7700	11600	15400
	Input	W	1185	1870	2365	3750	5160
	Rated current	A	5.1	8.1	10.4	6.7	9.1
	COP	W/W	3.26	3.10	3.26	3.09	2.98
Moisture Removal		l/h	2.16	2.59	3.04	3.86	4.1
Max. input consumption		W	1570	2550	3240	5050	6800
Max. current		A	7.5	12.2	15.5	9	12.1
Starting current		A	30	47	60	35	45
Operation Control			Remote/Wire Control	Remote/Wire Control	Remote/Wire Control	Remote/Wire Control	Remote/Wire Control
Indoor coil	Number of row		3	3	3	3	3
	Fin spacing	mm	1.5	1.5	1.5	1.8	1.8
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	mm	φ7	φ7	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil size (L/H/W)	mm	610×205×39	805×205×39	925×205×44	1500×205×66	1500×205×66
	Number of circuit		3	3	3	4	4
Indoor fan motor	Brand		MANQIWEI	MANQIWEI	MANQIWEI	MANQIWEI	MANQIWEI
	Model		YDK110-26-4P1	YSK110-35-4P1	YSK110-55-4P1	YSK110-35-4P1	YSK110-35-4P1
	Input	W	65/56/46	90/80/70	110/100/90	90/80/70	90/80/70
	Output	W	26/23/19	45/40/35	55/50/45	45/40/35	45/40/35
	Running current	A	0.30/0.25/0.21	0.41/0.36/0.32	0.5/0.45/0.41	0.41/0.36/0.32	0.41/0.36/0.32
	Capacitor	mF	2.0μF/ 450V	3.0μF/ 450V	3.5μF/ 450V	3.0μF/ 450V	3.0μF/ 450V
	Speed (Hi/Me/Lo)	rpm	550×400×250	900×750×600	1000×850×700	900×750×600	900×750×600
Rated ESP		Pa	30	30	30	30	30
Indoor air flow	Free blow (Hi/Me/Lo)	m^3/h	750/550/360	1100/900/700	1680/1380/1180	2280/1970/1650	2280/1970/1650
	Rated ESP (Hi/Me/Lo)	m^3/h	660/460/260	960/750/550	1550/1250/1050	2160/1850/1530	2160/1850/1530
Indoor noise level (Hi/Me/Lo)		dB(A)	40/38/36	42/40/38	45/43/41	50/48/46	50/48/46
Indoor dimension	Unit (WxHxD)	mm	815×240×490	1000×240×490	1130×240×490	1715×240×490	1715×240×490
	Packing (WxHxD)	mm	845×275×515	1030×275×515	1160×275×515	1745×275×515	1745×275×515
Indoor weight	Net	kg	37	17.5	18.5	31	31
	Gross	kg	41	19.5	21.5	36	36
Outdoor coil	Number of row		1	2	2	2	2

	Fin spacing	**mm**	1.4	1.5	1.5	1.5	1.5
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	**mm**	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil size (L/H/W)	**mm**	654×523×22	754×650×44	790x655x44	830x760x44	920x900x44
	Number of circuit		3	3	4	6	8
Compressor	**Brand**		GALANZ	HITACHI	PANASONIC	SANYO	SANYO
	Model		QXR-AB132Z235CBA	ASH218SV-C8LU	5VS270EAA21	C－SBN303H8D	C－SBN373H8D
	Type		Rotary	Rotary	Rotary	Scroll	Scroll
	Capacity	**Btu/h**	11000	17640	22810	33400	48100
	Input	**W**	1100	1780	2260	3650	4750
	Rated current (RLA)	**A**	5.05	8.21	10.4	6.58	8.22
	Locked rotor Amp	**A**	24	41	50	30	40
	Thermal protector		INNER	INNER	INNER	INNER	INNER
	Capacitor	**mF**	30μF/370V	50μF/370V	40μF/450V	/	/
	Refrigerant oil	**ml**	FV50S/350ml	HAF68D1/520ml	FV50S/750ml	FV68S/1700ml	FV68S/1700ml
Outdoor fan motor	**Brand**		GALANZ	GALANZ	GALANZ	GALANZ	GALANZ
	Model		GAL030H60920-K01	GAL6P55A-KWD	GAL075H61225-K01	GAL090H61230-K01	GAL180H61445-K01
	Input	**W**	50	90	125	150	300
	Output	**W**	25	45	65	75	150
	Running current	**A**	0.23	0.4	0.55	0.66	1.33
	Capacitor	**mF**	2μF/450V	3μF/450V	4μF/450V	5μF/450V	10μF/450V
	Speed	**rpm**	780	900	830	850	740
Outdoor air flow		**m^3/h**	1500	1800	2800	4000	5000
Outdoor noise level		**dB(A)**	53	56	58	59	62
Outdoor dimension	**Unit (WxHxD)**	**mm**	700x540x255	800×670×300	845x680x310	880x790x360	970×928×345
	Packing (WxHxD)	**mm**	800x620x375	1010×775×430	1010×755×430	1030x890x480	1095×1070×470
Outdoor weight	**Net**	**kg**	30	50	64	80	85
	Gross	**kg**	33.5	55	69	90	97
Refrigerant	**Type**		R410A	R410A	R410A	R410A	R410A
	Charge	**g**	1100	1800	2200	2800	3300
Refrigerant pipe	**Liquid side**	**mm**	Φ6.35	Φ6.35	Φ9.52	Φ9.52	Φ9.52
	Gas side	**mm**	Φ12.7	Φ12.7	Φ15.88	Φ19.05	Φ19.05
	Max. pipe length	**m**	25	25	30	30	50
	Max. level difference	**m**	10	10	15	15	30
Operation temperature range		**℃**	16～31	16～31	16～31	16～31	16～31
Ambient temperature range		**℃**	-7～43	-7～43	-7～43	-7～43	-7～43
Application area		**m^2**	14-21	20～36	27～45	40～71	55～98
Qty'per 20'& 40'&40HQ		**Set**	90/198/220	55/123/137	58/124/140	37/78/88	30/66/72

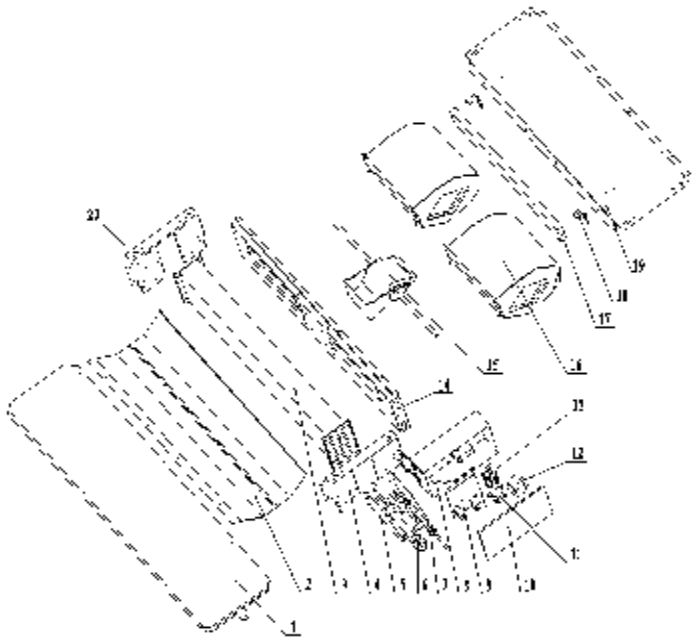
2.3.2 Structure Diagram



Unit: mm

Dimension code / Specification	Overall dimension			Installation dimension		Size of air outtake		Size of return air intake		fan motor	fan
	A	B	C	D	E	F	G	H	I	QTY.	QTY.
12K	815	490	240	515	190	487	127	485	238	1	1
18K	100	490	240	730	190	702	127	760	238	2	1
24K	113	490	240	830	190	802	127	800	238	2	1
36K 48K	171	490	240	141	190	1387	127	1445	238	4	2

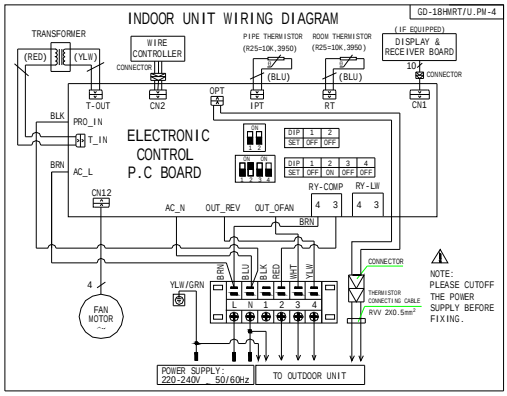
2.3.3 Explosion Diagram



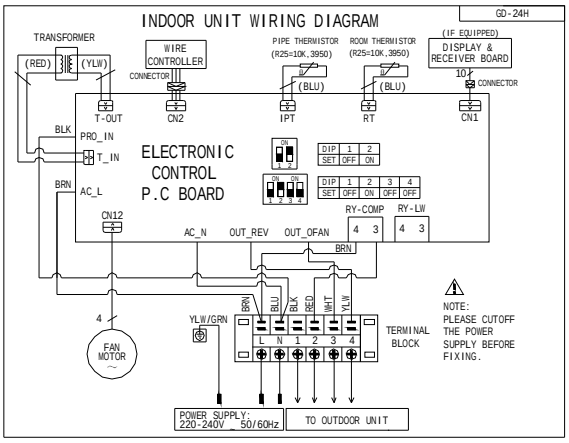
No.	Name	Qty.	Remark
1	DRAIN PAN	1	
2	BOTTOM PLATE	1	
3	COIL ASSEMBLY	1	
4	RIGHT COIL SUPPORTING PLATE	1	
5	PIPE SUPPORTING PLATE	1	
6	COIL HEADER TUBE ASSEMBLY	1	
7	COIL DISTRIBUTOR TUBE ASSEMBLY	1	
8	CONTROL BOX	1	
9	CONTROL PCB BOARD	1	
10	CONTROL BOX COVER	1	
11	RELAY	1	
12	TRANSFORMER	1	
13	TERMINAL	2	
14	SEPARATING PLATE ASSEMBLY	1	
15	MOTOR ASSEMBLY	4	12K、18K、24K：1 36K、42K：1
16	FAN		12K：1 18K、24K：2 36K、42K：4
17	ELETRIC HEATING ASSEMBLY	1	
18	ELECTRIC HEATER MOUNTING PLATE	1	
19	TOP COVER PLATE	1	
20	LEFT COIL SUPPORTING PLATE	1	

2.3.4 Wiring Diagram

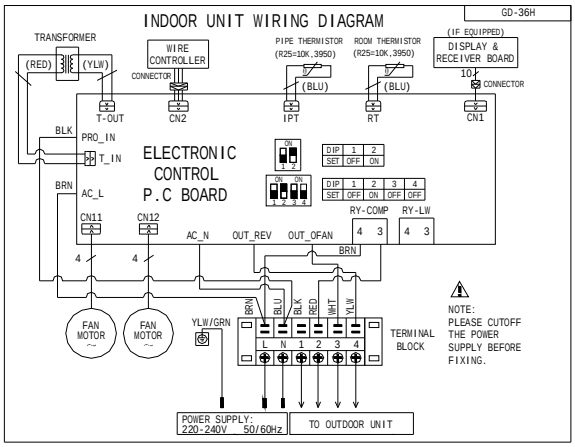
09K /12K /18K Heat Pump, Low ESP



24K Heat Pump, Low ESP



36K 42K Heat Pump, Low ESP



2.3.5 Performance Varable Table

Cooling capacity variation table

Cooling capacity (kW)	Outdoor temperature (℃, WB)	Indoor temperature (℃, WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
3.6 (12K)	10.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.7	2.7
	12.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.7	2.7
	14.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.6	2.6
	16.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.5	2.6
	18.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.5	2.6
	20.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.4	2.5
	21.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.3	2.6	4.4	2.5
	23.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.1	2.5	4.3	2.4
	25.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.1	2.5	4.2	2.4
	27.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.0	2.4	4.2	2.4
	29.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.0	2.4	4.1	2.4
	31.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.2	2.8	4.1	2.4
	33.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.2	2.8	3.9	2.3
	35.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.8	2.7	4.2	2.8	3.9	2.3
	37.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.9	2.3
	39.0	2.5	2.1	2.9	2.3	3.4	2.5	3.6	2.6	3.7	2.6	3.8	2.5	3.8	2.3
5.3 (18K)	10.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.3	3.7
	12.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.2	3.6
	14.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.1	3.6
	16.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	7.0	3.5
	18.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.8	3.5
	20.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.7	3.4
	21.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.6	3.4
	23.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.6	3.3
	25.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.6	3.9	6.5	3.3
	27.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.4	3.8	6.4	3.3
	29.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.3	3.8	6.4	3.4
	31.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.2	3.7	6.2	3.2
	33.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.2	3.7	6.2	3.2
	35.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	6.0	3.6	6.0	3.2
	37.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.9	3.8	5.9	3.5	6.0	3.2
	39.0	3.7	3.0	4.6	3.3	5.3	3.6	5.3	3.7	5.7	3.7	5.8	3.5	6.0	3.2

TH: Total heat SH: Sensible heat

Cooling capacity (kW)	Outdoor temperature (℃, WB)	Indoor temperature (℃, WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
7.1 (24K)	10.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.7	6.1
	12.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.6	6.1
	14.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.5	6.1
	16.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.4	6.1
	18.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.3	6.1
	20.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.2	6.1
	21.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.3	6.6	8.1	6.1
	23.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.1	6.5	7.9	5.9
	25.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	8.1	6.5	7.8	5.9
	27.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	7.9	6.4	7.8	5.9
	29.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	7.9	6.4	7.5	5.9
	31.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	7.7	6.2	7.5	5.9
	33.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	7.7	6.2	7.3	5.8
	35.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.3	6.2	7.7	6.2	7.3	5.8
	37.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.2	6.1	7.3	5.9	7.3	5.8
	39.0	5.9	5.6	6.4	5.8	6.9	5.9	7.1	6.1	7.2	6.1	7.3	5.9	7.2	5.8
10.5 (36K)	10.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.3	8.9
	12.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.2	8.8
	14.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.1	8.8
	16.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.0	8.7
	18.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.8	8.7
	20.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.7	8.6
	21.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.6	8.6
	23.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.6	8.5
	25.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.6	8.9	11.5	8.5
	27.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.4	8.8	11.4	8.5
	29.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.3	8.8	11.4	8.6
	31.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.2	8.7	11.2	8.4
	33.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.2	8.7	11.2	8.4
	35.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	11.0	8.6	11.0	8.4
	37.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.9	8.8	10.9	8.5	11.0	8.4
	39.0	8.9	8.0	9.6	8.3	10.3	8.6	10.5	8.7	10.7	8.7	10.8	8.5	11.0	8.4

TH: Total heat SH: Sensible heat

Cooling capacity (kW)	Outdoor temperature (℃, WB)	Indoor temperature (℃, WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
12.5 (42K)	10.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.3	10.9
	12.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.2	10.8
	14.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.1	10.8
	16.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.0	10.7
	18.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.8	10.7
	20.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.7	10.6
	21.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.6	10.6
	23.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.6	10.5
	25.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.6	10.9	13.5	10.5
	27.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.4	10.8	13.4	10.5
	29.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.3	10.8	13.4	10.6
	31.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.2	10.7	13.2	10.4
	33.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.2	10.7	13.2	10.4
	35.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	13.0	10.6	13.0	10.4
	37.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.9	10.8	12.9	10.5	13.0	10.4
	39.0	10.9	10.0	11.6	10.3	12.3	10.6	12.5	10.7	12.7	10.7	12.8	10.5	13.0	10.4

TH: Total heat SH: Sensible heat

Heating capacity variation table

Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)						Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)					
			16	18	20	21	22	24				16	18	20	21	22	24
			TH	TH	TH	TH	TH	TH				TH	TH	TH	TH	TH	TH
	WB	DB	kW	kW	kW	kW	kW	kW		WB	DB	kW	kW	kW	kW	kW	kW
3.5 (12K)	-15.0	-14.7	2.52	2.52	2.52	2.52	2.52	2.52	5.3 (18K)	-15.0	-14.7	3.97	3.97	3.97	3.97	3.97	3.97
	-13.0	-12.6	2.68	2.68	2.68	2.68	2.68	2.68		-13.0	-12.6	4.22	4.22	4.22	4.22	4.22	4.22
	-11.0	-10.5	2.80	2.80	2.80	2.80	2.80	2.80		-11.0	-10.5	4.41	4.41	4.41	4.41	4.41	4.41
	-10.0	-9.5	2.92	2.92	2.92	2.92	2.92	2.92		-10.0	-9.5	4.60	4.60	4.60	4.60	4.60	4.60
	-9.1	-8.5	3.00	3.00	3.00	3.00	3.00	3.00		-9.1	-8.5	4.73	4.73	4.73	4.73	4.73	4.73
	-7.6	-7.0	3.04	3.04	3.04	3.04	3.04	3.04		-7.6	-7.0	4.79	4.79	4.79	4.79	4.79	4.79
	-5.6	-5.0	3.16	3.16	3.16	3.16	3.16	3.16		-5.6	-5.0	4.98	4.98	4.98	4.98	4.98	4.98
	-3.7	-3.0	3.32	3.32	3.32	3.32	3.32	3.32		-3.7	-3.0	5.23	5.23	5.23	5.23	5.23	5.23
	-0.7	0.0	3.56	3.56	3.56	3.56	3.56	3.36		-0.7	0.0	5.61	5.61	5.61	5.61	5.61	5.29
	2.2	3.0	3.76	3.76	3.76	3.76	3.68	3.36		2.2	3.0	5.92	5.92	5.92	5.92	5.80	5.29
	4.1	5.0	3.88	3.88	3.88	3.88	3.68	3.36		4.1	5.0	6.11	6.11	6.11	6.11	5.80	5.29
	6.0	7.0	4.00	4.00	4.00	3.88	3.68	3.36		6.0	7.0	6.30	6.30	6.30	6.11	5.80	5.29
	7.9	9.0	4.12	4.12	4.00	3.88	3.68	3.36		7.9	9.0	6.49	6.49	6.30	6.11	5.80	5.29
	9.8	11.0	4.24	4.24	4.00	3.88	3.68	3.36		9.8	11.0	6.68	6.68	6.30	6.11	5.80	5.29
	11.8	13.0	4.40	4.32	4.00	3.88	3.68	3.36		11.8	13.0	6.93	6.80	6.30	6.11	5.80	5.29
	13.7	15.0	4.52	4.32	4.00	3.88	3.68	3.36		13.7	15.0	7.12	6.80	6.30	6.11	5.80	5.29
7.1 (24K)	-15.0	-14.7	6.15	6.15	6.15	6.15	6.15	6.15	10.5 (36K)	-15.0	-14.7	6.97	7.97	8.97	7.97	7.97	6.97
	-13.0	-12.6	6.35	6.35	6.35	6.35	6.35	6.35		-13.0	-12.6	7.22	8.22	9.22	8.22	8.22	7.22
	-11.0	-10.5	6.50	6.50	6.50	6.50	6.50	6.50		-11.0	-10.5	7.41	8.41	9.41	8.41	8.41	7.41
	-10.0	-9.5	6.65	6.65	6.65	6.65	6.65	6.65		-10.0	-9.5	7.60	8.60	9.60	8.60	8.60	7.60
	-9.1	-8.5	6.75	6.75	6.75	6.75	6.75	6.75		-9.1	-8.5	7.73	8.73	9.73	8.73	8.73	7.73
	-7.6	-7.0	6.80	6.80	6.80	6.80	6.80	6.80		-7.6	-7.0	7.79	8.79	9.79	8.79	8.79	7.79
	-5.6	-5.0	6.95	6.95	6.95	6.95	6.95	6.95		-5.6	-5.0	7.98	8.98	9.98	8.98	8.98	7.98
	-3.7	-3.0	7.15	7.15	7.15	7.15	7.15	7.15		-3.7	-3.0	8.23	9.23	10.23	9.23	9.23	8.23
	-0.7	0.0	7.45	7.45	7.45	7.45	7.45	7.20		-0.7	0.0	8.61	9.61	10.61	9.61	9.61	8.29
	2.2	3.0	7.70	7.70	7.70	7.70	7.60	7.20		2.2	3.0	8.92	9.92	10.92	9.92	9.80	8.29
	4.1	5.0	7.85	7.85	7.85	7.85	7.60	7.20		4.1	5.0	9.11	10.11	11.11	10.11	9.80	8.29
	6.0	7.0	8.00	8.00	8.00	7.85	7.60	7.20		6.0	7.0	9.30	10.30	12.00	10.11	9.80	8.29
	7.9	9.0	8.15	8.15	8.00	7.85	7.60	7.20		7.9	9.0	9.49	10.49	12.00	10.11	9.80	8.29
	9.8	11.0	8.30	8.30	8.00	7.85	7.60	7.20		9.8	11.0	9.68	10.68	12.00	10.11	9.80	8.29
	11.8	13.0	8.50	8.40	8.00	7.85	7.60	7.20		11.8	13.0	9.93	10.80	12.00	10.11	9.80	8.29
	13.7	15.0	8.65	8.40	8.00	7.85	7.60	7.20		13.7	15.0	10.12	10.80	12.00	10.11	9.80	8.29

TH: Total heat

Heating capacity (kW)	Outdoor temperature (℃)		Indoor temperature (℃,DB)					
			16	18	20	21	22	24
			TH	TH	TH	TH	TH	TH
	WB	DB	kW	kW	kW	kW	kW	kW
12.5(42K)	-15.0	-14.7	8.97	9.97	10.97	9.97	9.97	8.97
	-13.0	-12.6	9.22	10.22	11.22	10.22	10.22	9.22
	-11.0	-10.5	9.41	10.41	11.41	10.41	10.41	9.41
	-10.0	-9.5	9.60	10.60	11.60	10.60	10.60	9.60
	-9.1	-8.5	9.73	10.73	11.73	10.73	10.73	9.73
	-7.6	-7.0	9.79	10.79	11.79	10.79	10.79	9.79
	-5.6	-5.0	9.98	10.98	11.98	10.98	10.98	9.98
	-3.7	-3.0	10.23	11.23	12.23	11.23	11.23	10.23
	-0.7	0.0	10.61	11.61	12.61	11.61	11.61	10.29
	2.2	3.0	10.92	11.92	12.92	11.92	11.80	10.29
	4.1	5.0	11.11	12.11	13.11	12.11	11.80	10.29
	6.0	7.0	11.30	12.30	14.00	12.11	11.80	10.29
	7.9	9.0	11.49	12.49	14.00	12.11	11.80	10.29
	9.8	11.0	11.68	12.68	14.00	12.11	11.80	10.29
	11.8	13.0	11.93	12.80	14.00	12.11	11.80	10.29
	13.7	15.0	12.12	12.80	14.00	12.11	11.80	10.29

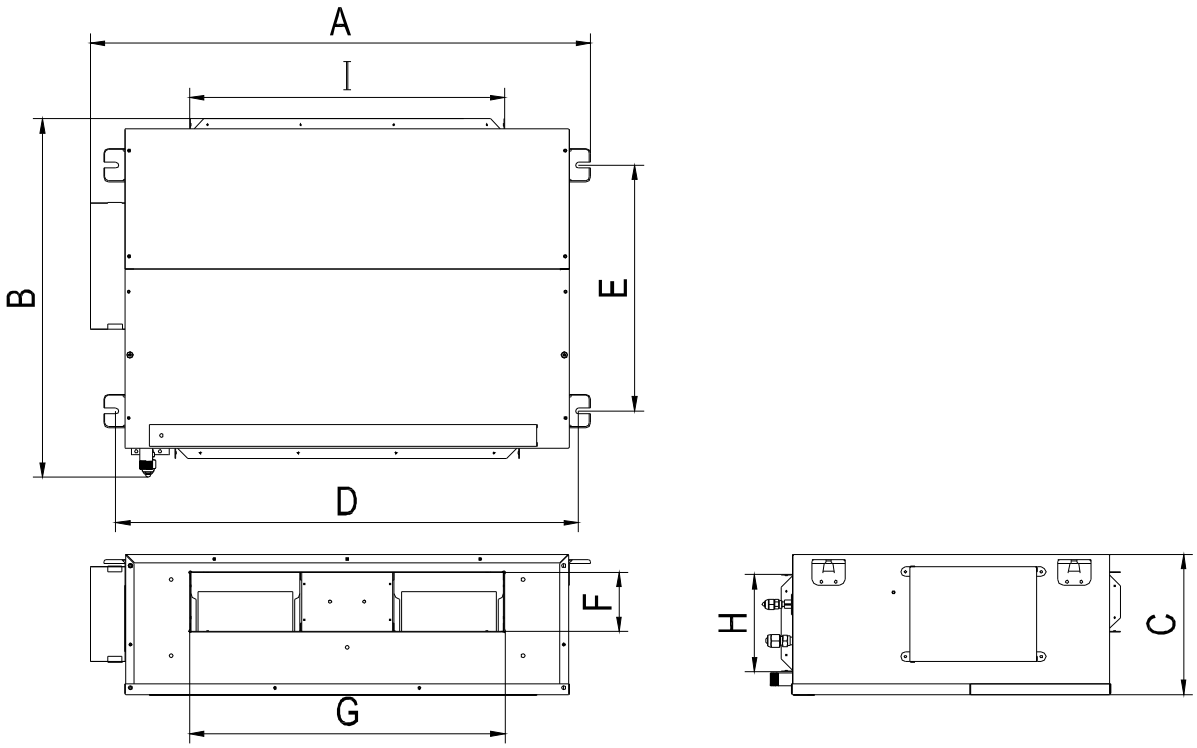
2.4 Medium E.S.P Duct Type

2.4.1 Specifications

Model name		Set	ID-18HMR/U	ID-24HMR/U	ID-36HMRS/U	ID-48HMRS/U	ID-60HMRS/U
Power supply		V/Ph/Hz	220-240/1/50	220-240/1/50	380V/3/50	380V/3/50	380V/3/50
Cooling	Capacity	Btu/h	18000	24000	36000	48000	60000
	Capacity	W	5300	7100	10500	14000	16000
	Input	W	1840	2480	3720	5040	5800
	Rated current	A	8.1	10.9	6.7	8.9	10.2
	EER	W/W	2.88	2.86	2.82	2.78	2.76
Heating	Capacity	Btu/h	19800	26400	39600	52800	66000
	Capacity	W	5800	7730	11600	15470	18000
	Input	W	1875	2440	4060	5510	6400
	Rated current	A	8.2	10.7	6.8	9.0	10.5
	COP	W/W	3.09	3.17	2.86	2.81	2.81
Moisture Removal		l/h	2.61	3.25	3.83	4.46	5.2
Max. input consumption		W	2570	3270	5410	7390	8680
Max. current		A	12.3	15.6	9.7	13.2	15.5
Starting current		A	47	60	37	50	60
Operation Control			Wire Control	Wire Control	Wire Control	Wire Control	Wire Control
Indoor coil	Number of row		2	3	3	3	3
	Fin spacing	mm	1.4	1.4	1.8	1.8	1.8
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	mm	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil size (L/H/W)	mm	650×210×44	810×355×66	810×355×66	1180×355×66	1180×270×66
	Number of circuit		3	3	4	4	4
Indoor fan motor	Brand		HELONG	HELONG	JIANGNAN KAIHUA	JIANGNAN KAIHUA	JIANGNAN KAIHUA
	Model		YSK110-80-4P	YSK120-100-4P	YSK120-180-4P	YSK139-250-4P	YSK139-300-4P
	Input	W	120/100/80	150/135/105	300/280/265	400/360/330	460/420/380
	Output	W	80/60/45	100/80/60	120/100/80	250/200/160	300/2500/200
	Running current	A	0.55/0.45/0.36	0.68/0.6/0.45	1.36/1.27/1.2	1.8/1.63/1.5	2.09/1.9/1.7
	Capacitor	mF	3.0μF/ 450V	4μF/ 450V	8μF/ 450V	8μF/ 450V	10μF/ 450V
	Speed (Hi/Me/Lo)	rpm	1020×920×820	1200×1090×980	1370×1270×1170	1200/1090/980	1270/1160/1050
Rated ESP		Pa	50	70	70	130	130
Indoor air flow	Free blow (Hi/Me/Lo)	m^3/h	1150/930/750	1510/1310/1110	1950/1650/1400	2800/2500/2200	3000/2800/2500
	Rated ESP (Hi/Me/Lo)	m^3/h	850/700/600	1260/1100/950	1550/1450/1320	2300/2000/1700	2500/2300/2000
Indoor noise level (Hi/Me/Lo)		dB(A)	42/40/38	42/40/38	45/43/41	52/50/48	55/53/51
Indoor dimension	Unit (WxHxD)	mm	850×250×745	1055×295×755	1055×295×755	1385×312×830	1385×312×830
	Packing (WxHxD)	mm	885×290×785	1080×320×785	1080×320×785	1410x350x875	1410x350x875
Indoor weight	Net	kg	30	42	44	60	60
	Gross	kg	35	48	50	68	68
Outdoor coil	Number of row		2	2	2	2	2

	Fin spacing	**mm**	1.5	1.5	1.5	1.5	1.8
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	**mm**	φ9.52	φ9.52	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil size (L/H/W)	**mm**	754×650×44	790x655x44	830x760x44	920x900x44	920x1220x44
	Number of circuit		3	4	6	8	8
Compressor	**Brand**		HITACHI	PANASONIC	SANYO	SANYO	SANYO
	Model		ASH218SV-C8LU	5VS270EAA21	C－SBN303H8D	C－SBN373H8D	C－SBN453H8D
	Type		Rotary	Rotary	Scroll	Scroll	Scroll
	Capacity	**Btu/h**	17640	22810	33400	48100	56900
	Input	**W**	1780	2260	3650	4750	5750
	Rated current(RLA)	**A**	8.21	10.4	6.58	8.22	9.77
	Locked rotor Amp	**A**	41	50	30	40	45
	Thermal protector		INNER	INNER	INNER	INNER	INNER
	Capacitor	**mF**	50μF/370V	40μF/450V	/	/	/
	Refrigerant oil	**ml**	HAF68D1/520ml	FV50S/750ml	FV68S/1700ml	FV68S/1700ml	FV68S/1700ml
Outdoor fan motor	**Brand**		GALANZ	GALANZ	GALANZ	GALANZ	GALANZ
	Model		GAL6P55A-KWD	GAL075H61225-K01	GAL090H61230-K01	GAL180H61445-K01	GAL6P60A2-KWD
	Input	**W**	90	125	150	300	105×2
	Output	**W**	45	65	75	150	60×2
	Running current	**A**	0.4	0.55	0.66	1.33	0.45×2
	Capacitor	**mF**	3μF/450V	4μF/450V	5μF/450V	10μF/450V	3μF/450V
	Speed	**rpm**	900	830	850	740	830
Outdoor air flow		**m^3/h**	1800	2800	4000	5000	5800
Outdoor noise level		**dB(A)**	55	58	62	62	63
Outdoor dimension	**Unit (WxHxD)**	**mm**	800×670×300	845x680x310	880x790x360	970×928×345	973x1239x350
	Packing (WxHxD)	**mm**	1010×775×430	1010×755×430	1030x890x480	1095×1070×470	1065x1390x435
Outdoor weight	**Net**	**kg**	50	64	80	85	110
	Gross	**kg**	55	69	90	97	122
Refrigerant	**Type**		R410A	R410A	R410A	R410A	R410A
	Charge	**g**	1800	2200	2800	3300	3800
Refrigerant pipe	**Liquid side**	**mm**	Φ6.35	Φ9.52	Φ9.52	Φ9.52	Φ9.52
	Gas side	**mm**	Φ12.7	Φ15.88	Φ19.05	Φ19.05	Φ19.05
	Max. pipe length	**m**	25	30	30	50	50
	Max. level difference	**m**	10	15	15	30	30
Operation temperature range		**℃**	16～31	16～31	16～31	16～31	16～31
Ambient temperature range		**℃**	-7～43	-7～43	-7～43	-7～43	-7～43
Application area		**m^2**	20～36	27～45	40～71	55～98	68～110
Qty'per 20'& 40'&40HQ		**Set**	69/148/171	45/96/101	34/69/96	27/54/64	27/54/64

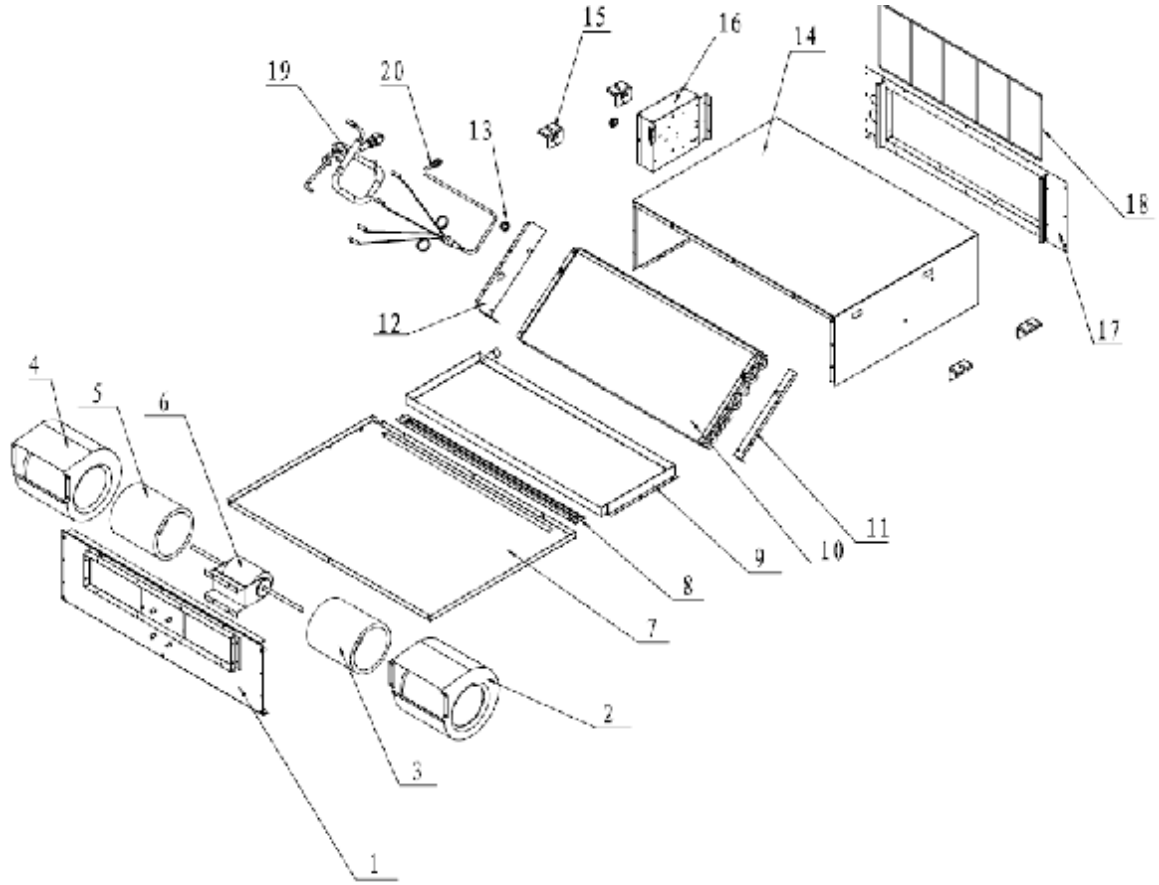
2.4.2 Structure Diagram



Unit: mm

Dimension Code / Specification	Overall dimension			Installation dimension		Size of air outtake		Size of return air intake	
	A	B	C	D	E	F	G	H	I
18K	850	745	250	773	515	112	544	168	539
24K 36K	1055	755	295	974	517	126	662	204	724
42K 48K 60K	1385	830	312	1305	595	115	742	230	982

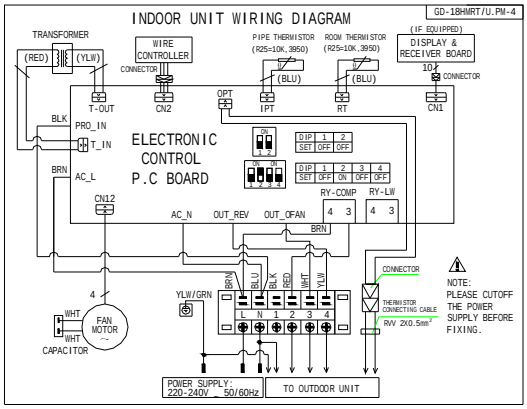
2.4.3 Explosion Diagram



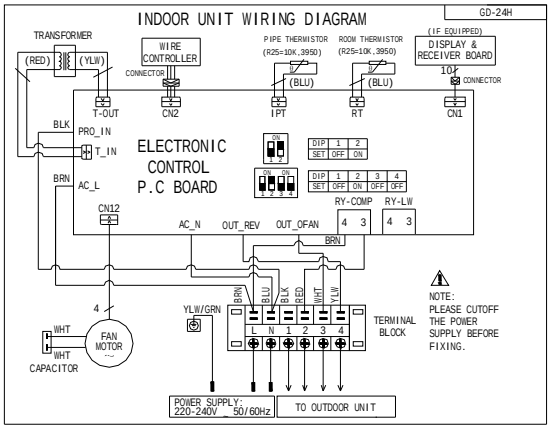
No.	Name	Qty.	Remark
1	FIXING PLATE ASSEMBLY FOR FAN MOTOR	1	
2	RIGHT SCROLL SHELL	1	
3	RIGHT VANE	1	
4	LEFT SCROLL SHELL	1	
5	LEFT VANE	1	
6	FAN MOTOR	1	
7	BOTTOM PLATE ASSEMBLY	1	
8	AIR FILTER COVER PLATE	1	
9	DRAIN PAN	1	
10	EVAPORATOR	1	
11	RIGHT FIXING PLATE	1	
12	LEFT FIXING PLATE	1	
13	CABLE PROTECTOR	2	
14	TOP PLATE ASSEMBLY	1	
15	MOUNTING PLATE	4	
16	ELECTRICAL CONTROL BOX ASSEMBLY	1	
17	RETURN AIR FRAME ASSEMBLY	1	
18	AIR FILTER ASSEMBLY	1	
19	COIL HEADER TUBE ASSEMBLY	1	
20	COIL DISTRIBUTOR TUBE ASSEMBLY	1	

2.4.4 Wiring Diagram

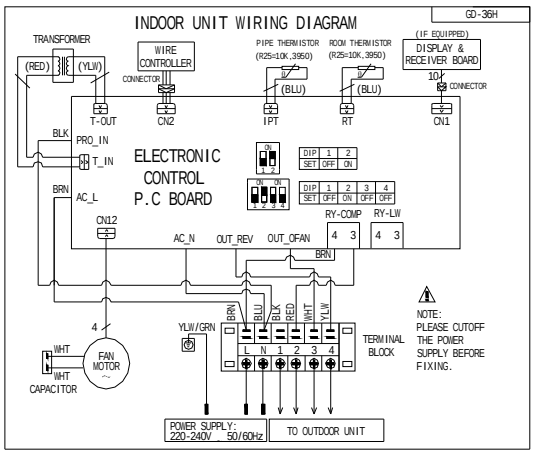
18K Heat Pump, Mediem ESP



24K Heat Pump, Mediem ESP



36K and Above Heat Pump, Mediem & High ESP



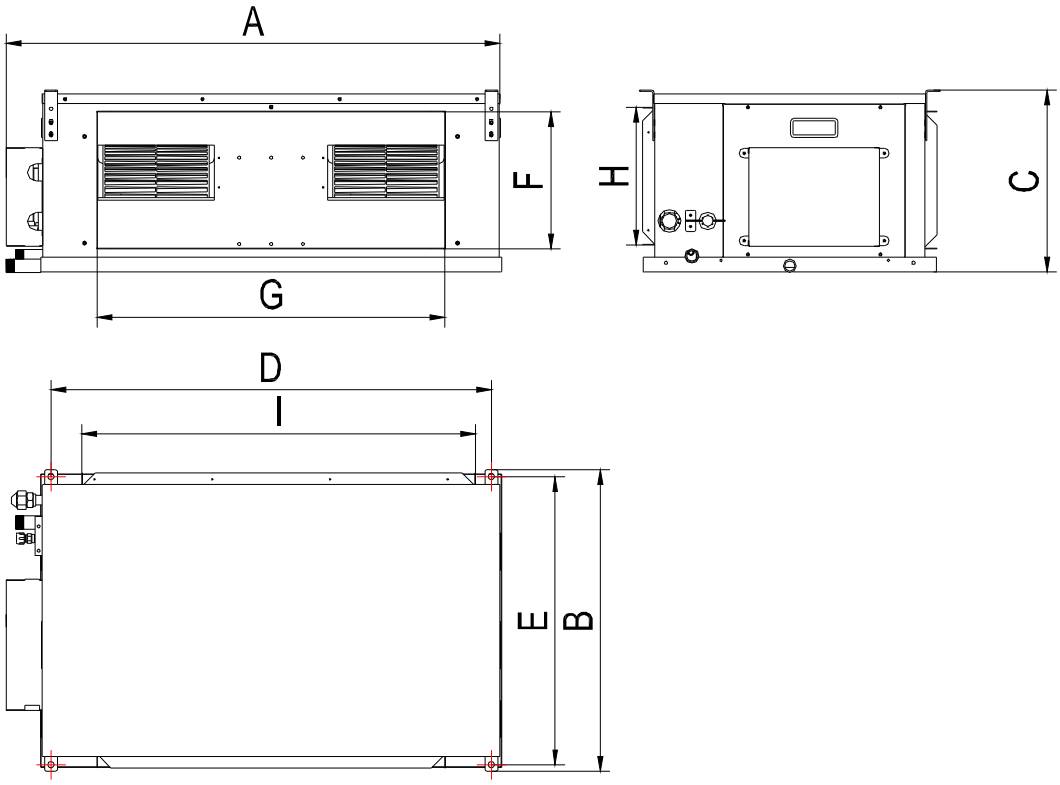
2.5 High E.S.P Duct Type

2.5.1 Specifications

Model name	FACTORY	Set	ID-36HTRS/U	ID-48HTRS/U	ID-60HTRS/U
Power supply		V/Ph/Hz	380V/3/50	380V/3/50	380V/3/50
Cooling	Capacity	Btu/h	36000	48000	60000
	Capacity	W	10500	14000	16000
	Input	W	3755	5120	5912
	Rated current	A	6.7	8.9	10.2
	EER	W/W	2.80	2.73	2.71
Heating	Capacity	Btu/h	39600	52800.00	66000
	Capacity	W	11600	15400	17500
	Input	W	3841	5116	5892
	Rated current	A	6.9	9.1	10.5
	COP	W/W	3.02	3.01	2.97
Moisture Removal		l/h	3.82	4.5	5.2
Max. input consumption		W	5550	7390	8810
Max. current		A	10	13.2	15.7
Starting current		A	38	50	60
Operation Control			Wire Control	Wire Control	Wire Control
Indoor coil	Number of row		3	4	4
	Fin spacing	mm	2	2	2
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	mm	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil length x height x width	mm	800×320×88	925×365×88	925×365×88
	Number of circuit		3	3	3
Indoor fan motor	Brand		JIANGNAN KAIHUA	JIANGNAN KAIHUA	JIANGNAN KAIHUA
	Model		YSK139-300-4PB	YSK139-350-4PB	YSK139-450-4PB
	Input	W	476/432/395	635/596/555	820/770/720
	Output	W	235/215/195	315/295/225	410/385/360
	Running current	A	2.2/2.01/1.86	2.9/2.7/2.5	3.7/3.5/3.3
	Capacitor	mF	8μF/ 450V	12μF/ 450V	12μF/ 450V
	Speed (Hi/Me/Lo)	rpm	1200/1100/1000	1300/1200/1100	1300/1200/1100
Rated ESP		Pa	195	195	195
Indoor air flow	Free blow (Hi/Me/Lo)	m^3/h	2410/2100/1800	3010/2700/2400	3430/3100/2800
	Rated ESP (Hi/Me/Lo)	m^3/h	2160/1850/1550	2760/2450/2150	3180/2850/2550
Indoor noise level (Hi/Me/Lo) @ Rated ESP		dB(A)	50/48/46	55/53/51	60/57/54
Indoor dimension	Unit (WxHxD)	mm	1010×370×615	1130×415×615	1130×415×615
	Packing (WxHxD)	mm	1083×430×679	1185x475x679	1185x475x679
Indoor weight	Net	kg	51	57	61
	Gross	kg	57	64	68
Outdoor coil	Number of row		2	2	2

	Fin spacing	**mm**	1.5	1.5	1.8
	Fin material		Hydrophile Aluminium	Hydrophile Aluminium	Hydrophile Aluminium
	Tube outside diameter	**mm**	φ9.52	φ9.52	φ9.52
	Tube material		Inner-grooved Copper Tube	Inner-grooved Copper Tube	Inner-grooved Copper Tube
	Coil length x height x width	**mm**	830x760x44	920x900x44	920x1220x44
	Number of circuit		6	8	8
Compressor	**Brand**		SANYO	SANYO	SANYO
	Model		C－SBN303H8D	C－SBN373H8D	C－SBN453H8D
	Type		Scroll	Scroll	Scroll
	Capacity	**Btu/h**	33400	48100	56900
	Input	**W**	3650	4750	5750
	Rated current(RLA)	**A**	6.58	8.22	9.77
	Locked rotor Amp(LRA)	**A**	30	40	45
	Thermal protector		INNER	INNER	INNER
	Capacitor	**mF**	/	/	/
	Refrigerant oil	**ml**	FV68S/1700ml	FV68S/1700ml	FV68S/1700ml
Outdoor fan motor	**Brand**		GALANZ	GALANZ	GALANZ
	Model		GAL090H61230-K01	GAL180H61445-K01	GAL6P60A2-KWD
	Input	**W**	150	300	105×2
	Output	**W**	75	150	60×2
	Running current	**A**	0.66	1.33	0.45×2
	Capacitor	**mF**	5μF/450V	10μF/450V	3μF/450V
	Speed	**rpm**	850	740	830
Outdoor air flow		**m^3/h**	4000	5000	5800
Outdoor noise level		**dB(A)**	62	62	63
Outdoor dimension	**Unit (WxHxD)**	**mm**	880x790x360	970×928×345	973x1239x350
	Packing (WxHxD)	**mm**	1030x890x480	1095×1070×470	1065x1390x435
Outdoor weight	**Net**	**kg**	80	85	110
	Gross	**kg**	90	97	122
Refrigerant	**Type**		R410A	R410A	R410A
	Charge	**g**	2800	3300	3800
Refrigerant pipe	**Liquid side**	**mm**	Φ9.52	Φ9.52	Φ9.52
	Gas side	**mm**	Φ19.05	Φ19.05	Φ19.05
	Max. refrigerant pipe length	**m**	30	50	50
	Max. difference in level	**m**	15	30	30
Operation temperature range		**℃**	16～31	16～31	16～31
Ambient temperature range		**℃**	-7～43	-7～43	-7～43
Application area		**m^2**	40～71	55～98	68～110
Qty'per 20'& 40'&40HQ		**Set**	48/109/120	27/68/78	27/64/72

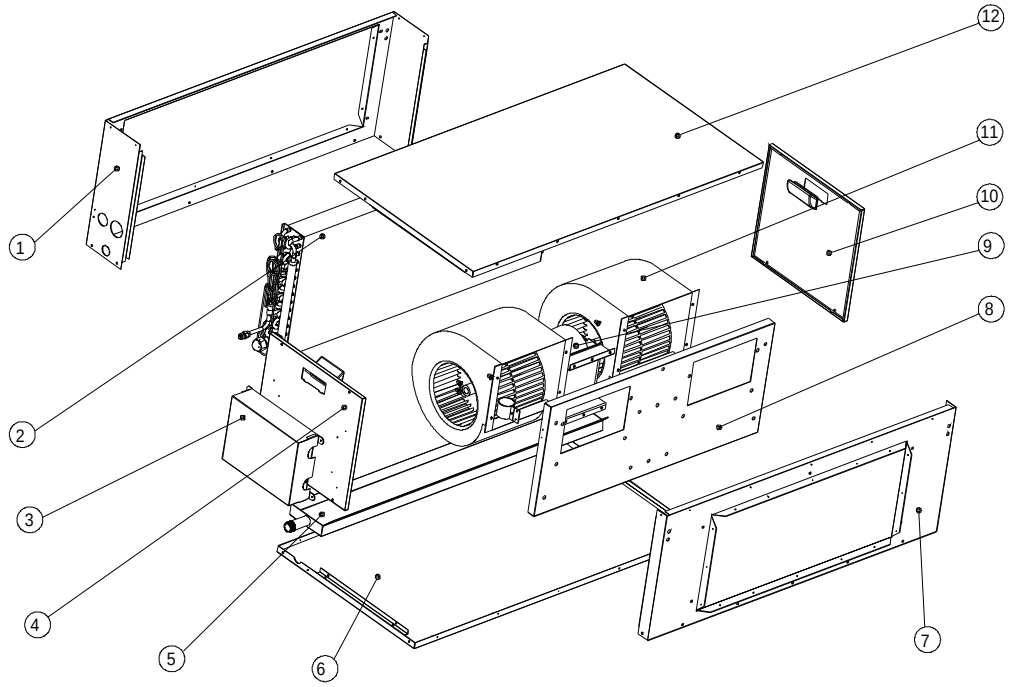
2.5.2 Structure Diagram



Unit: mm

Dimension Code / Specification	Overall dimension			Installation dimension		Size of air outtake		Size of return air intake	
	A	B	C	D	E	F	G	H	I
36K 42K	1010	615	370	898	586	280	710	280	800
48K 60K	1130	615	415	1016	586	305	725	325	925

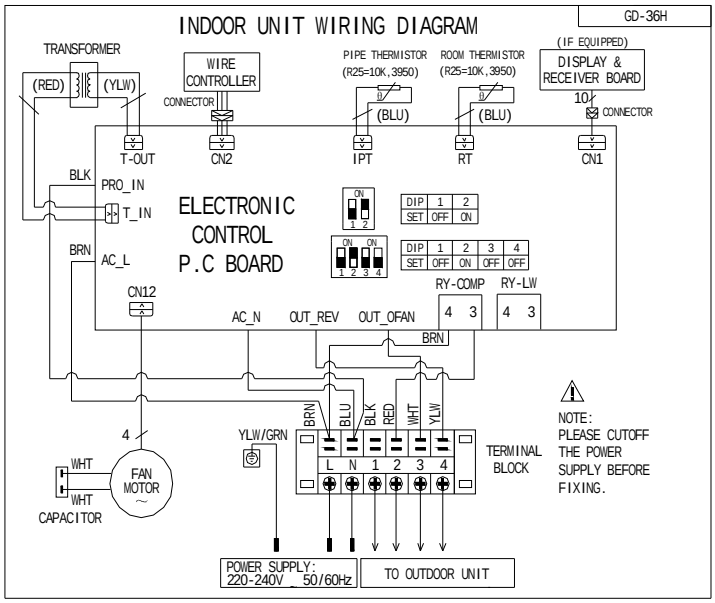
2.5.3 Explosion Diagram



No.	Name	Qty.	Remark
1	RETURN AIR FRAME ASSEMBLY	1	
2	COIL ASSEMBLY	1	
3	ELECTRICAL BOX ASSEMBLY	1	
4	LEFT PLATE ASSEMBLY	1	
5	DRAIN PAN ASSEMBLY	1	
6	BOTTOM PLATE ASSEMBLY	1	
7	AIR OUTLET PLATE ASSEMBLY	1	
8	FAN MOUNTING PLATE ASSEMBLY	1	
9	FAN MOTOR ASSEMBLY	1	
10	RIGHT PLATE ASSEMBLY	1	
11	FAN ASSEMBLY	1	
12	TOP PLATE ASSEMBLY	1	

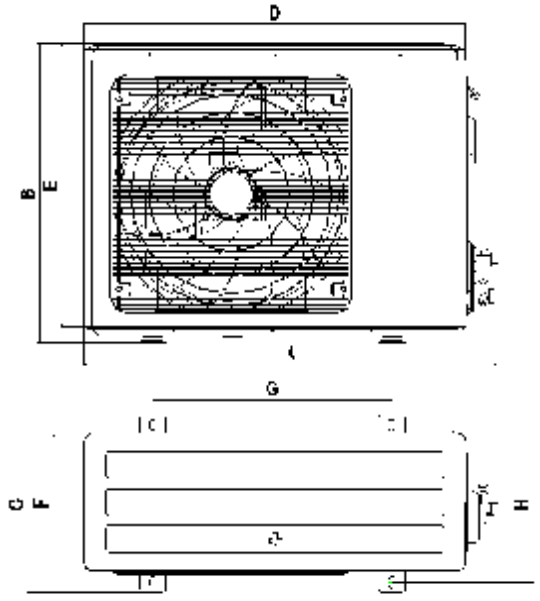
2.5.4 Wiring Diagram

36K and Above Heat Pump, High ESP



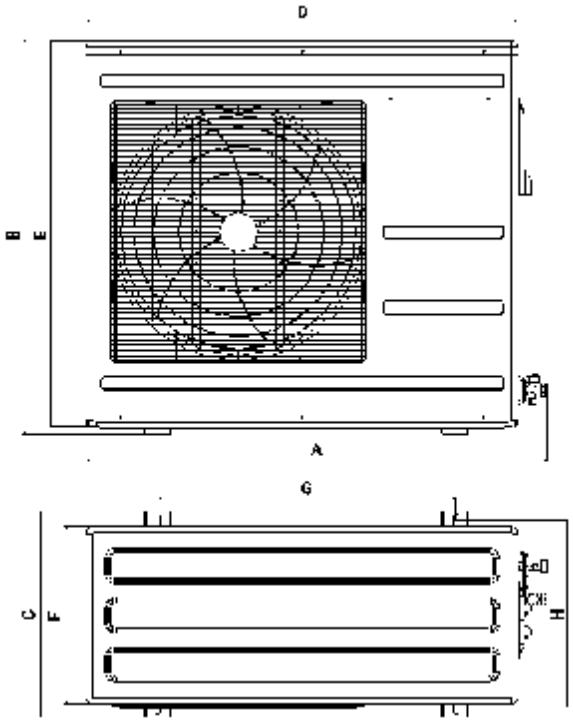
2.6 Universal Outdoor Unit

2.6.1 Structure Diagram



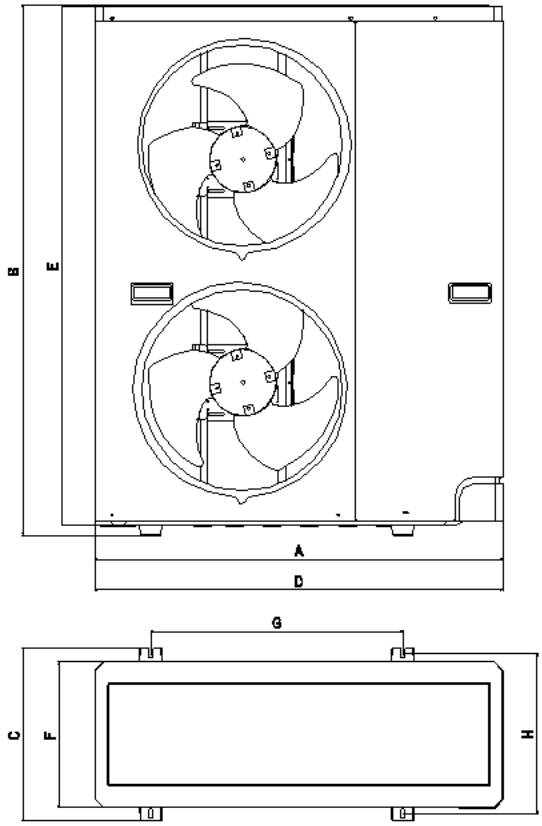
Dimensions / Model	A	B	C	D	E	F	G	H
12K	758	552	328	698	523	255	438	290
18K	859	689	370	800	669	299	540	330
24K	897	690	370	843	667	300	566	328

Unit:mm



Dimensions / Model	A	B	C	D	E	F	G	H
36K	939	804	420	880	787	360	606	380
42K 48K	1029	955	413	970	928	346	600	379

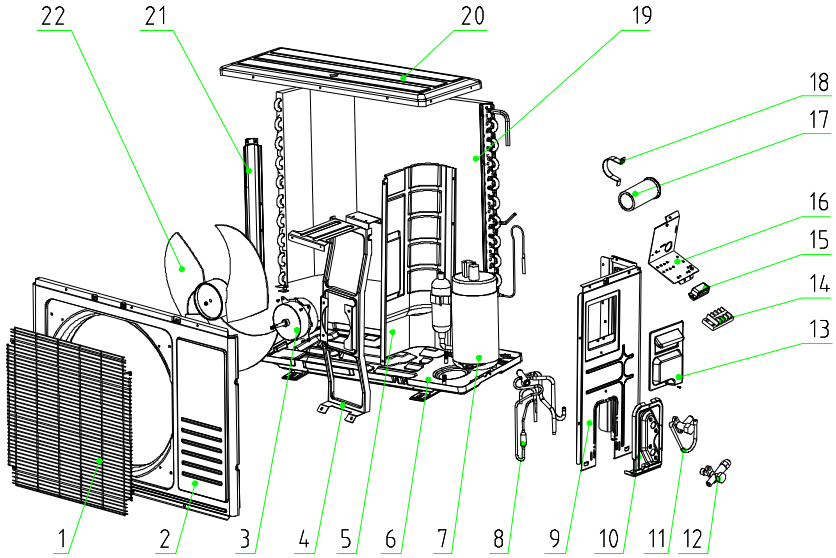
Unit:mm



Dimensions / Model	A	B	C	D	E	F	G	H
60K	973	1260	410	973	1232	345	600	380

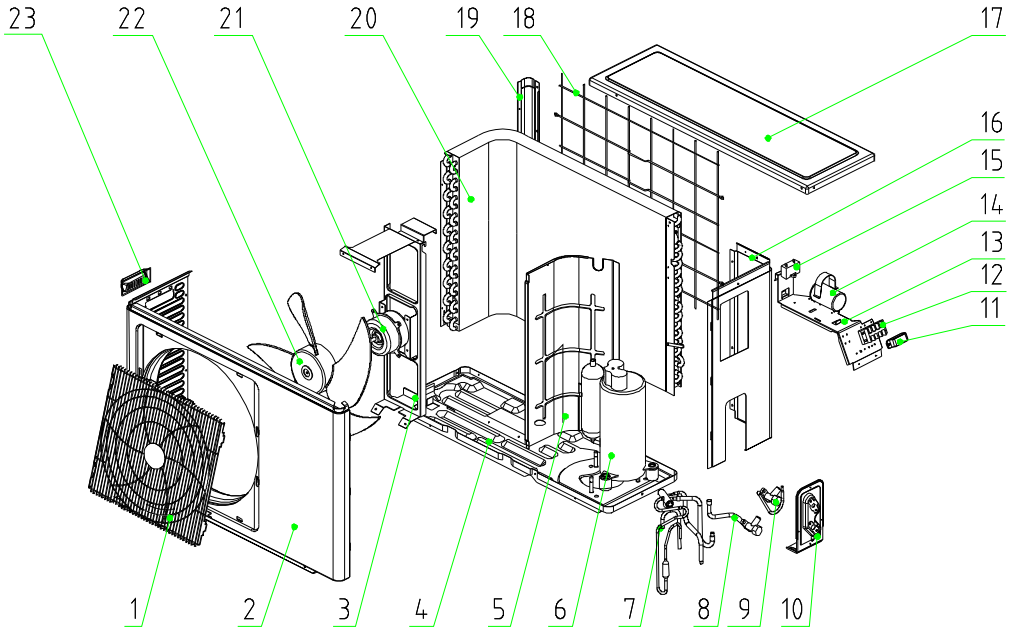
Unit:mm

2.6.2 Explosion Diagram



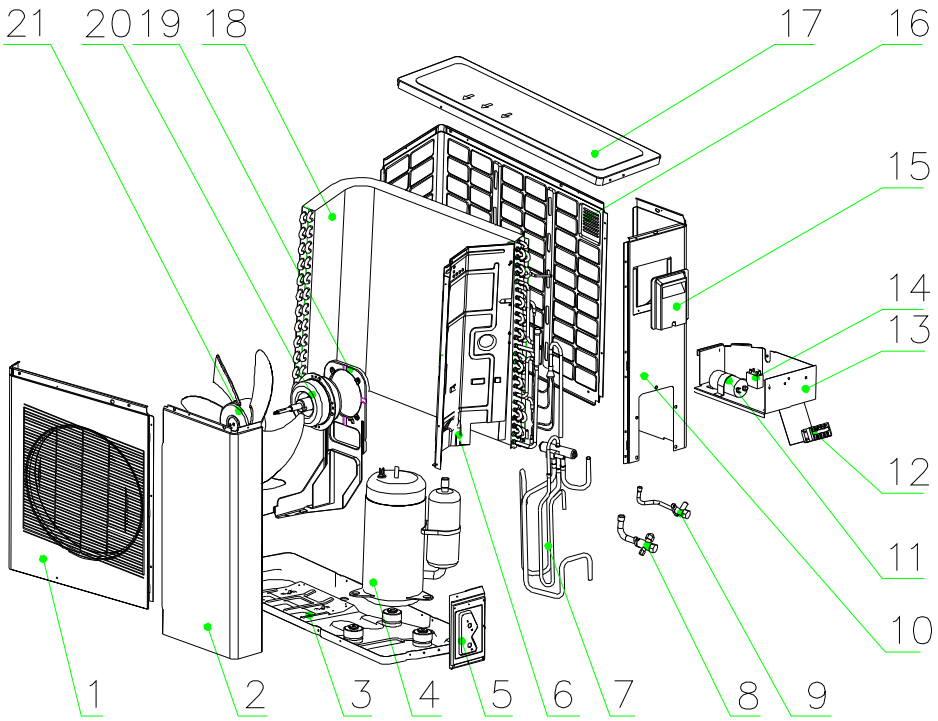
Model：GW-12HR

No.	Name	Qty.	Remark
1	Air outlet grille	1	
2	Front panel	1	
3	Fan motor	1	
4	Fan motor supporter	1	
5	Partition	1	
6	Bottom board	1	
7	Compressor	1	
8	Four-way valve assembly	1	
9	Right rear plate	1	
10	Valve board	1	
11	High pressure stop valve	1	
12	Low pressure stop valve	1	
13	Right handler	1	
14	Terminal board	1	
15	Power cable clip	1	
16	Electrical mounting board	1	
17	Compressor capacitor	1	
18	Capacitor clip	1	
19	Condenser	1	
20	Top plate	1	
21	Supporting plate	1	
22	Axial-flow fan assembly	1	



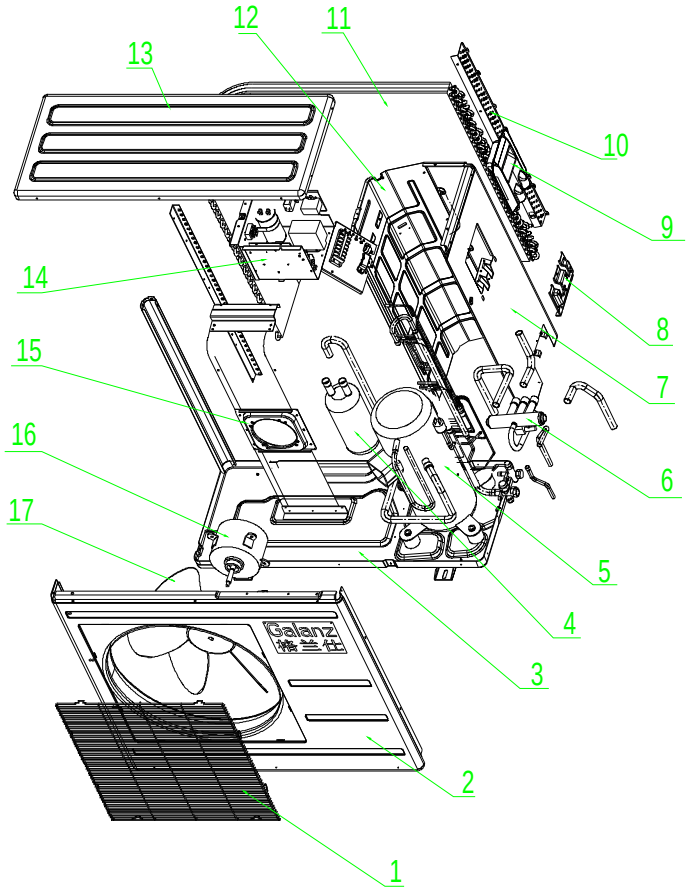
Model: GW-18HR

No.	Name	Qty.	Remark
1	Air outlet grille	1	
2	Front panel	1	
3	Fan motor supporter	1	
4	Bottom board	1	
5	Partition	1	
6	Compressor	1	
7	Four-way valve assembly	1	
8	Low pressure stop valve	1	
9	High pressure stop valve	1	
10	Valve board	1	
11	Power cable clip	1	
12	Terminal board	1	
13	Electrical mounting board	1	
14	Compressor capacitor	1	
15	Fan motor capacitor	1	
16	Right rear plate	1	
17	Top plate	1	
18	Condenser filter	1	
19	Left rear plate	1	
20	Condenser	1	
21	Fan motor	1	
22	Axial-flow fan	1	
23	Left handler	1	



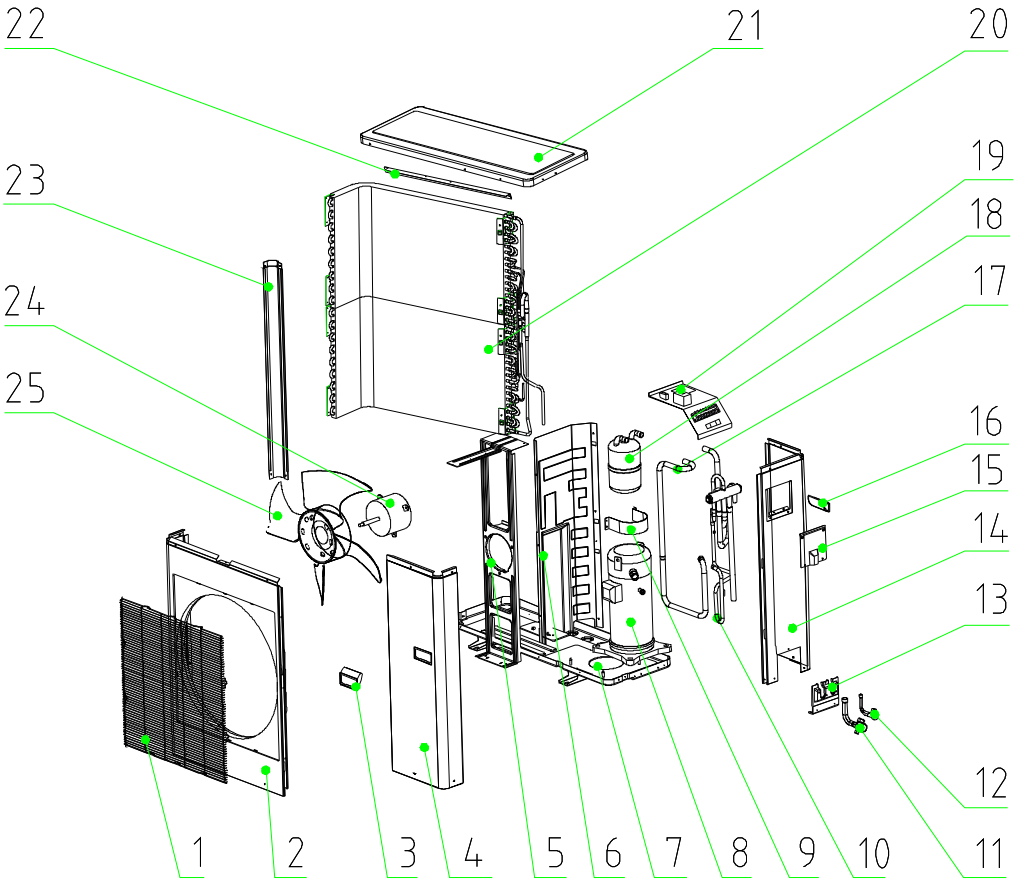
Model: GW-24HR

No.	Name	Qty.	Remark
1	Left front panel assembly	1	
2	Righty front panel assembly	1	
3	Bottom board	1	
4	Compressor	1	
5	Valve board	1	
6	Partition	1	
7	Four-way valve assembly	1	
8	Low pressure stop valve	1	
9	High pressure stop valve	1	
10	Right rear plate	1	
11	Compressor capacitor	1	
12	Terminal board	1	
13	Electrical box cover	1	
14	Fan motor capacitor	1	
15	Right handler	1	
16	Left rear plate	1	
17	Top plate	1	
18	Condenser	1	
19	Fan motor supporter	1	
20	Outdoor fan motor	1	
21	Axial-flow fan assembly	1	



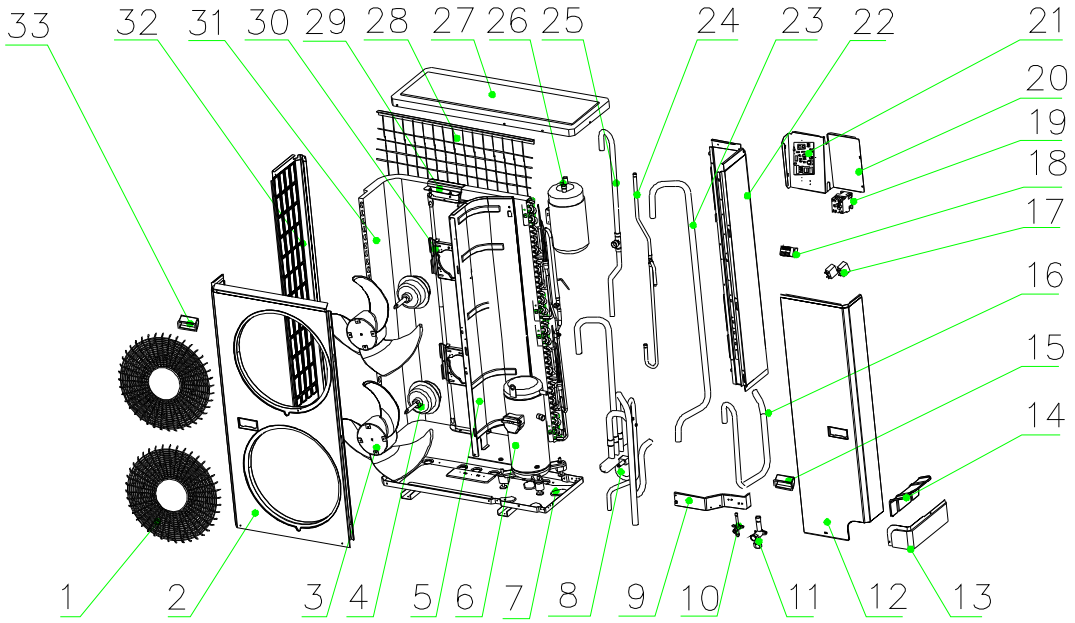
Model：GW-36HRS

No.	Name	Qty.	Remark
1	Air outlet grille	1	
2	Front panel	1	
3	Bottom plate	1	
4	Suction accumulator	1	
5	Compressor	1	
6	Four-way valve assembly	1	
7	Side plate	1	
8	Valve board	1	
9	Handler	1	
10	End plate of condenser	1	
11	Condenser	1	
12	Partition	1	
13	Top plate	1	
14	Electrical box	1	
15	Fan motor supporter	1	
16	Fan motor	1	
17	Axial-flow fan	1	



Model: GW-48HRS

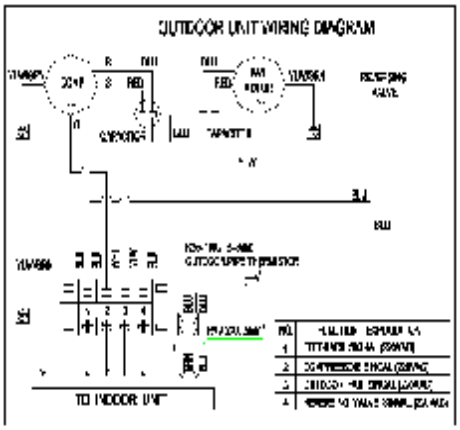
No.	Name	Qty.	Remark
1	Air outlet grille	1	
2	Left front panel	1	
3	Handler	1	
4	Right front panel	1	
5	Fan motor supporter	1	
6	Partition	1	
7	Bottom plate	1	
8	Compressor	1	
9	Suction accumulator fixing clip	1	
10	Four-way valve assembly	1	
11	Low pressure stop valve	1	
12	High pressure stop valve	1	
13	Valve board	1	
14	Right rear plate	1	
15	Electrical service plate	1	
16	Handler	1	
17	Suction pipe assembly	1	
18	Suction accumulator	1	
19	Electrical control component	1	
20	Condenser assembly	1	
21	Top plate assembly	1	
22	Reinforce bar of fan motor supporter	1	
23	Left rear plate	1	
24	Fan motor	1	
25	Axial-flow fan	1	



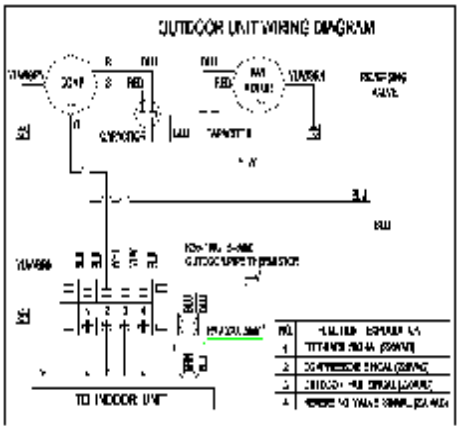
Model：GW-60HRS

No.	Name	Qty.	Remark
1	Air outlet grille	2	
2	Left front panel	1	
3	Outdoor axial-flow fan	2	
4	Outdoor fan motor	2	
5	Parition	1	
6	Compressor	1	
7	Bottom plate	1	
8	Four-way valve assembly	1	
9	Stop valve board	1	
10	High pressure valve	1	
11	Low pressure valve	1	
12	Right front panel	1	
13	Electrical service plate	1	
14	Supporting plate of right rear plate	1	
15	Handler	1	
16	Connection pipe of high pressure valve	1	
17	Fan motor capacitor	1	
18	Terminal board	1	
19	Contactor	1	
20	Electrical mounting plate	1	
21	Outdoor control board	1	
22	Right rear plate	1	
23	Suction pipe assembly	1	
24	Lower and upper liquid pipe assembly	1	
25	Lower and upper gas pipe assembly	1	
26	Suction accumulator	1	
27	Top plate assembly	1	
28	Filer of condenser	1	
29	Fan motor supporter 1	1	
30	Fan motor supporter 2	1	
31	Condenser assembly	1	
32	Left plate	1	
33	Handler	1	

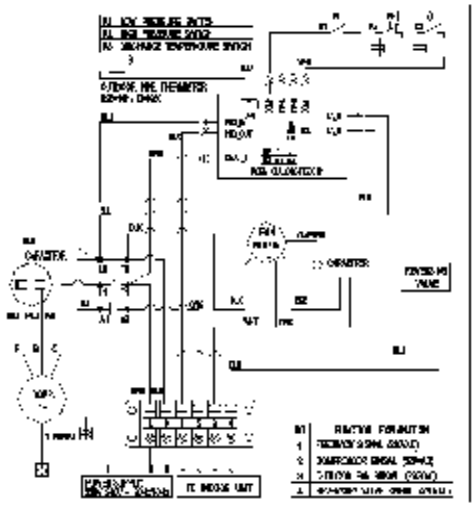
2.6.2 Wiring diagram



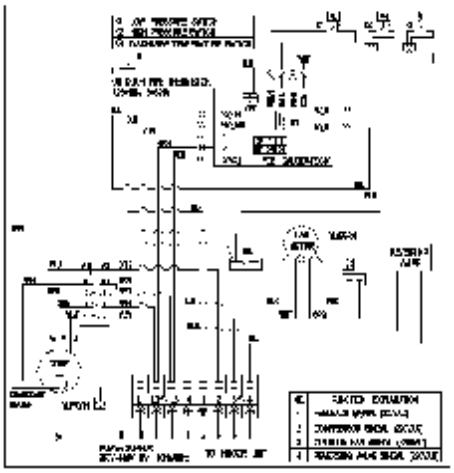
12K Single Phase, Heat Pump



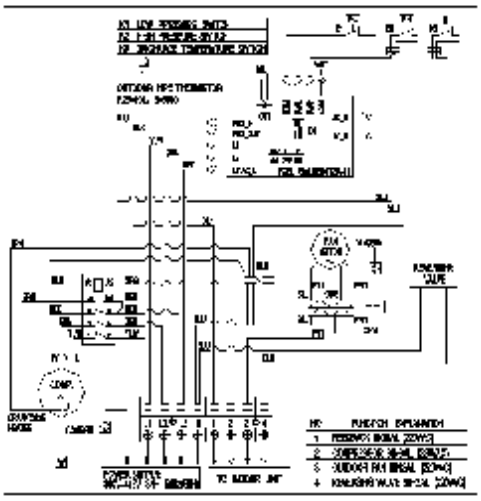
18K Single Phase, Heat Pump



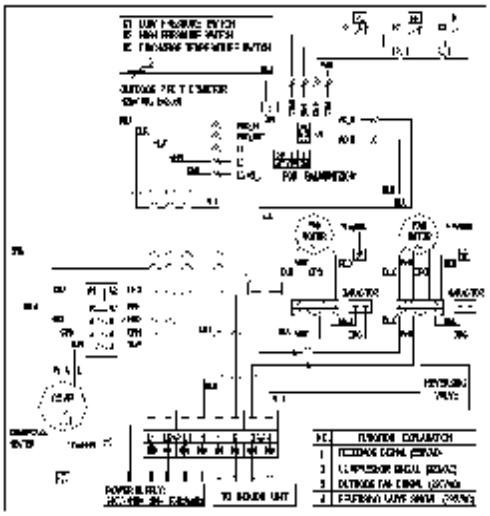
24K Single Phase, Heat Pump



36K Three Phases, Heat Pump



48K Three Phases, Heat Pump



60K Three Phases, Heat Pump

Part 3 Installation, Operation and Maintainance

3.1 Four-way Cassette Type

3.1.1 Installation

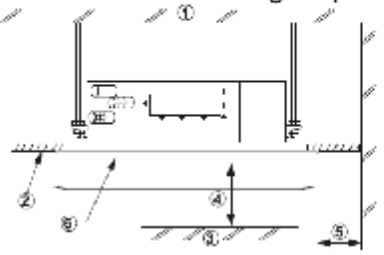
CHOICE OF INSTALL LOCATION

INSTALL LOCATION INSTRUCTION

Location of the indoor unit

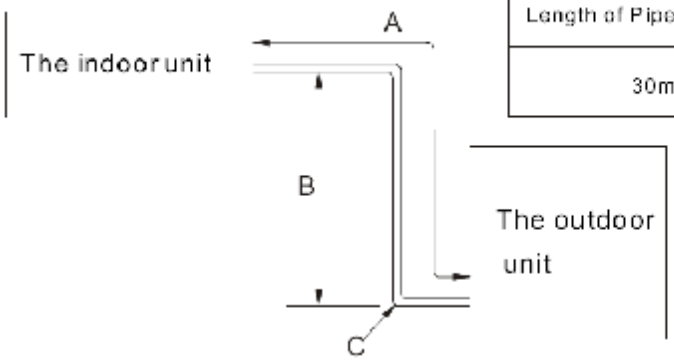
- The appliance must be installed 2.3m above floor.
- Mount on the roof or truss solid enough to bear the weight of the indoor unit.
- A place easy for air circulation around all corners.
- Keep the air inlet and outlet at a far distance from the blockage.
- The appliance must not be installed in the laundry.
- Avoid places where there are steam, lampblack and inflammable gas.
- Keep away from some equipment of high frequency. (Such as soldering machine)
- Avoid places near the fire alarm, for hot air may trigger the fire alarm during heating.
- Avoid places where there are spraying acidity liquor or sulphur.
- Certain maintenance space must be left, please see the following requirement:

1. Ceiling
2. Ceiling inlaid board.
3. Obstacle.
4. Maintenance space of 1m above.
5. Maintenance space of 50cm above.
6. Panel



Location of the outdoor unit

- Avoid direct sunshine.
- Avoid strong wind.
- Avoid places close to inflammable gas.
- A place easy for conjunction with the power supply as well as with the indoor pipe.
- A place where the operation noise will not annoy your neighbours.
- Avoid installing on the shelf which may strengthen the noise and shake.
- Watch for the condensation water discharging out of the chassis.
- Arrange the height difference of both indoor and outdoor units, the length of refrigerant pipe, number of bent position of pipe as the following requirement:



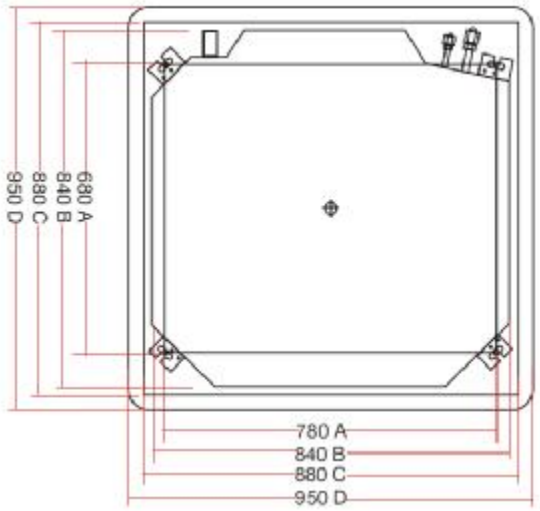
Length of Pipe A (one way)	B:Height difference	C: The number of bent position of pipe
30m	Lower than 15m	Less than 15

INSTALLATION OF THE INDOOR UNIT

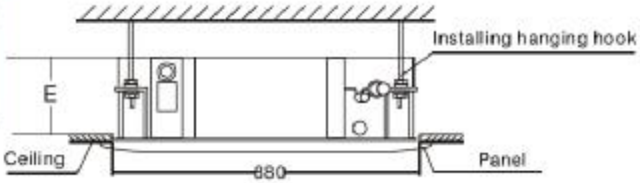
THE SIZE OF CEILING OPENING AND HANGING RING

Please notice the following size of ceiling opening, and its value may vary as the practical installation.

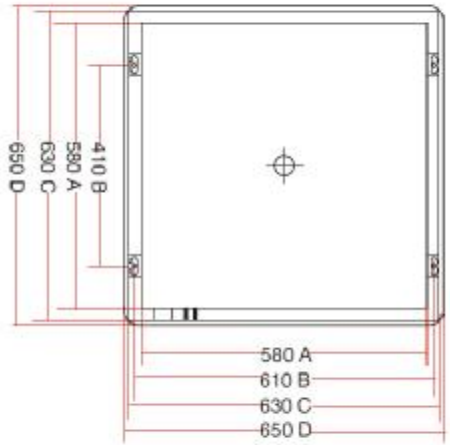
For models of 24K, 36K, 42K, 48K:



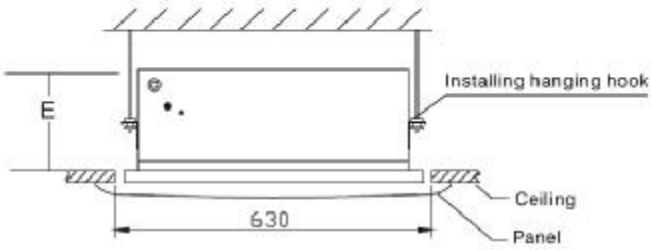
A. Distance of eyebolt
B. Size of outer edge of the unit
C. Ceiling opening size
D. Size of outer edge of the panel
E. For 24K:230mm
For 36K, 48K:300mm



For model of 18K:



A. Size of outer edge of the unit
B. Distance of eyebolt
C. Ceiling opening size
D. Size of outer edge of the panel
E. For 18K:255mm



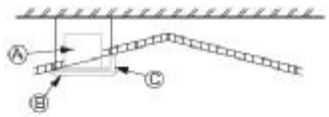
INSTALLATION OF THE INDOOR UNIT

DESIGN OF STRUCTURE FOR HANGING

Notice:

For the sake of safety assurance, the place for hanging must bear enough strength and pressure.

The ceiling should keep horizontal. If installed on the declining ceiling, gasket must be inserted between the ceiling and panel.



A. Indoor unit

B. Panel

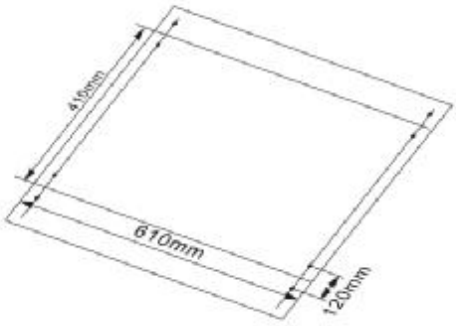
C. Gasket

Install on the roof of reinforced concrete structure.

Please fix the inflate bolt F on the mounting plate as the picture1 shown

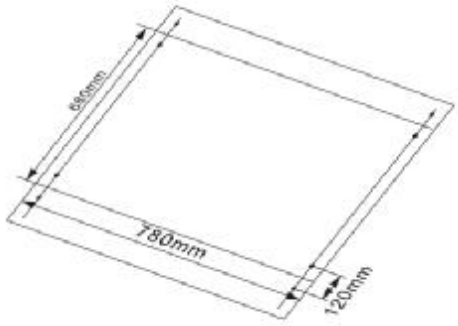
Attention: check the inflate bolt to ensure that it is not loose.

Fix the mounting bracket onto the inflate bolt F and then the eyebolt shall be fit as picture 2 shown.



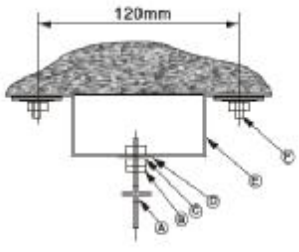
Picture 1-a (bottom view)

(For 18 K)



Picture 1-a (bottom view)

(For 24K, 36K, 42k, 48K)



A. Eyebolt

B. Nut

C. Spring washer

D. Flat washer

E. Mounting bracket

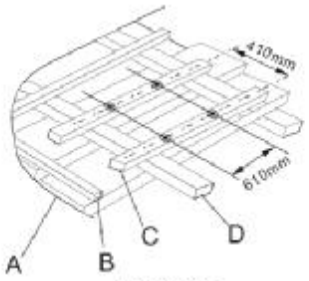
F. Inflate bolt

Picture 2

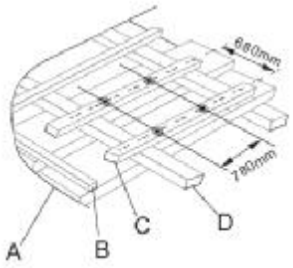
INSTALLATION OF THE INDOOR UNIT

Install on the roof of wooden structure

Please choose rafter as hanging material.
Wooden rafter for hanging the air conditioner must have high reliability.
Notice:
Distance between the rafter should be over 500mm.
Rafter width should not be smaller than 60mm.
Eyebolt Φ10mm.



For 18K

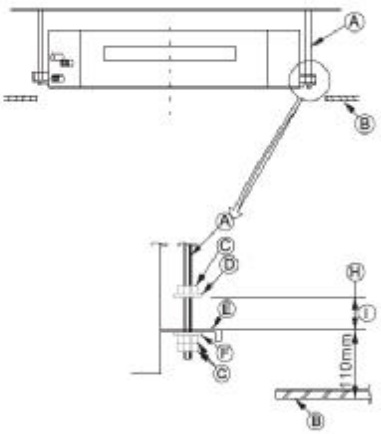


For 24K, 36K, 42K, 48K

A. Ceiling inlaid board
B. Girder
C. Rafter
D. Peak girder

HANG OF THE INDOOR UNIT

The eyebolt should be set in this order: M10 nut(1 piece), insulation washer (1 piece, with insulation side downwards), washer (1 piece), nut (2 pieces).
Hoist the indoor unit up to approach the bolt ,then embed the mounting piece between the insulation washer and the washer.
Attention: if you find the indoor unit difficult to aim at the gearing pore of the ceiling, adjust the slippery slot on the mounting piece.



A. Eyebolt M10
B. Ceiling inlaid board
C. Nut M10
D. Insulation washer
E. Mounting piece
F. Washer
H. Screw tight after mounting
I . At least 30mm

INSTALLATION OF THE OUTDOOR UNIT

FIXATION OF THE INDOOR UNIT.

Adjust the indoor unit horizontally by level ruler or ethylene tube filled up with water (Please balance by screwing tight or loosening the following two nuts). Ensure there is no clearance between the ceiling inlaid board and the panel, no clearance between the indoor unit and the panel.

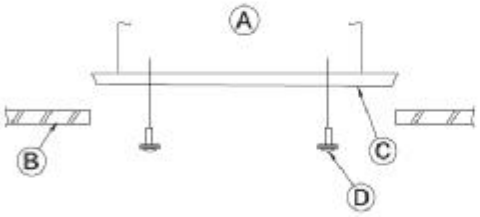
Aim the bottom of the indoor unit at the center of the opening of the ceiling, so as to ensure the same distance between the symmetry side of all direction with the edge of the ceiling. Once determining the position of the indoor unit, screw tight both the upper and bottom screw of the bolt and fix the indoor unit.

FIXATION OF THE INDOOR UNIT PANEL.

For models of 24K, 36K, 42K and 48K, please fix the panel to the indoor unit with the hooks on it.

For model of 18K, please fix the panel with the screws in it.

Notice: if there is no panel to fix on the indoor unit, please use the mounting plate as substitution for dustproof panel.

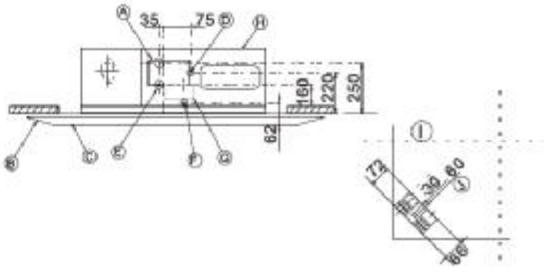


A. The indoor unit
B. The ceiling inlaid board
C. Cardboard for measurement
D. Four screws with washer

POSITION OF REFRIGERANT PIPE AND DRAIN PIPE

(UNIT: MM)

A. Drain pipe B. The ceiling inlaid board
C. Panel D. Liquid pipe of refrigerant
E. Gas pipe of refrigerant F. Drain plug
G. Water pump H. The indoor unit
I. Top view J. Length of inserted drain pipe



PIPELINE INSTALLATION (THE INDOOR UNIT)

INSTALLATION OF REFRIGERANT PIPE

Installation sequence

(1) Keep the original status of closing of gas valve and liquid valve of the outdoor unit. Dismantle the nuts, anti-dust cap and piping screw plugs from the indoor and outdoor pipes respectively, and connect horns of the pipes at the mean time (avoid dust, moisture, and other things getting into the pipes.)

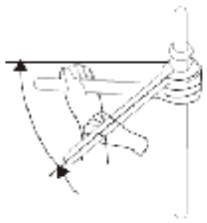
- Smear a thin layer of seal oil on the matching surface of the horns and the connectors before fixing the horn nuts.
- When tightening the nuts, firstly push the horn onto the cone surface of the connector, and keep the leading pipe and the connector in the same axis, then gradually turn the cone nuts clockwise tightly with hands, and then tighten it with a wrench.
- When tightening the nuts with wrench, apply torque according to the right list, if it is not tightened enough, leakage of refrigeration agent may happen, but if it is too tight, the horn surface may be damaged.

Screw torque standard

Copper pipe diameter(mm)	Screw torque (N.m)
Ø9.52	35-40
Ø15.88	73-78
Ø19.05	98-130

Screw angle standard

Pipe diameter	Screw angle
Ø9.52	60°-90°
Ø15.88	30°-60°
Ø19.05	20°-35°



(2) Complete the horns connection in sequence, to finish connection of all the refrigeration agent pipes.

- The bending angle of the pipes should not be less than 90 degree, bending radius should not be less than 100 mm, and bending times should not exceed 3 times.
- After finishing connection of all pipes, use a tester of soap to check if there is leakage in the pipes.
- The connection part of the pipes should be covered with isolation sleeves, to avoid water condensing at these positions, offsetting the isolation sleeves for gas and liquid pipes.

(3)Suction the air out from the maintenance opening of the pipe by a vacuum pump, to form vacuum inside the pipes.

(4)After finishing the above operation, open both the gas valve to let the indoor and outdoor pipes openly connected.

PIPELINE INSTALLATION

SUPPLEMENTATION OF REFRIGERANT

Caution:
Dot not try to exhaust the air inside the pipes by refrigeration agent in the outdoor unit. When compensating refrigeration agent, please use the filling port on the gas valve of the outdoor unit.

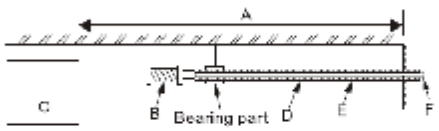
■ If the connecting pipe is less than 5m,do not need to add refrigerant; If it is longer than 5m,please add refrigerant in accordance with the right table.

Type	Allowable length of the pipe (one way)	Supplemental amount of refrigerant
18K	20m	30g per meter
24K/36K/42K/48K	30m	50g per meter

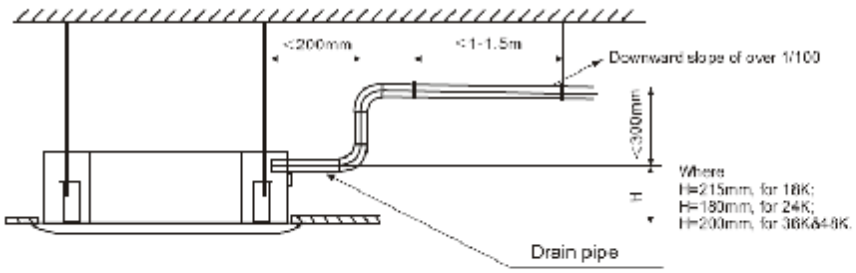
■ Vaccummize with vacuum pump.

INSTALLATION OF DRAIN PIPE

Insert one end of drain pipe into the waterspout ; connect the other end to PVC electric cable slot tube with outside diameter of 20mm. (Please purchase in local market)
The drain pipe should set downwards at 1/100 or more inclination angle.
Please purchase the heat preservation cover to bind up hard PVC pipe to prevent the condensed water flowing out.



A. 20M at most B. Drain pipe
C. The indoor unit
D. Insulation material (9mm or above)
E. Inclination angle of 1/100 or above
F. Electric cable slot tube

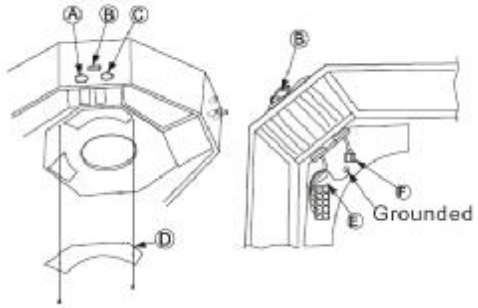


Notice:
If the drain pipe (or just part of the pipeline) is arranged higher than the drain port of the indoor unit, the height difference must not exceed 300mm, otherwise the water will overflow when the air conditioner stops.

ELECTRIC INSTALLATION

WIRING OF THE INDOOR UNIT

1. Pull apart the mounting cover panel D at the connecting part of wire.
2. Put the power supply connecting cable, signal connecting cable through Place A, B and the rubber underlay and link the power supply connecting cable and signal connecting cable correctly.
3. Fix the connecting cable with clip board B.
   A. Entrance of signal connecting cable
   B. Clip board
   C. Entrance of power supply connecting cable
   D. Mounting cover panel
   E. Terminal
   F. Linker



Attention: the earth wire must be firmed and the terminal bolt must be screwed tight.

Explanation of the DIP jumps on the indoor mainboard

⚠ NOTICE

The way to judge 24V or 220V outdoor unit control mode:
If the right warning label is shown on the terminal board, then it is 24V outdoor unit control mode; If not, it is 220V outdoor unit control mode.

CAUTION!
TERMINAL 1, 2, 3, 4 ARE LOW VOLTAGE SIGNAL (24Vac), SO DON'T APPLY HIGH VOLTAGE, OR BREAKDOWN WILL OCCUR!

For 2 digits switches

	No.	Setting items	DIP1	DIP2	Consequence	Remarks
	1	Use function setting	ON	---	Cooling only type	
			OFF	---	Heat pump type	
	2	Communication mode	---	ON	Wave communication	**For 24V outdoor unit control mode, only OFF position can be selected.**
			---	OFF	Level communication	

For 4 digits switches

	No.	Setting items	DIP1	DIP2	DIP3	DIP4	Consequence
	1	Model Setting	ON	OFF	ON	---	18K
			OFF	ON	ON	---	24K/36K/42K/48K
	2	light-wave generator or crankcase heater	---	---	---	ON	Equipped
			---	---	---	OFF	Unequipped

WIRING OF THE OUTDOOR UNIT

ELECTRIC INSTALLATION

1. Dismantle the maintenance plate on the right side of the unit.
2. Loosen the screws of the wire clamper, then take down the clamper.
3. Connect power cables and signal cables to the connector as wiring diagram on the unit.
4. Re-install the dismantled parts to their original state.

Explanation of the DIP jumps on the outdoor mainboard

No.	Setting items	DIP1	DIP2	Consequence	Remarks
1	Use function setting	ON	---	Cooling only type	
		OFF	---	Heat pump type	
2	Communication mode	---	ON	Wave communication	**For 24V outdoor unit control mode, only ON position can be selected.**
		---	OFF	Level communication	

Note: Renew the power supply to the unit when the jump setting is finished.

Connecting and layout of the power supply cable

Related parameters are as following:

Unit: mm^2

Nominal Cooling Capacity (Btu/h)	Indoor Unit Power Cable	Outdoor Unit Power Cable	Indoor and Outdoor Connecting Cable (220V outdoor unit control)			Indoor and Outdoor Connecting Cable (24V outdoor unit control)	
			Cooling Only	Heat Pump	Heat Pump (sensor connecting cable)	Cooling Only	Heat Pump
18000(single phase)	3G2.5	—	3×2.5	5×2.5	2×0.5	2×0.75	4×1.0
24000(single phase)	3G1.0	3G2.5	2×0.75	4×1.0	—	2×0.75	4×1.0
24000(three phases)	3G1.0	5G2.5	2×0.75	4×1.0	—	2×0.75	4×1.0
36000(single phase)	3G1.0	3G4.0	2×0.75	4×1.0	—	2×0.75	4×1.0
36000(three phases)	3G1.0	5G2.5	2×0.75	4×1.0	—	2×0.75	4×1.0
42000(single phase)	3G1.0	3G4.0	2×0.75	4×1.0	—	2×0.75	4×1.0
42000(three phases)	3G1.0	5G2.5	2×0.75	4×1.0	—	2×0.75	4×1.0
48000(single phase)	3G1.0	3G6.0	2×0.75	4×1.0	—	2×0.75	4×1.0
48000(three phases)	3G1.0	5G2.5	2×0.75	4×1.0	—	2×0.75	4×1.0

Note: *– The numbers in the above table are based on independent power supply of indoor and outdoor unit.*
– The provided cable sizes in the above table can apply to 24 or 220VAC outdoor unit control mode.

- The wiring should be handled by certified electrician, and should be in conformance with regulations of the local power supply department and electrical appliances standards.
- Both the indoor unit and outdoor unit should be properly connected to earth.
- Environment conditions should be taken into account (ambient temperature, direct sunshine).
- The wire dimensions are minimum values for metal-core wires. Consider the voltage loss, and use power supply core of a higher grade.
  If power supply lines are damaged, contact our appointed maintenance department for replacement by special cord.

OPERATION TEST

CONFIRMATION BEFORE OPERATION TEST

After finishing the installation of both indoor and outdoor unit, connection of the pipe and wiring , ensure there is no refrigerant leakage, no loose power supply cord or signal cord and no wrong connection of positive and negative pole.

Attention: if there is mistake in power supply cord connecting, the compressor will not run.

OPERATION TEST

- Switch on the power supply
- Emergency switch operation: every press of emergency switch, the air conditioner runs as the following order:

  forced AUTO mode ⟶ forced COOL mode ⟶ shut off

- Remote controller operation: if the indoor unit raise sound like Di, Di when pressing I/O button, that indicates the air conditioner is under the operation of remote controller. After that, press every button to test their functions.
- Press function select button and select fan mode to check if there is air blowing out.
- Press function select button and select cool mode to check if there is cool air blowing out.
- Press function select button and select heat mode to check if there is warm air blowing out.
- Press fan speed button and select high speed mode to check if there is strong wind blowing out.
- Press swing button to check if the deflector runs normally.

EXPERIMENTAL DRAIN DEVICE

After installation, drain device must be checked out carefully.

During operation test, be sure to drain out correctly and no water leakage at the joint.

Pull apart the cover B of pipe ingoing hole and inject 1000ml water into the drip tray by water supply pump. While injecting ,do not sprinkle the water on the water supply pump.

Be sure to verify that the water should be drained through the drain opening.

After checking, remove the cover B of pipe ingoing hole to its original place and do not drop it. Besides, switch off the main power supply.

Insert the rubber drain plug after water is drained out.

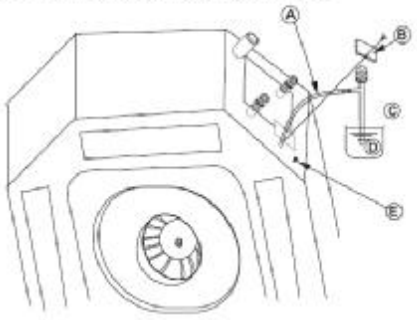
A. Insert the pump end into 3-5cm.

B. Cover B of pipe ingoing hole

C. Approximately 1000ml

D. Water

E. Rubber drain plug



FAULT INDICATING INSTRUCTIONS

FAULT INDICATION ON INDOOR DISPLAY PANEL

No.	Fault	Display mode
1	Power source fault	RUN lamp flashes 1 time, and ALARM lamp illuminates.
2	Communication of wire controller fault	RUN lamp flashes 2 times, and ALARM lamp illuminates.
3	Communication of outdoor unit fault	
4	Room temp. sensor fault	RUN lamp flashes 3 times, and ALARM lamp illuminates.
5	Indoor coil temp. sensor fault	RUN lamp flashes 4 times, and ALARM lamp illuminates.
6	Outdoor coil temp. sensor fault	RUN lamp flashes 6 times, and ALARM lamp illuminates.
7	Outdoor unit protection alarm	RUN lamp flashes 7 times, and ALARM lamp illuminates.
8	Compressor high pressure/overload protection alarm	RUN lamp flashes 8 times, and ALARM lamp illuminates.
9	Compressor low pressure protection alarm	RUN lamp flashes 9 times, and ALARM lamp illuminates.
10	Condensate water level switch alarm	RUN lamp flashes 10 times, and ALARM lamp illuminates.
11	Indoor coil anti-freeze protection in cooling	RUN lamp flashes 12 times, and ALARM lamp illuminates.
12	Indoor coil overheated protection in heating	
13	Outdoor coil overheated protection in cooling	RUN lamp flashes 13 times, and ALARM lamp illuminates.
14	Unit running failure	RUN lamp flashes 15 times, and ALARM lamp illuminates.
15	Cold air prevention protection in heating	TIMER lamp flashes 1 time, and DEFROSTING/PREHEATING lamp illuminates.
16	Defrosting in heating	TIMER lamp flashes 2 times, and DEFROSTING/PREHEATING lamp illuminates.
17	Indication to clean filter	TIMER lamp flashes 3 times, and DEFROSTING/PREHEATING lamp illuminates.
18	Working indication of crankcase heater	TIMER lamp flashes 4 times, and DEFROSTING/PREHEATING lamp illuminates.

Note: 1. The outdoor coil temp. sensor fault only happens in heating mode.
2. As for fault of No. 7,8 or 9, if it happens 3 times continuously, then for the forth time you need to figure out the reason, and then renew the power and restart the unit.

FAULT INDICATION ON OUTDOOR CONTROL BOARD

No.	Fault	Display mode
1	Power source fault	Fault indicating lamp flashes 1 time.
2	Outdoor coil temp. sensor fault	Fault indicating lamp flashes 4 times.
3	Compressor overload protection alarm	Fault indicating lamp flashes 5 times.
4	Compressor high pressure protection alarm	Fault indicating lamp flashes 6 times.
5	Compressor low pressure protection alarm	Fault indicating lamp flashes 7 times.
6	Compressor outdoor protection alarm	Fault indicating lamp flashes 8 times.

Note:
The flash mode of the indicating lamps in the above two tables: The lamp flashes N times in a row, then suspen
for 3 seconds, and then goes to another circle until the fault is reset.

FAULT INDICATING INSTRUCTIONS

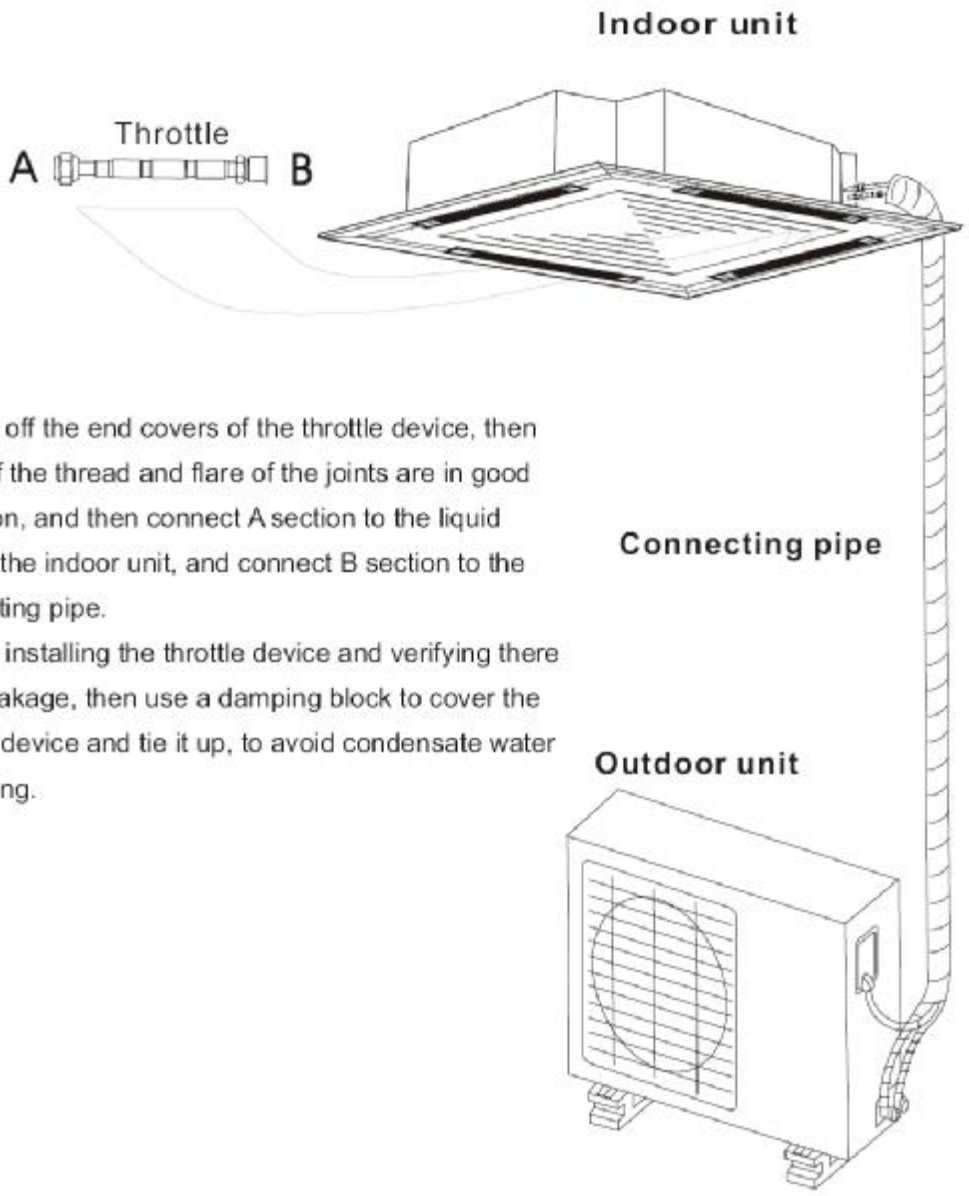
FAULT INDICATION ON WIRE CONTROLLER

No.	Fault codes	Faults	Causes	Treatment
1	A0	Power supply malfunction	Fault phase or short of phase.	Find the reason then correct the wiring.
2	C0	Communication of wire control malfunction	Wire control is not well connected.	Connect the wire control firmly.
3	C1	Communication between indoor and outdoor unit malfunction	Indoor unit and outdoor unit are out of communication	Contact local service center.
4	E1	Indoor ambient temp. sensor malfunction	Sensor is abnormal.	Cut off power supply, check whether the sensor is well connected, if so, replace the abnormal sensor.
5	E2	Indoor unit coil temp. sensor malfunction	Sensor is abnormal.	Cut off power supply, check whether the sensor is well connected, if so, replace the abnormal sensor.
6	E4	Outdoor unit coil temp. sensor malfunction	Sensor is abnormal.	Cut off power supply, check whether the sensor is well connected, if so, replace the abnormal sensor.
7	H1	Outdoor unit protection alarm	Outdoor unit is at fault	Check the cause as the flashing mode of the lamp on outdoor unit main board
8	H2	Compressor high pressure /overload protection alarm	Outdoor temperature is too high; air inlet or outlet is blocked; air filter is very dirty.	Find out the cause and fix it.
9	H3	Compressor low pressure protection alarm	Outdoor temperature is too low; refrigerant has leaked too much; suction pressure drops rapidly when collecting refrigerant to outdoor unit.	Find out the cause and fix it.
10	H4	Condensed water level switch raises an alarm	1. In cooling or dehumidifying mode, too much condensed water occurs or the water is out of smooth drainage.	Normally, the system will solve the fault in 20 minutes automatically. Note: In the process, only "heating" and"fan" mode is available when pressing "mode" button.
			2. The high water level alarm lasts for 20 minutes and still remain, in this case, system will raise sound alarm.	1. The system is locked, you need to cut off power supply and check the drainage pump. 2. when the malfunction is worked out, restore the power supply.
11	P1	Indoor coil anti-freeze protection when cooling	System protection	Automatic recovery.
12	P2	Indoor coil over-heated protection when heating	System protection	Automatic recovery.
13	P3	Outdoor coil over-heated protection when cooling	System protection	Automatic recovery.
14	FF	Unit running failure	System protection	Restart the unit.
15	P6	Prevention of cold air protection when heating	System protection	Automatic recovery.
16	P7	Defrosting protection when heating	System protection	Automatic recovery.
17	P8	Working indication of crankcase heater	System protection	Automatic recovery.
18	CF	Indication to clean filter	Filter mesh is dirty.	Cut off the power, and then clean the filter.

Note:

– *The wire controller can also receive remote signal from remote controller.*

Appendix 1 Throttle Device Installation

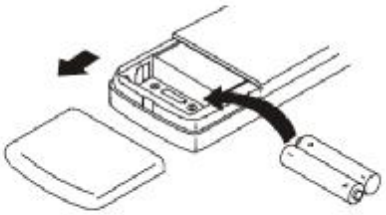


1. Take off the end covers of the throttle device, then check if the thread and flare of the joints are in good condition, and then connect A section to the liquid pipe of the indoor unit, and connect B section to the connecting pipe.
2. After installing the throttle device and verifying there is no leakage, then use a damping block to cover the throttle device and tie it up, to avoid condensate water producing.

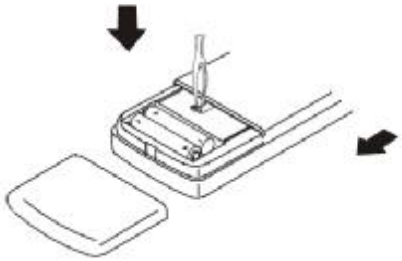
3.1.2 Operation

PREPARATION BEFORE OPERATION

1 Open the back cover, put in batteries and reset the back cover as before.

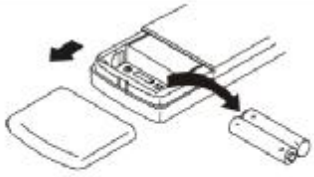


2 Short RESET pieces with appropriate metal object.



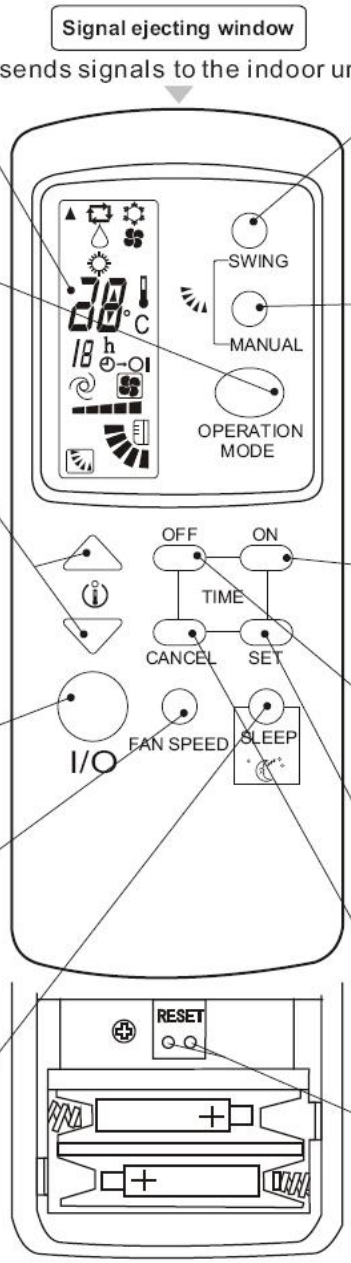
⚠ NOTICE

- If the remote controller does not work, short the RESET pieces
- The signal can be reached within six metres directly in front of indoor unit.
- Handle remote controller carefully. Do not drop, throw and get it wet.
- When the button is pressed, indoor unit will beep once or twice, indicating the receiving of the signal. If no beep is heard, press again.
- Remove batteries if the remote controller is not being used for a period of time.



NAME OF PARTS

REMOTE CONTROLLER



Signal ejecting window

It sends signals to the indoor unit.

OPERATION DISPLAY

It displays the current settings.

OPERATION MODE button

Press it to select operation mode: AUTO COOL HEAT FAN DRY

TEMPERATURE ADJUSTMENT buttons

Press △ once, the setting temperature increases by 1℃.
Press ▽ once, the setting temperature decreases by 1℃.
The range of setting temperature is 16-31℃.

RUN/STOP button

Turns unit ON/OFF.

FAN SPEED button

Press it to change the fan speed in the order of low-medium-high -auto (▬→▬▬→▬▬▬→).

SLEEP button

Press it to start sleep function and press again to stop it.

SWING button

Press it to change up/down air flow direction and the deflector automatically swings up and down.

MANUAL SWING button

Press it to change up/down air flow direction and the deflector moves at a certain angle. You can change the moving angle in the order of:

(1)→(2)→(3)→(4)→(5)

TIMER ON button

Please see "AUTO-ON/OFF timer operation".

TIMER OFF button

Please see "AUTO-ON/OFF timer operation".

TIMER SET button

Press it to fix the timer setting.

TIMER CANCEL button

Press it to cancel the timer setting.

RESET pieces

If the remote controller can't work normally, short the two RESET pieces, it will be OK.

NOTICE:

- **Cool only type has no HEAT mode.**
- **To operate, the distance should be within 6 meters from the indoor unit with a clear line of sight.**
- **Remove the batteries if the remote controller is not to be used for long periods of time.**
- **In this illustration, all displays are ON for the purpose of explanation. Some models may not show all these indications.**
- **Don't tear the batteries apart or throw them into fire, which will lead to irreparable damage.**

OPERATION OF AIR CONDITIONER

■ OPERATION WITH REMOTE CONTROLLER

1 Run/Stop

- Press **I/O** button once to start operation and press it again to stop operation.
- Once the air conditioner starts operation, it will sound "beep" once and the run indicator lamp is illuminated.

2 Temperature Adjustment

- Every press of "△" button increases the setting temperature by 1℃, every press of "▽" button decreases the setting temperature by 1℃.
- The set temperature will be shown on display panel of the remote controller.
- The range of setting temperature is 16-31℃.

3 Fan Speed Adjustment

- Press FAN SPEED button to change the fan speed of indoor unit in the order of: low → medium → high → auto (▬ → ▬▬ → ▬▬▬ → ֍)

4 Sleep Selection

- Press sleep button once to start sleep function and press it again to stop sleep function.
- Once activating sleep function, the sleep indicator lamp will illuminate on the operation panel of the indoor unit.

5 Air flow direction adjustment

- Air flow by swinging

  Press swing button on the remote controller, the deflector will swing up and down.
- Directional air flow

  When the deflector moves at your desired angle, press swing button on the remote controller, the deflector stops to blow directional air flow.

6 Operation mode selection

Press mode selection button on the remote controller to choose the following mode:

- AUTO mode

  In this mode, the air conditioner can automatically adjust the room temperature to decide the most suitable temperature. At the start of operation, the air conditioner will automatically select the operation mode depending on room temperature. Please refer to the following:

OPERATION OF AIR CONDITIONER

Room Temperature (RT)	Selected mode
RT≤20℃	Heating (For cooling only type, dehumidifying mode is selected)
20℃<RT<24℃	Fan
RT≥24℃	Cooling

- COOL mode

  In this mode, press temperature adjustment button to set temperature; press fan speed button to change airflow speed of the indoor unit.
  Press SWING button to set the airflow angle or adjust the vane swinging up and down.

- DRY mode

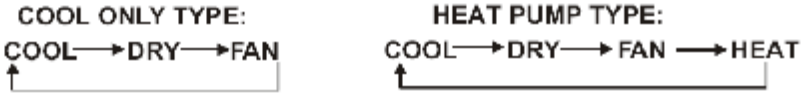
  In this mode, the air conditioner automatically decides the setting temperature and this setting temperature will not appear on display. Neither the setting temperature nor the fan speed could be adjustable. You can press SWING button to set the airflow angle.

- FAN mode

  In this mode, only the indoor unit runs like the fan. Press fan speed button to change the airflow speed and press swing button to set the airflow angle.

- HEAT mode (only applied to heat pump type)

  In this mode, press temperature adjustment button to set temperature; press fan speed button to change the airflow speed of the indoor unit.
  Press swing button to set the airflow angle or adjust the vane swinging up and down.
  Press mode selection button on the remote controller to cycle the mode in the following order:



- SLEEP mode

Sleep mode in cooling and drying running.

A. The indoor fan runs at low speed.
B. After one hour of operation the set temperature will increase by 1℃. One hour later, the set temperature will increase by 1℃ once more. The unit will then continue operating at 2℃ above the set temperature.

Sleep mode in heating running.
A. The indoor fan runs at low speed.
B. After one hour of operation the set temperature will decrease by 2℃. One hour later, the set temperature will decrease by 2℃ once more. The unit will then continue operating at 4℃ below the set temperature.

OPERATION OF AIR CONDITIONER

7 Timer operation

- AUTO-ON/OFF timer operation set

1.Press button ⏲ when the air conditioner is on to initiate the AUTO-OFF TIMER function. Meanwhile, ○ of ⏲→○ starts to flash on the display.

Press button ⏲ when the air conditioner is off to initiate the AUTO-ON TIMER function. Meanwhile, | of ⏲→| starts to flash on the display.

2.Every press of button ⏲ or ⏲ increases the AUTO-ON/OFF time by one hour (12 hours at most) and the digits of AUTO-ON/OFF time will appear on the display.

3.Press button SET to set the AUTO-ON/OFF time. The | or ○ will stop flashing on the remote controller display.

- AUTO-ON/OFF timer operation cancellation

If you want timer operation cancelled, press button CANCEL until the digits of AUTO-ON/OFF time and ⏲→○ or ○→ disappear on the remote controller display.

NOTICE:

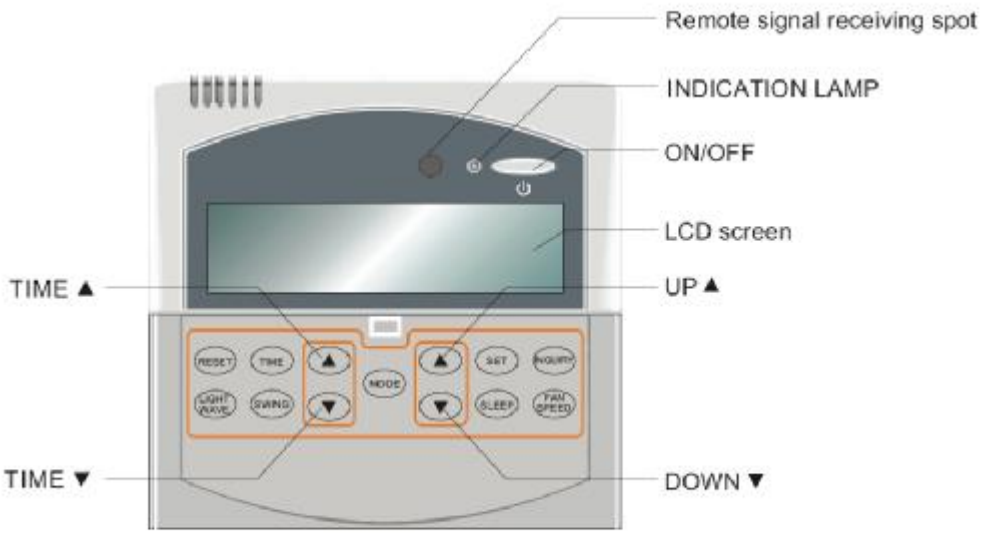
1).TIMER ON/OFF operation must be set again after a power failure.

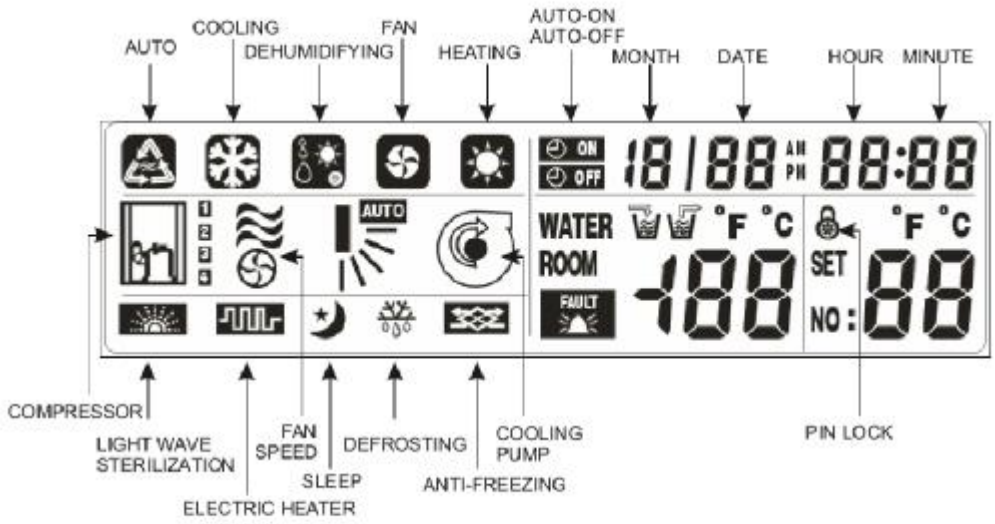
2).Once the AUTO-ON/OFF time is fixed, if you want to change it, you should cancel the previous AUTO-ON/OFF timer operation.

3).If you press the button SET once incautiously after the AUTO-ON/OFF time is fixed, the system will count time anew based on the current display time.

OPERATION OF AIR CONDITIONER

WIRE CONTROLLER (OPTIONAL)



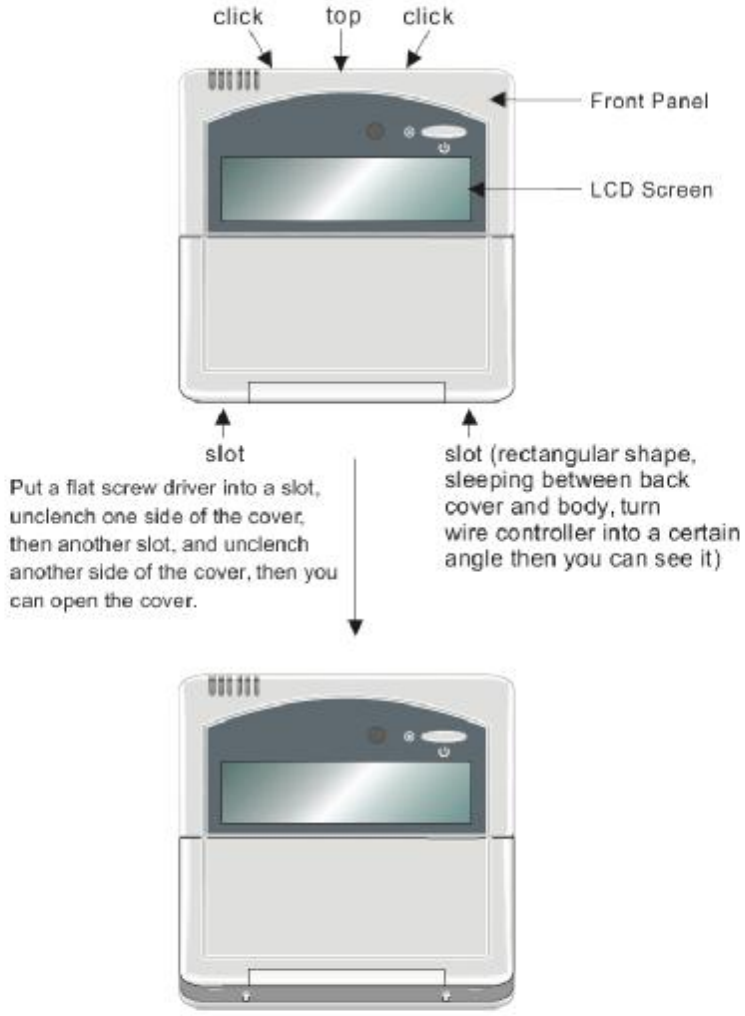


Instruction of symbols on LCD screen
(some symbols may not be displayed in practice)

OPERATION OF AIR CONDITIONER

Installation of Wire Controller

When installing back cover of wire controller, fit the lower back cover into the body, hold on and click the upper part into the body, then push them together. When dismantling the back cover, follow the steps below:



Note: Do not push the front panel of wire controller with force to avoid crushing the LCD screen or internal PCB board.

OPERATION OF AIR CONDITIONER

■ OPERATION WITH WIRE CONTROLLER

1 Run/Stop

- When ON/OFF button is pressed once, the unit starts and the green lamp illuminates.
- When ON/OFF button is pressed again, the unit stops and the red lamp illuminates.

2 Temperature Adjustment

- Every press of "UP ▲" button increases the setting temperature by 1℃, every press of "DOWN ▼" button decreases the setting temperature by 1℃.
- The range of setting temperature is 18-31℃.

3 Fan Speed Adjustment

- Press FAN SPEED button to change the fan speed of indoor unit in the order of (the grey part is flashing):

Low	Medium	High	Auto
			

4 Sleep Selection

- Press SLEEP button once to start sleep function and press it again to stop sleep function.
- Once activating sleep function, the sleep indicator lamp will illuminate on the LCD screen of the wire control, and the fan will run at low speed.

5 Air flow direction adjustment

- Press SWING button to change the air flow directions of indoor unit in the order of (the grey part is flashing):

Auto Swing	Manual Position 1	Manual Position 2	Manual Position 3	Manual Position 4	Manual Position 5
					

OPERATION OF AIR CONDITIONER

6 Operation mode selection

When the unit is at standby state, press MODE button to change its operation modes in the order of:

Cooling	Dehumidifying	Fan	Heating	Auto
				

7 Date/Time Setting

At normal display page, press "TIME" button once to set the Date/Time and meanwhile the beeper raises Bi sound once; press the "TIME" button again to finish the setting and meanwhile the beeper raises Bi sound twice.

8 Timer Operation

- At normal display page, press "TIME ▲" button to set the AUTO-ON timer and meanwhile the lamp ON illuminates, while press "TIME ▼" button to set the AUTO-OFF timer and meanwhile the lamp OFF illuminates
- When setting the timers, press "TIME ▲" or "TIME ▼" to shift the setting items between timer parameter and timer date/time.
- When setting the timers, press "UP ▲" or "DOWN ▼" to change the values of timer parameter and timer date/time.
- Timer parameters:
  00: Invalid timer setting; 01: Valid single-timer; 02: Valid circulated timer.
- When setting the timers, press "TIME" button once to finish the timer setting, and meanwhile the beeper raises Bi sound twice.

9 Light Wave function selection

OPERATION OF AIR CONDITIONER

- Press LIGHT WAVE button once to start light wave function and press it again to stop the function.
- Once activating light wave function, the lamp will illuminate on the LCD screen of the wire control.

10 Fault and temperature inquiry

Every press of ENQUIRY button changes the display pages between "normal display page", "sensor temperature inquiry page", "current fault inquiry page" (if the unit is at fault) and "history fault inquiry page" (if there are faults recorded).

- At sensor temperature inquiry page, press "UP ▲" or "DOWN ▼" button to inquiry the temperatures:
  A0: Room temp.; A1: Indoor coil temp.; A2: Outdoor ambient temp.; A3: Outdoor coil temp.;
- At current fault inquiry page, the lamp FAULT is flashing, and the fault code is shown on the wire control.
- At history fault inquiry page, the lamp FAULT is on, and the fault time, fault code and fault No. are displayed on the wire control.

11 Reset Function

- When the unit is at fault and the lamp is on, press RESET button to unlock the fault lock with a Bi sound indication.
- At history fault inquiry page, press RESET button for 10 seconds to remove the fault record with a Bi sound indication.

12 Unit Parameter Inquiry

- When the unit is off, press SET button for 5 seconds until the beeper raises a Bi sound, and then press SET button again to move into unit parameter inquiry mode (ignore keying in the password).
  At unit parameter inquiry mode, press "TIME ▲" and "TIME▼" to change the parameters to be checked.

OPERATION OF AIR CONDITIONER

13 Unit Parameter modification

- When the unit is off, press SET button for 5 seconds until the beeper raises a Bi sound, and then enter the right password and press SET button again to move into unit parameter modify mode (The word PASS will show up).
  Note: Contact the local dealer for the password.
  At unit parameter modification mode, press "TIME ▲" and "TIME▼" to select the parameters to be changed; press "UP ▲" and "DOWN ▼" to change the parameters; Press RESET button to restore all the parameters to factory setting.

⚠ NOTICE

The parameter modification must be permitted by the manufacturer, otherwise the manufacturer will not be responsible for any problems caused by the modification.

NO.	Parameters	Normal range	Default value	Instructions
01	Room temp. compensation	-5℃~5℃	0℃	
02	Outdoor coil temp. compensation	-5℃~5℃	0℃	"--" means outdoor coil sensor detection is shielded.
03	Coil anti-freezing protection in cooling	-5℃~15℃	-2℃	
04	Coil over-heating protection in heating	50℃~80℃	65℃	
05	Compressor minimum standby time	0~10 mins	3mins	
06	Compressor minimum running time	0~10 mins	3mins	
07	Shielding time of low pressure protection	0~10 mins	3mins	
08	Defrosting time	8~20 mins	8mins	
09	Outdoor coil temp. to end defrosting	8~20 ℃	12℃	
10	Automatic restarting	0/1	0	0: enable; 1:disable
11	Fahrenheit or Celsius temperature	0/1	0	0:Celsius; 1:Fahrenheit
12	12 hours or 24 hours mode	0/1	0	0:24 hours; 1:12hours
13	Mode changing setting	0/1	0	0:On standby or running state, mode changing is available; 1:On running state, mode changing is unavailable;
14	Fan high speed shielding setting	0/1	0	0:Three fan speeds; 1: Shielded high speed
15	Light wave generator/Crankcase heater	0/1	0	0:Light wave generator; 1:Crankcase heater

GUIDE TO PROPER USAGE

Taking care of your unit will allow you to enjoy a more comfortable cooling&heating effect and save more energy.

Clean the air purifying filter periodically

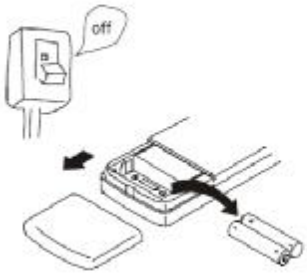
If the air purifying filter becomes clogged with dust/dirt, air flow is restricted and thus reduces cooling&heating efficiency. Please clean the air purifying filter at least once every two weeks.

When cooling, keep away from heat supply objects

During cooling, draw the curtains especially for the windows facing the sun to reduce the incoming heat ; Besides, reduce the frequency of door opening as much as possible.

Switch off the power supply and remove batteries from your remote control, if the air conditioned is not being used for a period of time.

Once the power supply is switched on, the air conditioner will consume electric power even if it does not run. So switching off the power supply can save energy. If the air conditioner is not being used for a period of time, remove batteries from the remote controller as these may leak, causing damage.



Set the room temperature to your suitable point

During cooling, a difference of 5℃ between the indoor and outdoor temperature will suit you better.
During cooling, increase of 1℃ will save energy by 10%.
Too low room temperature will do harm to your health and also wastes energy.

3.1.3 Maintenance

SERVICE AND MAINTENANCE

All the cleaning and maintenance work shall be done by qualified person. Before cleaning or servicing, be sure to stop the operation and turn off the power supply.

Cleaning of the air filter and the indoor unit

Cleaning of the air filter

1.Remove the air inlet grille and air filter.

2.Remove all dust on the front grille and air filters with a vacuum cleaner or brush. (If the dust does not come off easily, wash them with neutral detergent dissolved in warm water below 45℃.)

3.Dry the air filter in the shade, do not parch!

4.Place the air inlet grille and air filter as they were.

Cleaning of the indoor unit

Wipe the indoor unit with a piece of dry , clean cloth.

If you are not using the air conditioner for a long period of time.

Set the fan of the indoor unit going for 3 to 4 hours to dry out the inside thoroughly.

Switch off the air conditioner and unplug it from the wall socket.

Clean the air filters and the indoor unit thoroughly.

Remove the batteries out of the remote controller and put away the remote controller.

Cover the indoor and outdoor unit with shield to keep off the dust.

If you have not used the air conditioner for a long period

Check whether both the air inlet and outlet are blocked.

Check whether the air filters are appropriately mounted.

Check whether the drain pipe is blocked, or if there is twist or terminal lift-up.

3.2 Ceiling Floor Type

GENERAL INSTRUCTIONS

Before Installation:
All installations shall be made as described in these installations and in accordance with all applicable national and local codes including the requirements of local utilities.

⚠ WARNING:

FIRE HAZARD

- Failure to follow safety warnings exactly could result in serious injury or property damage.
- Installation and service must be performed by a qualified installer, service agency or the supplier.
- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

⚠ WARNING:

To avoid the risk of eletrical shock, personal injury or death, disconnect all electrical power to the unit before performing any service or maintenance.

INSTALLATION CHECK

- Wiring should be in conformance with the requirements for power supply department and electrical appliance standards to avoid serious accidents such as f re and electric shocking.
- Power supply cable for this unit should be appropriate, and be equipped with leakage switch.
- Make sure that the size and capacity of switch, fuse and cable are appropriate. Do not use copper threads as alternative for the fuse.
- Power supply plug should be properly connected to the socket, and there should be no part of it exposed to foreign force.
- Make sure that the earth lead is properly connected to earth.
- Firmly fix the indoor unit according to relevant regulations to avoid undesirable accidents as parts of units dropping.

CAUTIONS

1. Do not put finger or rod into the air inlet and outlet to avoid contacting the rotating fan or the live parts to cause electrical shocking hazards.
2. Do not spray pest killer or flammable agents onto the surface of the unit; when cleaning the air conditioner, do not pour water on its body.
3. Do not open the air inlet grid of the indoor unit when the air conditioner is running;
   Do not block the air inlets and outlets of the indoor and outdoor units.
4. When the air donditioner malfunctions, turn off the unit and cut off the power supply immediately, then contact the authorized local service agency. If the air conditioner is repaired by customer himself or unauthorized maintenance service supplier, it is not guaranteed that the unit will be restored to normal condition.
5. When the product is left unattended and unused for a long period of time, unplug it from the wall outlet and disconnect the cable system.

⚠ IMPORTANT:

Installation and servicing of air conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified personnel should service equipment.
When working on air conditioning equipment, observe precautions in the literature and labels attached to the unit and other safe precautions that may apply. Follow all safety codes.
Wear safety glasses and work gloves. Use a quenching cloth for brazing operations. Have a fire extinguisher available for all brazing operations.

3.2.1 Installation

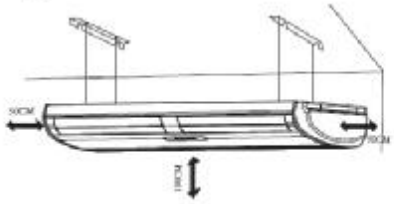
HOW TO INSTALL

INDOOR UNIT INSTALLATION

1. Installation location
   - — places with good ventilation conditions,
   - — wall or ceiling strong and firm enough to install,
   - — places convenient to conduct water drainage,
   - — avoid places exposed to direct sunlight or high temperature,
   - — avoid places exposed to oil fog, steam or flammable gas,
   - — distance between the unit and TV or Audio System should be more than 1 m,
   - — Keep the unit away from equipment emitting high frequency signal such as fluorescent or flashing lamp.

Two ways of installation:

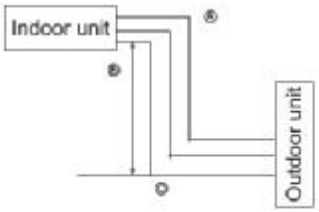
On the ceiling



Note: When install the unit on the ceiling, the front part should be 7 mm higher than the rear part.

On the floor

The height difference between the indoor unit and the outdoor unit, the length of the refrigerant pipes, and the number of pipe bends should all be in conformance with the following requirement.



Type	A: Pipe length (single way)	B: height difference	C: no. of bends (single way)
12/18/24	Max. 20 m	Max. 20 m	Max. 15 pieces
30/36/48/60	Max. 30 m	Max. 30 m	Max. 15 pieces

2. Install the expanding bolts.
   Install the expanding bolts at the right location.
   Note: Required expanding bolts should be prepared by the customers themselves.
3. Install the left/right frames.

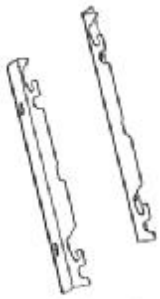
A. Dismantle the air inlet grid kit.
B. Dismantle the left/right cover.
C. Take down the left/right frames from the unit.
D. Fix the left/right frames onto the expanding bolts, and tighten the nuts.

4. Fix the indoor unit.

A. Suspend the unit onto the frames.
B. Tighten the screws.
C. Attach the left/right covers.
D. Attach the air inlet grid kit.

Two ways of hanger installation:

Option 1



Option 2

PIPE INSTALLATION

Caution:

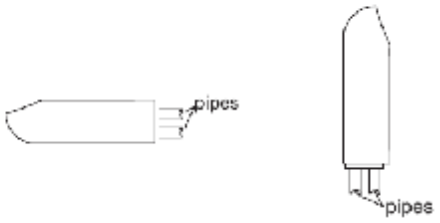
Choose isolation pipe thicker than 9 mm to isolate the copper pipe and avoid condensing.
When installing the drainage pipe, isolate it with isolation pipe thicker than 6 mm to avoid condensing.

1. Material and size of refrigeration and drainage pipe.

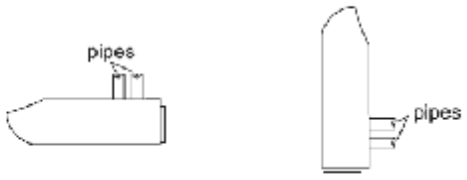
Name	12/18/24	30/36/48/60
Liquid Pipe Refrigeration agent	Copper Outer Diameter 9.52 (3/8")	Copper Outer Diameter 9.52 (3/8")
Drainage Pipe	Copper Outer Diameter 15.88 (5/8")	Copper Outer Diameter 19.05 (3/4")

2. Location of refrigeration agent pipes and drainage pipe of indoor unit. The pipes connected with indoor unit should be connected as following.

When the pipes are led out from the rear side of indoor unit.



— When the pipes are led out from the bottom of indoor unit.



Note: The mode of pipes leading out is related to installation mode of indoor unit.

3. Connection of refrigeration agent pipes.

A. Dismantle the air inlet grid kit of indoor unit.

B. Keep the original status of closing of gas valve and liquid valve of the outdoor unit.

Dismantle the nuts, anti-dust cap and piping screw plugs from the indoor and outdoor pipes respectively, and connect horns of the pipes at the mean time (avoid dust, moisture, and other things getting into the pipes.)

— Smear a thin layer of seal oil on the matching surface of the horns and the connectors before fix the horn nuts.

— When tightening the nuts, firstly push the horn onto the cone surface of the connector, and keep the leading pipe and the connector in the same axis, then gradually turn the cone nuts clockwise tightly with hands, and then tighten it with a wrench.

When tightening the nuts with wrench, apply torque according to the right list, if it is not tightened enough, leakage of refrigeration agent may happen, but if it is too tight, the horn surface may be damaged.

Outer Diameter of Copper Pipe (mm)	Turning Torque (N.M)
9.52	35-40
15.88	73-78
19.05	98-130

C. Complete the horns connection in sequence, to finish connection of all the refrigeration agent pipes.

— The bending angle of the pipes should not be less than 90 degree, bending radius should not be less than 100 mm, and bending times should not exceed 3 times.

— After finishing connection of all pipes, use a tester of soap to check if there is leakage in the pipes.

The connection part of the pipes should be covered with isolation sleeves, to avoid water condensing at these positions, offsetting the isolation sleeves for gas and liquid pipes.

D. Suction the air out from the maintenance opening of the pipe by a vacuum pump, to form vacuum inside the pipes.

E. After finishing the above operation, open both the gas valve to let the indoor and outdoor pipes openly connected.

4. Refrigeration agent quantity control.

Caution:

Do not try to exhaust the air inside the pipes by refrigeration agent in the outdoor unit.

When compensating refrigeration agent, please use the filling port on the gas valve of the outdoor unit.

When the pipe length is less than 5 m, it is not necessary to compensate agent; When the pipe is longer than 5 m, please compensate agent as following:

Adding amount=(Pipe length-5)xA;
For models of 12,18, A=30g;
For models of 24,30,36,48,60, A=50g.

5. Installation of drainage pipe of the indoor unit.

The pipe should tilt downwardly from the indoor unit, and make sure there is no water accumulation inside it.

The connection part of the pipe should be tightened to avoid water leakage.

Do not put the pipe onto the sewage pitch with sulphuration gas or odor.

6. Acknowledgment of water draining of the indoor unit.

— When the drainage pipe is installed, make sure that there is no water leakage.

When pouring water into the unit to check the pipe, fill from side plate of the heat exchanger.

Note:

— *For cooling /heating type, there is condensed water produced in the outdoor unit when heating, install a drainage pipe at its bottom cover by: push the drainage pipe connector onto the drainage port at the bottom of the outdoor unit, with the direction that bigger end of the connector towards the drainage pipe onto the smaller end of the connector.*

— *The connector is placed in package tray of the outdoor unit, the drainage pipes should be prepared by the customers themselves.*

ELECTRICAL WIRING

Caution:

Apply appropriate power supply equipped with leakage switch.

When the power supply is wrongly connected, the compressor will not start.

Electrical connection should be made to the unit according to local code and ordinances. Locally prepare a fan-switch and a terminal strip to be mounted on unit. Referring to wiring diagram adhered on unit.

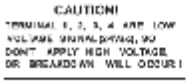
Indoor Unit

1. Dismantle the air inlet grid and wiring box cover.
2. Connect the power supply cable and signal cable into the connectors. Please take the wiring diagram on the machine as final reference.
3. Fix the connected cables with wire clampers, positioning sticker, stripes, etc.
4. After wiring, Install the dismantled parts to their original state.

Explanation of the DIP jumps on the indoor mainboard

⚠ Notice

The way to judge 24V or 220V outdoor unit control mode:
If the right warning label is shown on the terminal board, then it is 24V outdoor unit control mode; If not, it is 220V outdoor unit control mode.



For 2 digits switches

	No.	Setting items	DIP1	DIP2	Consequence	Remark
	1	Model type setting	ON	---	Cooling only type	
			OFF	---	Heat pump type	
	2	Communication mode	—	ON	Wave communication	**For 24V outdoor unit control mode, only ON position can be selected.**
			—	OFF	Level communication	

For 4 digits switches

No.	Setting items	DIP1	DIP2	DIP3	DIP4	Consequence
1	Drainage pump function setting	OFF	OFF	ON	--	With drainage pump
		OFF	OFF	OFF	--	Without drainage pump
2	Light-wave generator or crankcase heater	OFF	OFF	---	ON	Equipped
		OFF	OFF	---	OFF	Unequipped

Outdoor Unit

1. Dismantle the maintenance plate on the right side of the unit.
2. Loosen the screws of the wire clamper, then take down the clamper.
3. Connect power cables and signal cables to the connector as wiring diagram on the unit.
4. Re-install the dismantled parts to their original state.

Explanation of the DIP jumps on the outdoor mainboard

No.	Setting items	DIP1	DIP2	Consequence	
1	Model type setting	ON	---	Cooling only type	
		OFF	---	Heat pump type	
2	Communication mode	---	ON	Wave communication	**For 24V outdoor unit control mode, only ON position can be selected.**
		---	OFF	Level communication	

Note: Renew the power supply to the unit when the jump setting is finished.

Connecting and layout of the power supply cable

— Related parameters are as following:

Unit (mm^2)

Nominal cooling capacity(Btu/h)	Indoor unit power cable	Outdoor unit power cable	Outdoor and indoor unit connecting cable (220V outdoor unit control)			Outdoor and indoor unit connecting cable (24V outdoor unit control)	
			Cooling only	Heat pump	Heat pump (sensor connecting cable)	Cooling only	Heat pump
12000(single phase)	3G1.5	---	3x1.5	5x1.5	2x0.5	2x0.75	4x1.0
18000(single phase)	3G2.5	---	3x2.5	5x2.5	2x0.5	2x0.75	4x1.0
24000(single phase)	3G1.0	3G2.5	2x0.75	4x1.0	---	2x0.75	4x1.0
24000(three phases)	3G1.0	5G2.5	2x0.75	4x1.0	---	2x0.75	4x1.0
36000(single phase)	3G1.0	3G4.0	2x0.75	4x1.0	---	2x0.75	4x1.0
36000(three phases)	3G1.0	5G2.5	2x0.75	4x1.0	---	2x0.75	4x1.0
42000(single phase)	3G1.0	3G4.0	2x0.75	4x1.0	---	2x0.75	4x1.0
42000(three phases)	3G1.0	5G2.5	2x0.75	4x1.0	---	2x0.75	4x1.0
48000(single phase)	3G1.0	3G6.0	2x0.75	4x1.0	---	2x0.75	4x1.0
48000(three phases)	3G1.0	5G2.5	2x0.75	4x1.0	---	2x0.75	4x1.0
60000(single phase)	3G1.0	3G6.0	2x0.75	4x1.0	---	2x0.75	4x1.0
60000(three phases)	3G1.0	5G4.0	2x0.75	4x1.0	---	2x0.75	4x1.0

Note: — The numbers in the above table are based on independent power supply of indoor and outdoor unit.

— The provided cable sizes in the above table can apply to 24 VAC or 220 VAC outdoor unit control mode.

— The wiring should be handled by certified electrican, and should be in conformance with regulations of the local power supply department and electrical appliances standards.

Both the indoor unit and outdoor unit should be properly connected to earth.

Environment conditions should be taken into account (ambient temperature, direct sunshine).

The wire dimensions are minimum values for metal-core wires. Consider the voltage loss, and use power supply core of a higher grade.

If power supply lines are damaged, it is required to contact our appointed maintenance department for replacement by special cord.

HOW TO OPERATE

UNIT OPERATION

Auto-On/Off Timer Operation

AUTO-ON/OFF timer operation set

A. Press button when the air conditioner is on to initiate the AUTO-OFF TIMER function.

Meanwhile, ○ of ◴→○ starts to flash on the display.

Press button when the air conditioner is off to initiate the AUTO-ON TIMER function.

Meanwhile, | of ◴→| starts to flash on the display.

B. Each press of button or increases the AUTO-ON/OFF time by one hour (12 hours at most) and the digits of AUTO-ON/OFF time will appear on the display.

C. Press button SET to set the AUTO-ON/OFF time. The | or ○ will stop flashing on the remote controller display.

AUTO-ON/OFF timer operation cancellation

A. If you want timer operation cancelled, press button CANCEL until the digits of AUTO-ON/OFF time and ◴→○ or ◴→| disappear on the remote controller display.

Note:

— *TIMER ON/OFF operation must be set again after a power failure.*

Once the AUTO-ON/OFF time is fixed, if you want to change it, you should cancel the previous AUTO-ON/OFF timer operation.

— *If you press the button SET once incautiously after the AUTO-ON/OFF time is fixed, the system will count time anew based on the current display time.*

Operation Mode Adjustment

AUTO mode

In this mode, the air conditioner can be adjusted to the most comfortable room temperature automatically. At the start of operation, the air conditioner will select one operation mode according to the room temperature. The following table shows the conditions which are set at start up.

Room Temperature (RT)	Selected mode
RT≤ 20℃	Heating (For cooling only type, dehumidifying mode is selected)
20℃ < RT < 24℃	Fan
RT≥ 24℃	Cooling

COOL mode

Press MANUAL SWING or SWING button to change air flow direction.

Press FAN SPEED button to change the fan speed of indoor unit.

Press TEMPERATURE ADJUSTMENT button to change the set temperature between 16 to 31℃.

DRY mode

In this mode, the air conditioner automatically sets the room temperature and this temperature will not appear on display.

TEMPERATURE ADJUSTMENT button and FAN SPEED button are unavailable.

Press MANUAL SWING or SWING button to change air flow direction.

FAN mode

In this mode, the outdoor unit does not operate. The indoor fan alone operates.

Press MANUAL SWING or SWING button to change air flow direction.

Press FAN SPEED button to change the fan speed of indoor unit.

HEAT mode

Press MANUAL SWING or SWING button to change air flow direction.

Press FAN SPEED button to change the fan speed of indoor unit.

Press TEMPERATURE ADJUSTMENT button to change the set temperature between 16 to 31℃.

SLEEP mode

Sleep mode in cooling and drying running

A. The indoor fan runs at low speed.

B. After one hour of operation, the set temperature will increase by 1℃.

One hour later, the set temperature will increase by 1℃ once more.

The unit will then continue operating at 2℃ above the set temperature.

Sleep mode in heating running

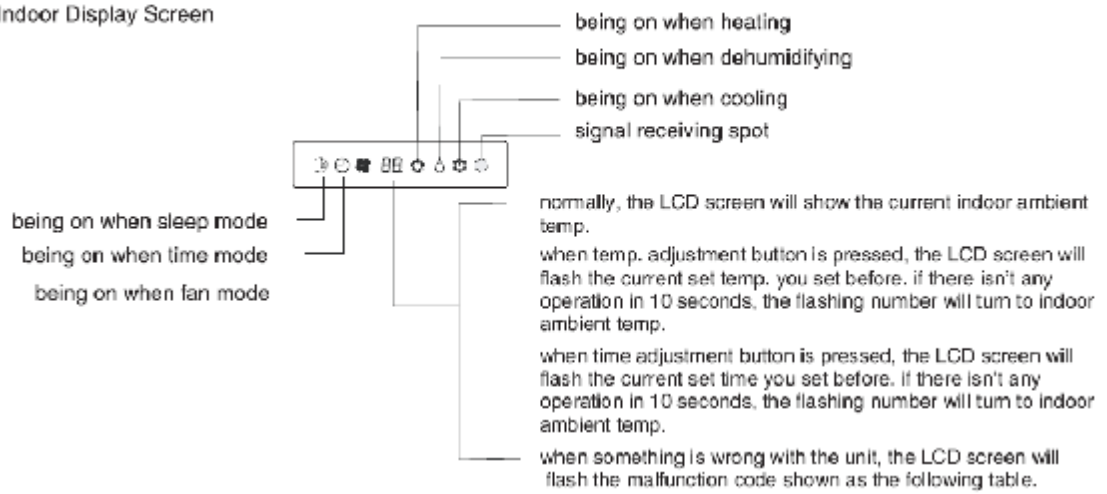
A. The indoor fan runs at low speed.

B. After one hour of operation the set temperature will decrease by 2℃.

One hour later, the set temperature will decrease by 2℃ once more.

The unit will then continue operating at 4℃ below the set temperature.

Indoor Display Screen



Malfunction codes table of the above LCD screen

Malfunction codes on the LCD screen				
No.	Malfunction codes	Malfunctions	Cause	Treatment
1	A0	Power supply malfunction	Fault phase or short of phase.	Find the reason then correct the wiring.
2	C0	Communication of wire control malfunction	Wire control is not well connected.	Connect the wire control firmly.
3	C1	Communication between indoor and outdoor unit malfunction	Indoor unit and outdoor unit are out of communication	Contact local service center.
4	E1	Indoor ambient temp. sensor malfunction	The sensor is abnormal.	Cut off power supply, check whether the sensor is well connected, if so, replace the abnormal sensor.
5	E2	Indoor coil temp. sensor malfunction	The sensor is abnormal.	Cut off power supply, check whether the sensor is well connected, if so, replace the abnormal sensor.
6	E4	Outdoor coil temp. sensor malfunction	The sensor is abnormal.	Cut off power supply, check whether the sensor is well connected, if so, replace the abnormal sensor.
7	H1	Outdoor unit protection alarm	Outdoor unit is at fault	Find the cause as the flashing mode of the lamp on outdoor unit mainboard
8	H2	Compressor high pressure /overload protection alarm	Outdoor temperature is too high; air inlet or outlet is blocked; air filter is very dirty.	Find out the cause and fix it.
9	H3	Compressor low pressure protection alarm	Outdoor temperature is too low; refrigerant has leaked too much; suction pressure drops rapidly when collecting refrigerant to outdoor unit.	Find out the cause and fix it.
10	P1	Indoor coil anti-freeze protection when cooling	System protection	Automatic recovery
11	P2	Indoor coil over-heated protection when heating	System protection	Automatic recovery
12	P3	Outdoor coil over-heated protection when cooling	System protection	Automatic recovery
13	FF	Unit running failure	System protection	Restart the unit.
14	P6	Prevention of cold air protection when heating	System protection	Automatic recovery
15	P7	Defrosting protection when heating	System protection	Automatic recovery
16	P8	Working indication of crankcase heater	System protection	Automatic recovery
17	CF	Indication to clean filter	Filter mesh is dirty.	Cut off the power, and then clean the filter.

Note: When wire controller is in use, the above malfunction codes will be shown on its LCD screen. Moreover, the wire controller can also receive remote signal from remote controller.

Indication of malfunction on outdoor unit mainboard

No.	Malfunctions	Flash mode of the lamp
1	Power supply malfunction	Flash 1 time and then suspend for 3 seconds in a circle.
2	Outdoor coil temp. sensor malfunction	Flash 4 times continuously and then suspend for 3 seconds in a circle.
3	Compressor overload protection alarm	Flash 5 times continuously and then suspend for 3 seconds in a circle.
4	Compressor high pressure protection alarm	Flash 6 times continuously and then suspend for 3 seconds in a circle.
5	Compressor low pressure protection alarm	Flash 7 times continuously and then suspend for 3 seconds in a circle.
6	Compressor outdoor protection alarm	Flash 8 times continuously and then suspend for 3 seconds in a circle.

Emergency mode

When the controller malfunctions, there is an emergency pushbutton on the indoor main control board which can control the machine.

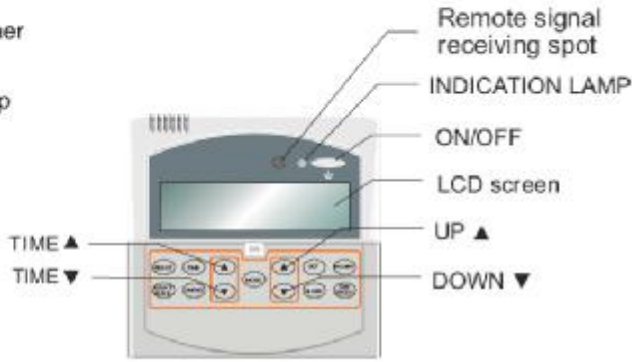
Each time you press the pushbutton, the air conditioner responses in the following sequence:

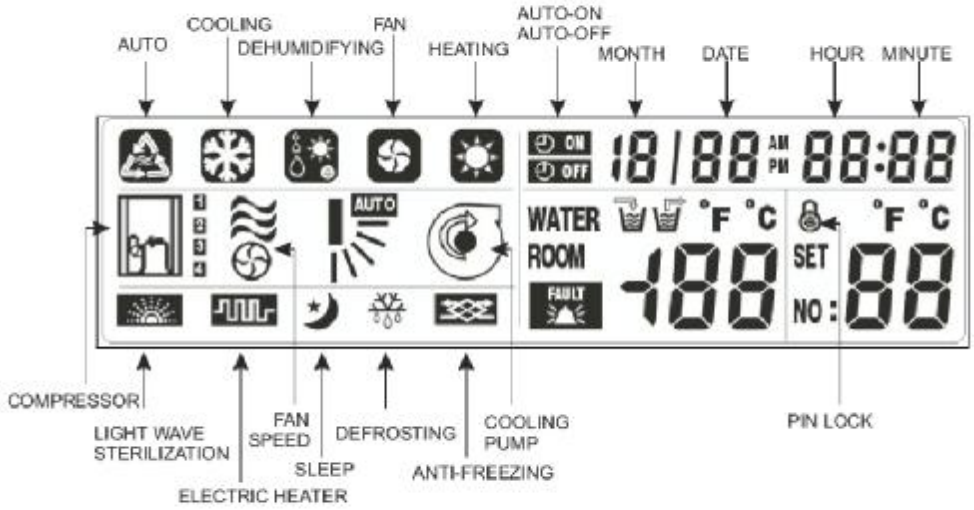
forced AUTO mode → forced COOL mode → stop

Note:

When wire controller is in use, the emergency button is unavailable unless you take off the wire controller interface, cut off and restore the power supply.

WIRE CONTROLLER (OPTIONAL)

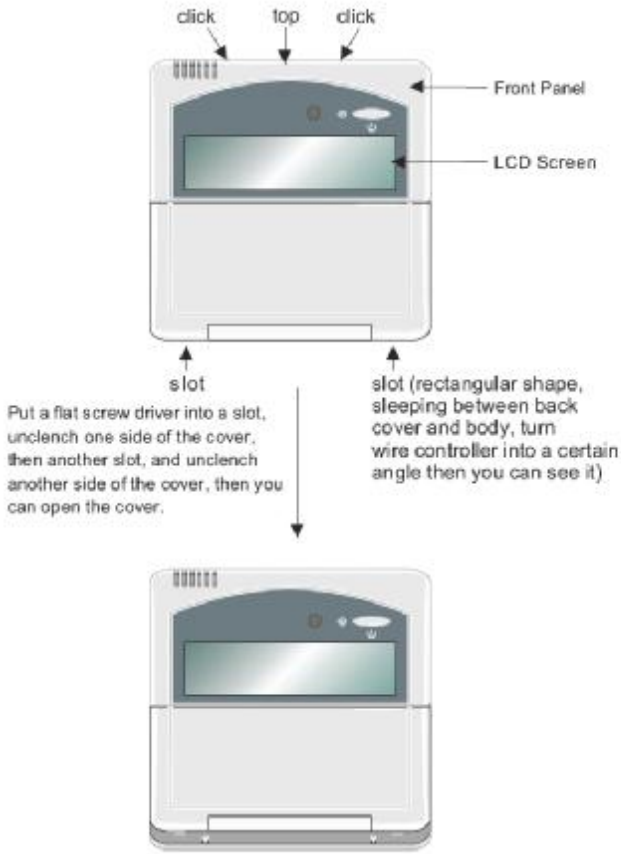




Instruction of symbols on LCD screen
(some symbols may not be displayed in practice)

Installation of Wire Controller

When installing back cover of wire controller, fit the lower back cover into the body, hold on and click the upper part into the body, then push them together.
When dismantling the back cover, follow the steps below:



Note: Do not push the front panel of wire controller with force to avoid crushing the LCD screen or internal PCB board.

■ OPERATION WITH WIRE CONTROLLER

1 Run/Stop

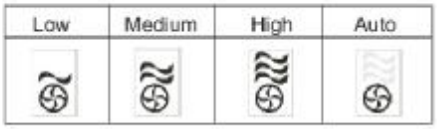
- When ON/OFF button is pressed once, the unit starts and the green lamp illuminates.
- When ON/OFF button is pressed again, the unit stops and the red lamp illuminates.

2 Temperature Adjustment

- Every press of "UP ▲ " button increases the setting temperature by 1℃, every press of "DOWN ▼ " button decreases the setting temperature by 1℃.
- The range of setting temperature is 18-31℃.

3 Fan Speed Adjustment

- Press FAN SPEED button to change the fan speed of indoor unit in the order of (the grey part is flashing):

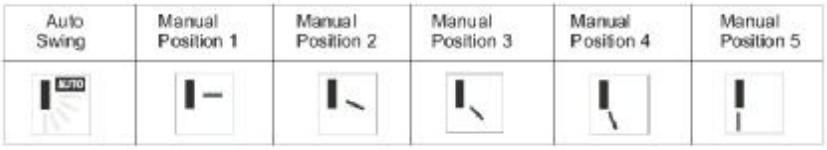


4 Sleep Selection

- Press SLEEP button once to start sleep function and press it again to stop sleep function.
- Once activating sleep function, the sleep indicator lamp will illuminate on the LCD screen of wire control, and the fan will run at low speed.

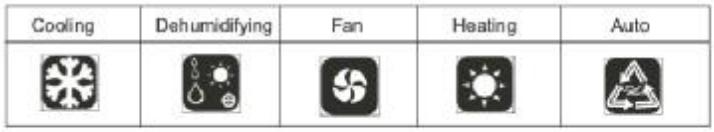
5 Air flow direction adjustment

- Press SWING button to change the air flow directions of indoor unit in the order of (the grey part is flashing):



6 Operation mode selection

When the unit is at standby state, press MODE button to change its operation modes in the order of:



7 Date/Time Setting

At normal display page, press "TIME" button once to set the Date/Time and meanwhile the beeper raises Bi sound once; press the "TIME" button again to finish the setting and meanwhile the beeper raises Bi sound twice.

8 Timer Operation

- At normal display page, press "TIME ▲" button to set the AUTO-ON timer and meanwhile the lamp ON illuminates, while press "TIME ▼" button to set the AUTO-OFF timer and meanwhile the lamp OFF illuminates
- When setting the timers, press "TIME ▲" or "TIME ▼" to shift the setting items between timer parameter and timer date/time.

- When setting the timers, press "UP▲" or "DOWN▼" to change the values of timer parameter and timer date/time.
- Timer parameters:
  00: Invalid timer setting; 01: Valid single-timer; 02: Valid circulated timer.
- When setting the timers, press "TIME" button once to finish the timer setting, and meanwhile the beeper raises Bi sound twice.

9 Light Wave function selection

- Press LIGHT WAVE button once to start light wave function and press it again to stop the function.
- Once activating light wave function, the lamp will illuminate on the LCD screen of the wire control.

10 Fault and temperature inquiry

Every press of ENQUIRY button changes the display pages between "normal display page", "sensor temperature inquiry page", "current fault inquiry page" (if the unit is at fault) and "history fault inquiry page" (if there are faults recorded).

- At sensor temperature inquiry page, press "UP ▲" or "DOWN ▼" button to inquiry the temperatures:
  A0: Room temp.; A1: Indoor coil temp.; A2: Outdoor ambient temp.; A3: Outdoor coil temp.;
- At current fault inquiry page, the lamp is flashing, and the fault code is shown on the wire control.
- At history fault inquiry page, the lamp is on, and the fault time, fault code and fault No. are displayed on the wire control.

11 Reset Function

- When the unit is at fault and the lamp is on, press RESET button to unlock the fault lock with a Bi sound indication.
- At history fault inquiry page, press RESET button for 10 seconds to remove the fault record with a Bi sound indication.

12 Unit Parameter Inquiry

- When the unit is off, press SET button for 5 seconds until the beeper raises a Bi sound, and then press SET button again to move into unit parameter inquiry mode (ignore keying in the password). mode (ignore keying in the password).
  At unit parameter inquiry mode, press "TIME ▲" and "TIME▼" to change the parameters to be checked.

13 Unit Parameter modification

- When the unit is off, press SET button for 5 seconds until the beeper raises a Bi sound, and then enter the right password and press SET button again to move into unit parameter modify mode (The word PASS will show up).

  Note: Contact the local dealer for the password.

  At unit parameter modification mode, press "TIME ▲" and "TIME▼" to select the parameters to be changed; press "UP ▲" and "DOWN ▼" to change the parameters; Press RESET button to restore all the parameters to factory setting.

⚠ NOTICE

The parameter modification must be permitted by the manufacturer, otherwise the manufacturer will not be responsible for any problems caused by the modification.

NO.	Parameters	Normal range	Default value	Instructions
01	Room temp. compensation	-5℃~5℃	0℃	
02	Outdoor coil temp. compensation	-5℃~5℃	0℃	"--"means outdoor coil sensor detection is shielded.
03	Coil anti-freezing protection in cooling	-5℃~15℃	-2℃	
04	Coil over-heating protection in heating	50℃~80℃	65℃	
05	Compressor minimum standby time	0~10 mins	3mins	
06	Compressor minimum running time	0~10 mins	3mins	
07	Shielding time of low pressure protection	0~10 mins	3mins	
08	Defrosting time	8~20 mins	8mins	
09	Outdoor coil temp. to end defrosting	8~20 ℃	12℃	
10	Automatic restarting	0/1	0	0: enable; 1: disable
11	Fahrenheit or Celsius temperature	0/1	0	0:Celsius; 1:Fahrenheit
12	12 hours or 24 hours mode	0/1	0	0:24 hours; 1:12 hours
13	Mode changing setting	0/1	0	0:On standby or running state, mode changing is available; 1:On running state, mode changing is unavailable;
14	Fan high speed shielding setting	0/1	0	0:Three fan speeds; 1: Shielded high speed
15	Light wave generator/Crankcase heater	0/1	0	0:Light wave generator; 1:Crankcase heater

3.2.3 Maintenance

CARE AND MAINTENANCE

For continued high performance, and to minimize the risk of equipment failure, it is essential that periodic maintenance be performed on this unit. The ability to properly perform maintenance on this unit requires certain mechanical skills and tools. If you do not possess these skills, contact your dealer for maintenance. Consult your local dealer as to the availability of a maintenance contract. Proper maintenance is most important to achieve the best performance from the unit. At a minimum, this maintenance should include the following items.

1. Make sure that there is no blockage materials at the exhaust of the indoor unit and the outdoor unit.
2. Make sure that the protection cover on the outdoor unit has been removed.
3. Make sure that the ground wire has been properly connected.
4. Make sure that there is no condition as bending, lifting, or blocking in the drainage flexible pipe.
5. Make sure that the filter has been properly installed. If the air conditioner runs without this filter, dust or other things may get into it and cause damages.
6. Inspect electrical connections for tightness at the beginning of each operation season. Service as necessary.

Optimum Operation Methods

The temperature in the room should be set so that it is comfortable in it.

When cooling, it would be comfortable when the difference of temperature between indoor and outdoor is less than 5°C.

— When cooling, each 1°C increased in temperature setting, about 10% of the power consumption will be saved.

— It is harmful for your health, and power wasting if you set the temperature too low.

When cooling, do not let sunlight get into the room.

— When cooling, the window facing the sun should be covered with curtain to minimize the heat of sunlight getting into the room. In addition, minimize the times of opening and closing the door.

Periodically clean the dust filter.

— Filter blockage will reduce the recycled air volume, which will affect the efficiency of cooling/heating, and even cause air-conditioner malfunction. If the air conditioner has stopped for a long term, clean the filter before starting it.

⚠ WARNING:

Use caution when removing parts from this unit. Personal injury can result from sharp metal edges present in all equipment of sheet metal construction.

⚠ IMPORTANT:

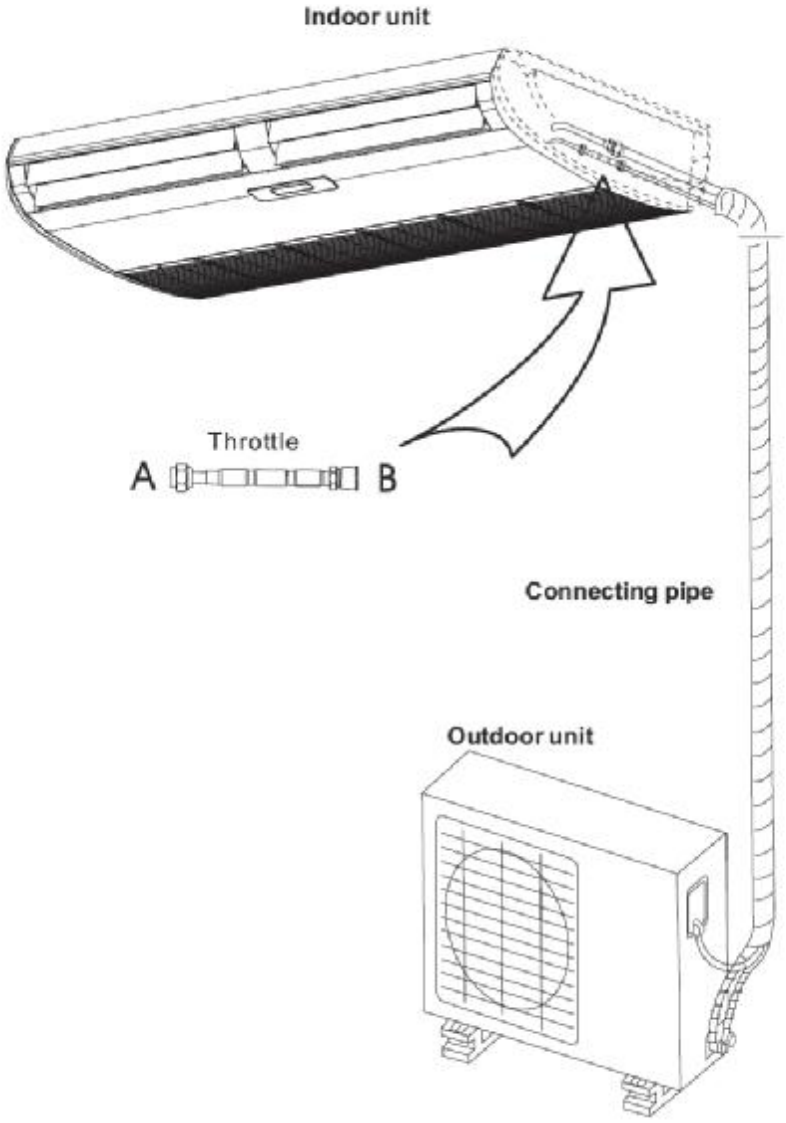
Installation and servicing of air conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified personnel should service equipment.

When working on air conditioning equipment, observe precautions in the literature and labels attached to the unit and other safe precautions that may apply. Follow all safety codes.

Wear safety glasses and work gloves. Use a quenching cloth for brazing operations. Have a fire extinguisher available for all brazing operations.

⚠ WARNING:

To avoid the risk of eletrical shock, personal injury or death, disconnect all electrical power to the unit before performing any service or maintenance.



1. Take off the end covers of the throttle device, then check if the thread and flare of the joints are in good condition, and then connect A section to the liquid pipe of the indoor unit, and connect B section to the connecting pipe.
2. After installing the throttle device and verifying there is no leakage, then use a damping block to cover the throttle device and tie it up, to avoid condensate water producing.

3.3 Duct Type (Low/Medium/High E.S.P)

3.3.1 Installation

INSTALLATION

Read SAFETY PRECAUTIONS thoroughly before installation.
Follow this owner's manual for installation.
Read the labels carefully before installation.

⚠ WARNING

1. Do not install by yourself. Installation of the air conditioner requires specialized knowledge and skills. Please consult the manufacturer or authorized professionals to carry out installation.
2. All the structural modification for installation must comply with local constructional standards.
3. The ceiling must be solid enough to bear the weight of the unit.
4. Cables must be selected designated or up to the standard.
5. All the appliance operation must be done by approved technicians.
6. Keep aware of safety during installation.
7. Do not switch on the power supply before installation completion.
8. Ensure good ventilation in case of refrigerant leakage to prevent the concentration of leaking refrigerant exceeding safety norm.

⚠ NOTICE

1. After installation, the erectors must tell the user correct usage and maintenance method, also advise the user to keep good of this manual for future reference.
2. Never to install the unit at place with an oily ambient or where vitriolic fog occurs. Otherwise, it will greatly degrade the unit performance or damage the inner parts.
3. Fuse must be selected with rated capacity.
4. Ensure installation of one grounded current leakage breaker.
5. Ensure installation of one grounded wire.
6. If the unit is installed on the metal part of the building, it's necessary to do electric insulation that must comply with the relative technical standards of electrical equipment.

PREPARATION BEFORE INSTALLATION

CHECK POINTS

INSTALLATION

- Confirm unit model, name to avoid mistaken installation.

REFRIGERANT TUBE

- Refrigerant tube must be selected designated with approved diameter.
- Refrigerant tube must be dealt with heat insulation.

AIR EXHAUST

- Empty the air inside the connecting tube by vacuum pump and refrigerant jar or refrigerant of the outdoor unit.

SUPPLEMENT OF THE REFRIGERANT

- If the tube is longer than standard length, add the refrigerant for each outdoor unit according to the actual tube length.

ELECTRICAL WIRING

- Charge the indoor unit after vacuum extraction.

INSTALLATION

LOCATION REQUIREMENTS

LOCATION OF THE INDOOR UNIT

1. Enough space and maintenance space must be left.
2. The ceiling must be solid and firm enough to bear the weight of the indoor unit.
3. No obstruction for air inlet/outlet and minimum influence imposed by strong wind.
4. No smoke, fire and other heat supply objects below or harmful pollution.
5. Airflow could be delivered to every part of the room.
6. Convenient for installation.

Notice: Do not install the unit at the following occasions that may result in unit malfunction. If inevitable, please consult the local designated service centre.

1. Greasy area where cutting engine oil or other mineral oil occurs.
2. Salty place such as coastal area.
3. Hot spring area or other places where sulphuric gas or other corrosive gas is present.
4. Factories where power supply seriously fluctuates.
5. Car or cabin where great shake and tremble occurs.
6. Place where strong electromagnetic wave occurs.
7. Kitchen or other place full of oily smoke.
8. Places that evaporate acidic or alkaline gas.
9. Other special environment.

INSTALLATION OF THE INDOOR UNIT

NOTES FOR USERS

- The voltage of power supply must be within 90%-110% of the rated voltage agreeing with the nameplate.
- Current leakage detection device or air switch must be installed with their capacity 1.5 times of the maximum current.
- Be sure to select specified circuit and this unit is grounded through the power cord plug when plugged into a matching wall outlet.
- Be sure to use designated fuse or breaker.
- Wiring must be done by qualified electricians and comply with electrical safety requirements.
- Be sure the air conditioner is properly grounded. The main power switch must be equipped with reliable grounding cord. Do not pull the power cord. Power cord should be replaced by product manufacturer or similarly qualified professionals.

INSTALLATION

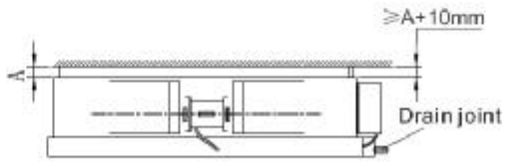
ATTENTION

- Please install the unit firmly, if not, it will cause abnormal noise and shake.
- Install the outdoor unit at place where the noise and hot vapor at the air outlet will not annoy your neighbours.
- If any abnormal noise occurs, call the service shop.
- Please consult the shop where you bought the air conditioner if relocation is necessary for moving.

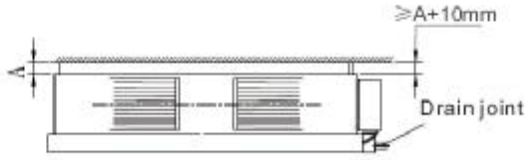
INSTALLATION OF THE INDOOR UNIT

1. Hang of the indoor unit

- Ensure the shortest system pipeline and install the indoor unit at the centre part of the room.
- Ensure the top hanger rod solid and strong enough to bear the weight of the indoor unit. Position the hanger rod and fix it until it aims at the hang hole. (Please see unit dimension diagram for hanger rod position)
- Check if the unit is horizontally placed and set the drain grade as the following dimension. (drain grade>1/100)



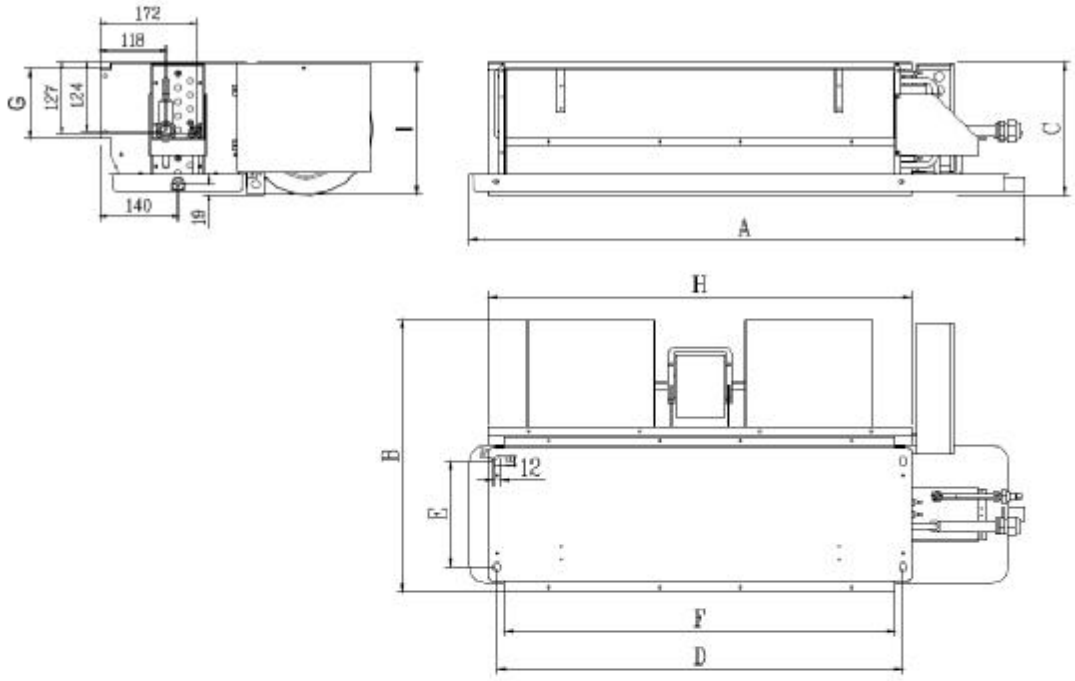
Low static pressuretype



Medium, high staticpressure type

INSTALLATION

DIMENSION OF LOW STATIC PRESSURE TYPE

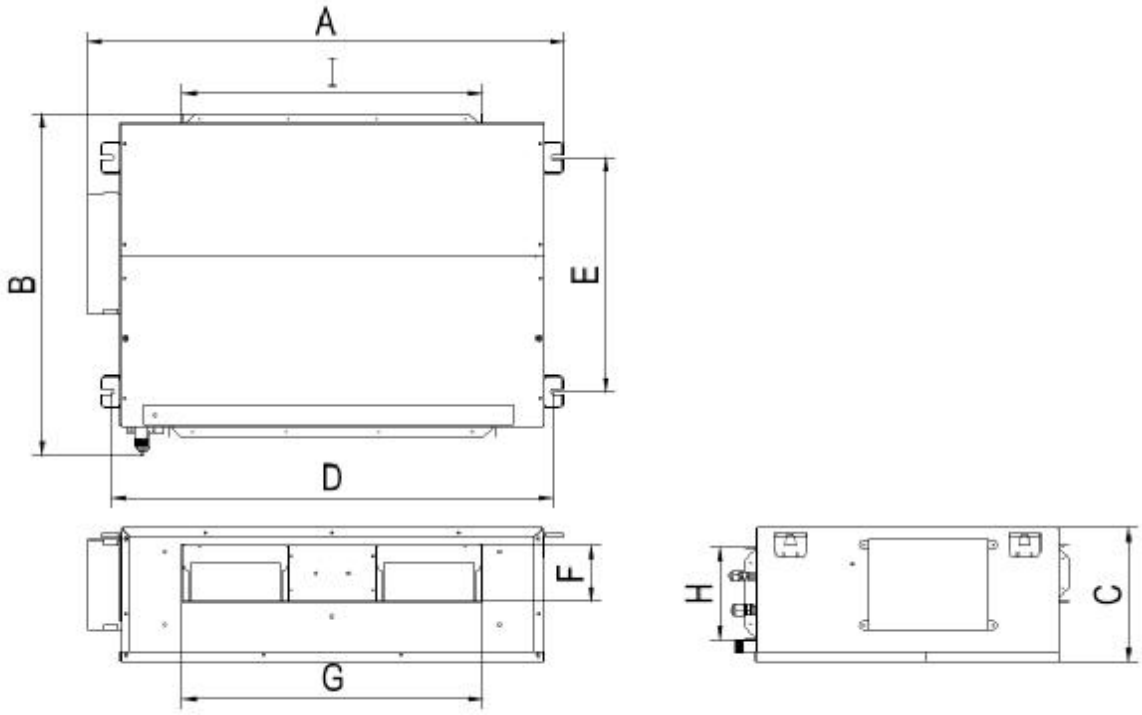


Unit: mm

CODE / MODEL	Figure Dimension			Installation Dimension		Air Outlet Dimension		Air Inlet Dimension	
	A	B	C	D	E	F	G	H	I
12K	815	490	240	515	190	487	127	485	238
18K	1000	490	240	730	190	702	127	760	238
24K	1130	490	240	830	190	802	127	800	238
36K 42K	1715	490	240	1415	190	1387	127	1445	238

INSTALLATION

DIMENSION OF MEDIUM STATIC PRESSURE TYPE

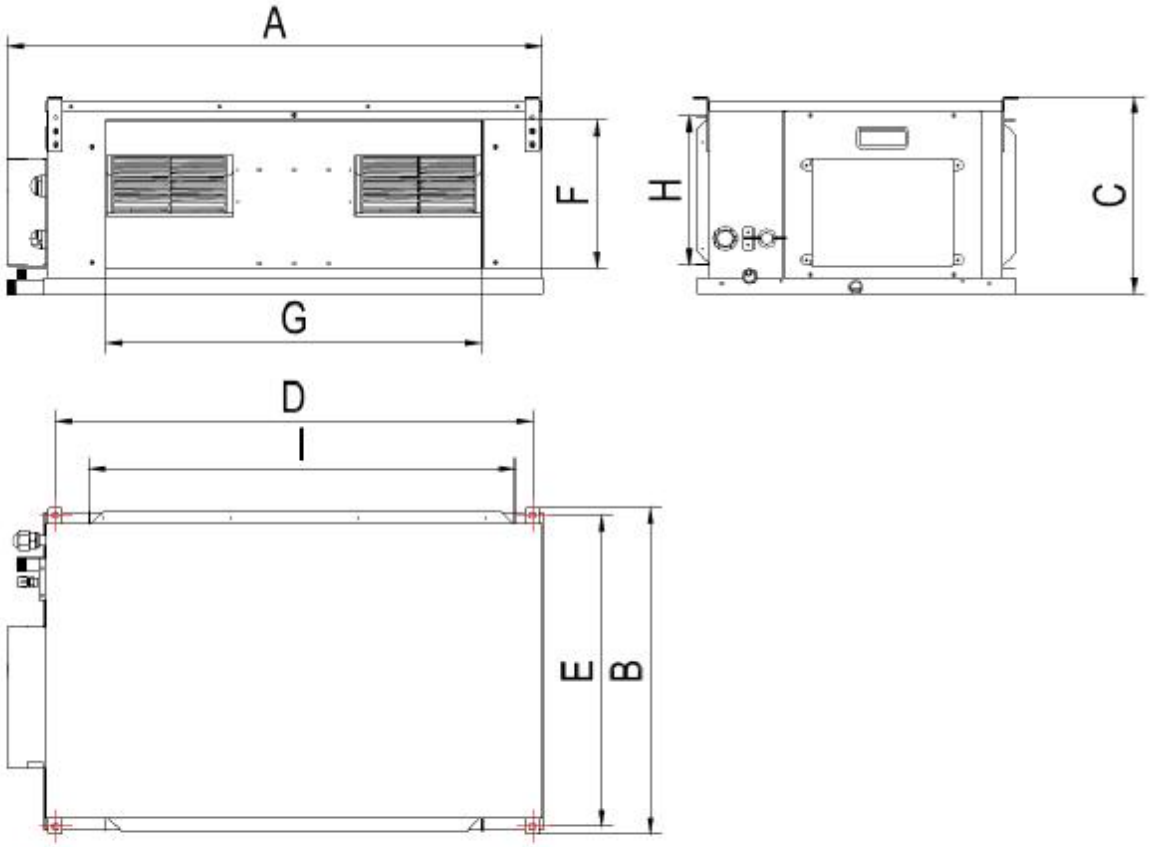


Unit: mm

CODE / MODEL	Figure Dimension			Installation Dimension		Air Outlet Dimension		Air Inlet Dimension	
	A	B	C	D	E	F	G	H	I
18K	850	745	250	773	515	112	544	168	539
24K 36K	1055	755	295	974	517	126	662	204	724
42K 48K 60K	1385	830	312	1305	595	115	742	230	982

INSTALLATION

DIMENSION OF HIGH STATIC PRESSURE TYPE



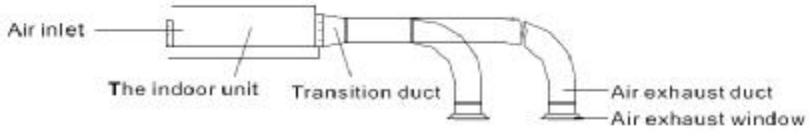
Unit: mm

CODE / MODEL	Figure Dimension			Installation Dimension		Air Outlet Dimension		Air Inlet Dimension	
	A	B	C	D	E	F	G	H	I
36K 42K	1010	615	370	898	586	280	710	280	800
48K 60K	1130	615	415	1016	586	305	725	325	925

INSTALLATION

2. LOCATION OF THE AIR EXHAUST DUCT

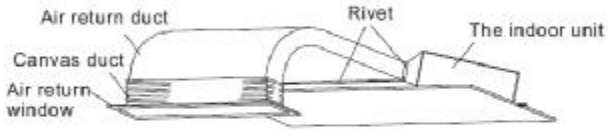
- Usually contains two types: square and round duct.
- The square duct can be directly connected to the air outlet of the indoor unit by rivet.
- The round duct can be connected to the air outlet of the indoor unit by adding one transition duct with its length of no less than 0.6m. The other end could be connected to the air exhaust window. As shown below, all the fan speed of the air outlet should be regulated identically to satisfy the air conditioning requirements.



3. INSTALLATION OF THE AIR RETURN DUCT

- Air return duct is necessary for the air inlet from side, connect one end to the air return mouth of the indoor unit by rivet, the other end can be connected to the air return window.
- Make one folded section of canvas duct as connection of air return mouth and air return window, which will facilitate the adjustment according to the ceiling height, and also prevent ceiling shake during unit operation.

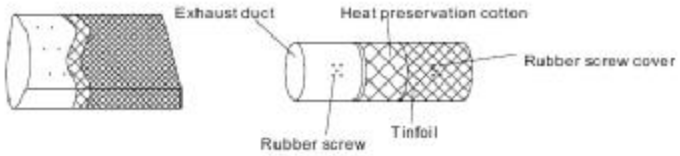
Air inletfrom bottom



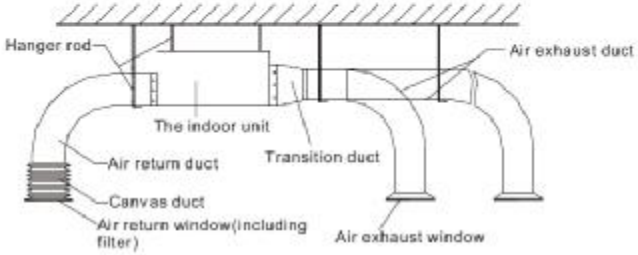
Air inletfrom side

4. SOME NOTES FOR INSTALLATION OF AIR RETURN DUCT AND AIR EXHAUST DUCT.

- To minimize energy loss on the process of transfer and avoid separating out of the condensed water, both the air return duct and air exhaust duct should be covered with heat preservation layer.



- Both the air exhaust duct and air return duct shall be fixed on the floor prefabricated board, and all th joint of duct must be solidly sealed.
- Drain hose for condensed water shall keep 1% inclination grade, the drain hose shall also be covered by heat preservation sleeve.



INSTALLATION

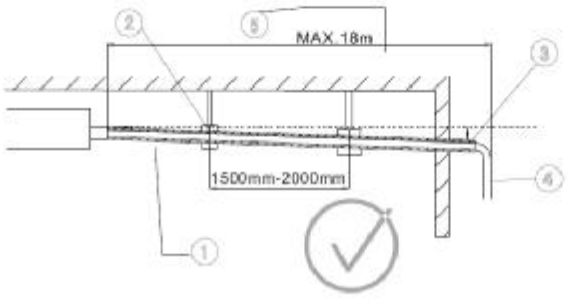
CONNECTION OF DRAIN HOSE

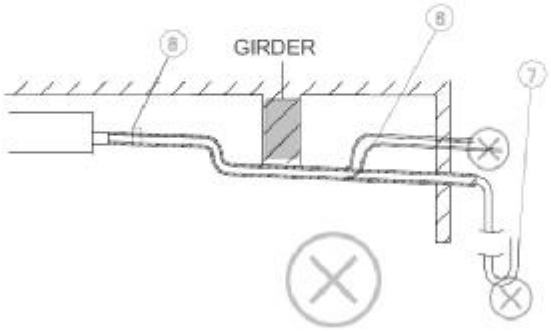
1. Arrange the drain piping with PVC tube Ø 25 and ensure downwards grade of over 2/100

2. Use mucilage glue to connect the drain pipe and connect the piping joint with adhesive PVC tape.

3. Check every chain of piping.

4. Change the piping exhaust direction with conjoint drain hose.





1. Heat insulation material (with the thickness of over 9mm).
2. Support rod of drain hose.
3. Minimum inclination grade (1/100).
4. Drain hose
5. Maximum drainage distance
6. Being bent by raising (should be avoidable)
7. Dirty water accumulation (should be avoidable)
8. Air exhaust pole.

DRAINAGE TEST

◆Confirm smooth drainage before test and check all the sealing condition of joints.

◆Drainage test must be done before ceiling arrangement. (Add about 2000ml of water into drain tray)
Attention: after confirming smooth drainage and no water leak, cover the drain hose with heat preservation cotton. If not, it may result in condensed water.

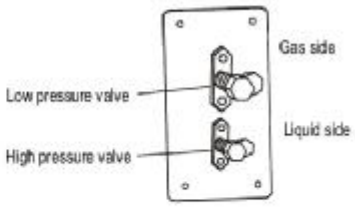
INSTALLATION

REFRIGERANT TUBE

1. The coupler of refrigerant tube is at the right flank side of the outdoor unit.

2. After connecting with the valve, mount the tube leftward, rightward or backward.

3. See the right diagram for installation of the mounting plate.



Tube dimension and connecting method

Tube dimension and connecting method of the outdoor unit (arrange in the order of cooling capacity)

1) 8000~10000Btu/h
   Tube joint dimension：(Ø6.35+Ø9.52)

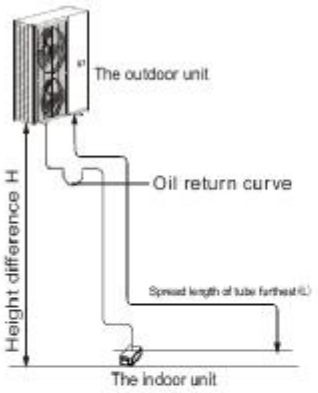
2) 12000~18000Btu/h
   Tube joint dimension：(Ø6.35+Ø12.7)

3) 20000~26000Btu/h
   Tube joint dimension：(Ø9.52+Ø15.88)

4) 30000~60000Btu/h
   Tube joint dimension：(Ø9.52+Ø19.05)

See " refrigeration pipeline connecting" for tube connecting method.

Length allowable of refrigerant tube and height difference



Notice: if the height difference between the indoor and outdoor unit is over 5 metres, add the oil return curve as needed.

For common tube model,

Cooling capacity 8000~10000Btu/h		Figure
Spread length of tube furthest (L)		10m
Maximum height difference	Height difference between the indoor and outdoor unit H	5m

Cooling capacity 12000~18000Btu/h		Figure
Spread length of tube furthest (L)		15m
Maximum height difference	Height difference between the indoor and outdoor unit H	7.5m

Cooling capacity 20000~26000Btu/h		Figure
Spread length of tube furthest (L)		20m
Maximum height difference	Height difference between the indoor and outdoor unit H	9m

Cooling capacity 30000~60000Btu/h		Figure
Spread length of tube furthest (L)		25m
Maximum height difference	Height difference between the indoor and outdoor unit H	10m

For long tube model,

Cooling capacity 20000~26000Btu/h			Figure
Spread length of tube furthest (L)			35m
Maximum height difference	Height difference between the indoor and outdoor unit H	The outdoor unit is above the indoor unit	10m
		The outdoor unit is below the indoor unit	15m

For long tube model,

Cooling capacity 30000~60000Btu/h			Figure
Spread length of tube furthest (L)			50m
Maximum height difference	Height difference between the indoor and outdoor unit H	The outdoor unit is above the indoor unit	15m
		The outdoor unit is below the indoor unit	18m

INSTALLATION

Remove dump and water inside the tube

- Be sure to clear off all the dump inside the refrigerant tube before connecting tube to every outdoor unit.
- Clear the pipeline with high pressure N_2 , do not clear with refrigerant of the outdoor unit.

Airtightness test

After connection of the refrigerant tube, fill up the pressurized nitrogen gas to do airtightness test.

Attention:

1. The pressurized N_2 should be selected to the standard of 2.94MPa(30kg)cmğ .
2. Valve core of low pressure valve must be screwed tight while pressurizing the nitrogen gas.
3. Pressurize the N_2 from the vent hole.
4. Both high and low pressure valve keep closed while Npr essurizing.
5. O_2 flammable gas or poisonous gas are not permitted for air tightness test.

Vacuum extraction

- Extract the vacuum by vacuum pump.
- Extract the vacuum from the gas side.

Valve opening

- Open both high and low pressure valve fully with hexagon wrench.

Supplement of refrigerant

Calculate the refrigerant supplement amount, referred to the diameter and length of tube at liquid side of indoor /outdoor unit. Supplement the refrigerant as described below for supplement amount.

Diameter of tube at liquid side	F6.35	F9.52	F12.7
Supplement amount for each 1m of tube (T)	0.030kg	0.050kg	0.100kg

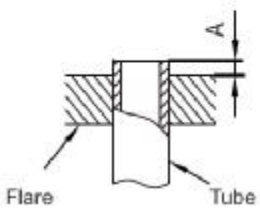
Adding amount=(Actual connecting pipe length- 5)x T

REFRIGERANT PIPELINE CONNECTION

Flared tube

- Use the pipe cutter to cut off the tube.

- Insert a nut into the connecting pipe and do flaring with specified flaring tools, reamers for example.



Outer diameter	A (mm)	
	Max.	Min.
F6.35mm	8.7	8.3
F9.52mm	12.4	12.0
F12.7mm	15.8	15.4
F15.88mm	19.0	18.6
F19.05mm	23.3	22.9

INSTALLATION

AIR EXHAUST (hexagon wrench A5mm is needed)

Length of connecting pipe at liquid side	Exhaust method
<5m	Refrigerant of the outdoor unit
5 - 70m	Vacuum pump or refrigerant jar

If relocating the unit, extract the vacuum by vacuum pump or refrigerant jar, and then add refrigerant as mentioned before.

TIGHTNESS OF THE JOINT

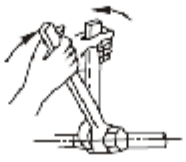
- **Level with the connecting pipe**

Screw tight the nut of connecting pipe and screw tight as described below.

⚠ NOTICE

- Based on the installation conditions, extra torque (N.cm) may damage the nut.

Outer diameter	Tight Torque
F6.35mm	1420~1720N cm (144~176kgf.cm)
F9.52mm	3270~3990N cm (333~407kgf.cm)
F12.7mm	4950~6030N cm (504~616kgf.cm)
F15.88mm	6180~7540N cm (630~770kgf.cm)
F19.05mm	9720~11860N cm (990~1210kgf.cm)



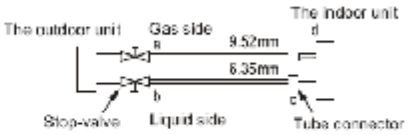
Attention to operation of stop-valve

- Open the valve stem till to the stop block, do not attempt to open wider.
- Screw the stem cap with wrench or similar tool.
- Tight torque of the valve stem cap.

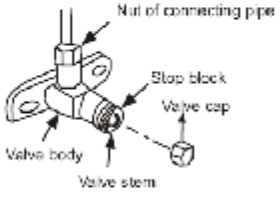
Liquid side(Ø9.52,Ø12.7): 1180Nc m(120kgf-cm)

Gas side(Ø15.88, Ø19.05): 1180Nc m(120kgf-cm)

■ Before using the outdoor refrigerant, link all the wire of both indoor and outdoor unit and charge it.



1. Screw tight the nut b, c, d of the connecting pipe.
2. Slightly loosen the nut a of connecting pipe.
3. As for the pipe of 3-5m in length, turn the valve b stem at 45° anticlockwise.
   6 -7 seconds later, when the air runs out of Place a, screw tight the nut of connecting pipe.
4. Open fully the stem of valve a, valve b.
5. Screw tight the valve stem cover.
6. Notice: the outdoor refrigerant can only be used for exhausting when the pipe is less than 5m in length. You can exhaust Freon from high pressure valve. Meanwhile , link all the power cord and signal cords well and operate as described above 3 minutes later.



■ While using the vacuum pump (applied to every low pressure valve)

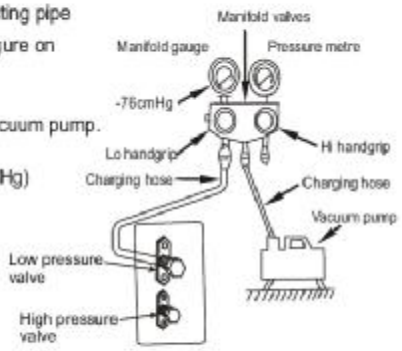
1. Connect the charging hose of the manifold valves to the charging mouth of the low pressure valve.
   (Shut off both high and low pressure valve close)
2. Link the connector of charging hose with the vacuum pump.
3. Open fully the handgrip LO (Low pressure) of manifold valves assembly.

INSTALLATION

4. Extract vacuum with vacuum pump. To begin extracting, loosen slightly the nut of connecting pipe in low pressure valve to check if air comes in. (If the noise of vacuum pump alters, the figure on manifold gauge changes from negative into 0), then screw tight the nut.
5. After extraction, close the handgrip L0 (Low pressure) of manifold valves and stop the vacuum pump.

- After vacuum extracting for 15 minutes, confirm if the figure indicates -1.0X10^{5}Pa(-76cmHg) on manifold gauge.

6. Open fully the high and low pressure valve.
7. Tear apart the charging hose at the charging mouth of low pressure valve.
8. Screw tight the valve cap of low pressure valve.



■ If tube length<10m, you can use the refrigerant jar for extraction.

1. Link the charging hose of refrigerant jar with the charging mouth of the low pressure valve.
2. Screw tight the indoor nut c, d and the nut a of outdoor connecting pipe.
3. Slightly loosen the nut b of outdoor connecting pipe.
4. Open the valve of refrigerant jar, when refrigerant at the nut of connecting pipe at high pressure side flows for 10-15 seconds, close completely nut b of connecting pipe.
5. Tear apart the charging hose at the connector of low pressure valve, push the valve core to emit refrigerant till no noise is heard. Then screw tight the valve cap.
6. Open fully the valve stem of outdoor high pressure side b and low pressure a.
7. Be sure to screw tight the valve cap of stop valve.

ELECTRICAL WIRING

Attention

- Arrange the power supply specified for the outdoor unit.
- Current leak detector device and manual switch must be equipped
- Bring the wiring system of indoor and outdoor unit and refrigerant tubing system together into one system.
- Comply with the national electrical codes.
- Power wiring must be done by qualified electricians.

⚠ WARNING

1. Ensure the specification of power supply and its voltage stability.
2. Power must be supplied by specified circuit.
3. Wiring must be done by qualified technicians and comply with national electrical codes.
4. Avoid contact of the connecting wire of indoor/outdoor unit and power conducting wire at the setting point.
5. Refer to the circuit diagram for wiring and note the relative warning and notice attached to the indoor and outdoor unit.
6. Add main power short circuit switch and current leak protection switch.
7. Power cord shall be matched with the appliance you bough. If not, ensure the power cord complying with national electrical codes.

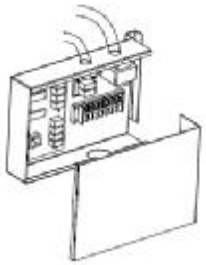
INSTALLATION

⚠ ATTENTION

1. Power cord spreads from the indoor air switch to the indoor /outdoor unit, and power connecting cord is the cable that connects the indoor unit with the outdoor unit.
2. Since the sectional area of the power core is the smallest, when the power connecting cord turns a bit longer, the sectional area of conducting wire shall be increased.
3. The grounding wire of the unit shall be up to over $2mm^2$.
4. Power cord connecting to the indoor unit shall be selected cable RVV(300/500V); Power cord connecting to the outdoor unit and power connecting cord shall be selected multi sectional cable YZW(300/500V) .

1. WIRING OF THE INDOOR UNIT

Open the electric wiring box cover, pass the connecting wire through the rubber ring. Do wiring as circuit diagram requirement. Fix tight the wiring on the terminal board.



Explanation of the DIP jumps on the indoor mainboard

⚠ NOTICE

The way to judge 24V or 220V outdoor unit control mode:
If the right warning label is shown on the terminal board, then it is 24V outdoor unit control mode; If not, it is 220V outdoor unit control mode.

For 2 digits switches

No.	Setting items	DIP1	DIP2	Consequence	Remarks
1	Use function setting	ON	---	Cooling only type	
		OFF	---	Heat pump type	
2	Communication mode	---	ON	Wave communication	For 24V outdoor unit control mode, only OFF position can be selected.
		---	OFF	Level communication	

For 4 digits switches

No.	Setting items	DIP1	DIP2	DIP3	DIP4	Consequence
1	Drainage pump function setting	OFF	ON	ON	---	With drainage pump
		OFF	ON	OFF	---	Without drainage pump
2	light-wave generator or crankcase heater	OFF	ON	---	ON	Equipped
		OFF	ON	---	OFF	Unequipped

2. WIRING OF THE OUTDOOR UNIT

INSTALLATION

1. Dismantle the maintenance plate on the right side of the unit.
2. Loosen the screws of the wire clamper, then take down the clamper.
3. Connect power cables and signal cables to the connector as wiring diagram on the unit.
4. Re-install the dismantled parts to their original state.

Explanation of the DIP jumps on the outdoor mainboard

No.	Setting items	DIP1	DIP2	Consequence	Remarks
1	Use function setting	ON	---	Cooling only type	
		OFF	---	Heat pump type	
2	Communication mode	---	ON	Wave communication	For 24V outdoor unit control mode, only ON position can be selected.
		---	OFF	Level communication	

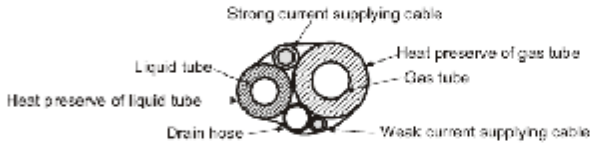
Note: Renew the power supply to the unit when the jump setting is finished.

3. BIND

After wiring, bind up the connecting tube, connecting wire and drain hose as shown below.

Notice: Do not flat the drain hose while binding!

Arrange the drain outlet to the place that will not ruin the environment.



If one of the following symptoms takes place, stop operation immediately , cut off the manual power switch and call the service shop.

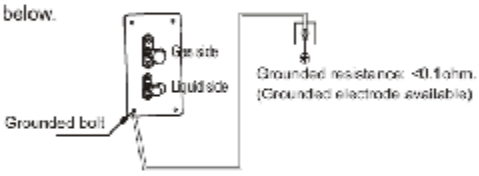
- Some switch or button often fails to work properly.
- Fuse or current leak detector device always break.
- Dump or water clogs into the air conditioner.

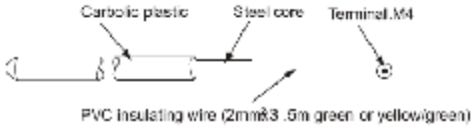
INSTALLATION

GROUNDING WORK (notice: the shell of the outdoor unit must be grounded)

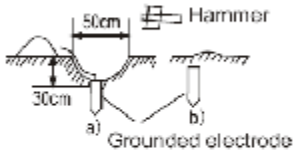
- Find the grounded junction pillar on the outdoor valve mounting plate as shown below.

1. When the grounded junction pillar is available Sectional area of the grounded wire shall not be less than 4mm^2.
2. When the grounded electrode is used specification of grounded electrode.





- **Process of grounding**

Step	Task	Description	Attention
1	Determination of grounding location	**Suitable location** a). Moist place b). Hard land. **Improper location** a). Where lies the underground structure or establishment such as gas pipeline, telephone earth wire. b). Within 2m distance of the lightning rod and its cable.	• Keep away from sandy clay, gravel clay due to high grounding resistance. • Telephone earth wire must not be used as grounded wire. • When the grounded electrode is set at the place loaded with heavy traffic, note firmly junction.
2	Knock the grounded electrode into the mounting location.	a). Dig one hole and knock the electrode into it. b). Cover the electrode with excavated soil.	
3	Arrange the grounded wire	a). If the grounded wire is too short, connect one extended conducting wire. The connector must be welded and wrapped with adhesive tape. b). Secure the grounded wire with wire clip.	• Grounded wire must be selected green or yellow/green insulation wire with its sectional area no less than 4mm^2 • Do not bury the welding part.
4	Check the above task and take some proper measures.	a). Check the grounded resistance by grounded resistance tester. b). If the grounded resistance is higher than the predetermined level, bury deep the electrode or add electrode.	
5	Connect the grounded wire to the unit.	Secure the grounded wire to the grounded pillar of the unit.	

INSTALLATION

TEST OPERATION

Attention

1. All the valve must be open before operation test.
2. Electrical safety inspection must be done before operation test.
3. Not attempt to start compulsive operation (otherwise, protection device may not operate and thus cause danger)

1. Operation test must be done after completion of all installation.

2. Please confirm the items below:

- Correct installation of both the indoor and outdoor unit.
- Correct wiring. (Cross junction of tube wiring is not allowed!)
- Smooth drainage.
- Perfect heat insulation and heat preservation.
- Correct connection of grounded wire.
- Make notes for tube length, supplementation amount of refrigerant.
- Power voltage is the same as the rated voltage of the unit.
- No obstruction at the air inlet/outlet of the indoor/outdoor unit.
- Open the stop valve at gas, liquid side.
- Switch on the power supply and preheat the air conditioner.

3. Install the mounting bracket of the remote controller as the user required, but the location must be selected to facilitate smooth signal transmission from the remote controller to the indoor unit.

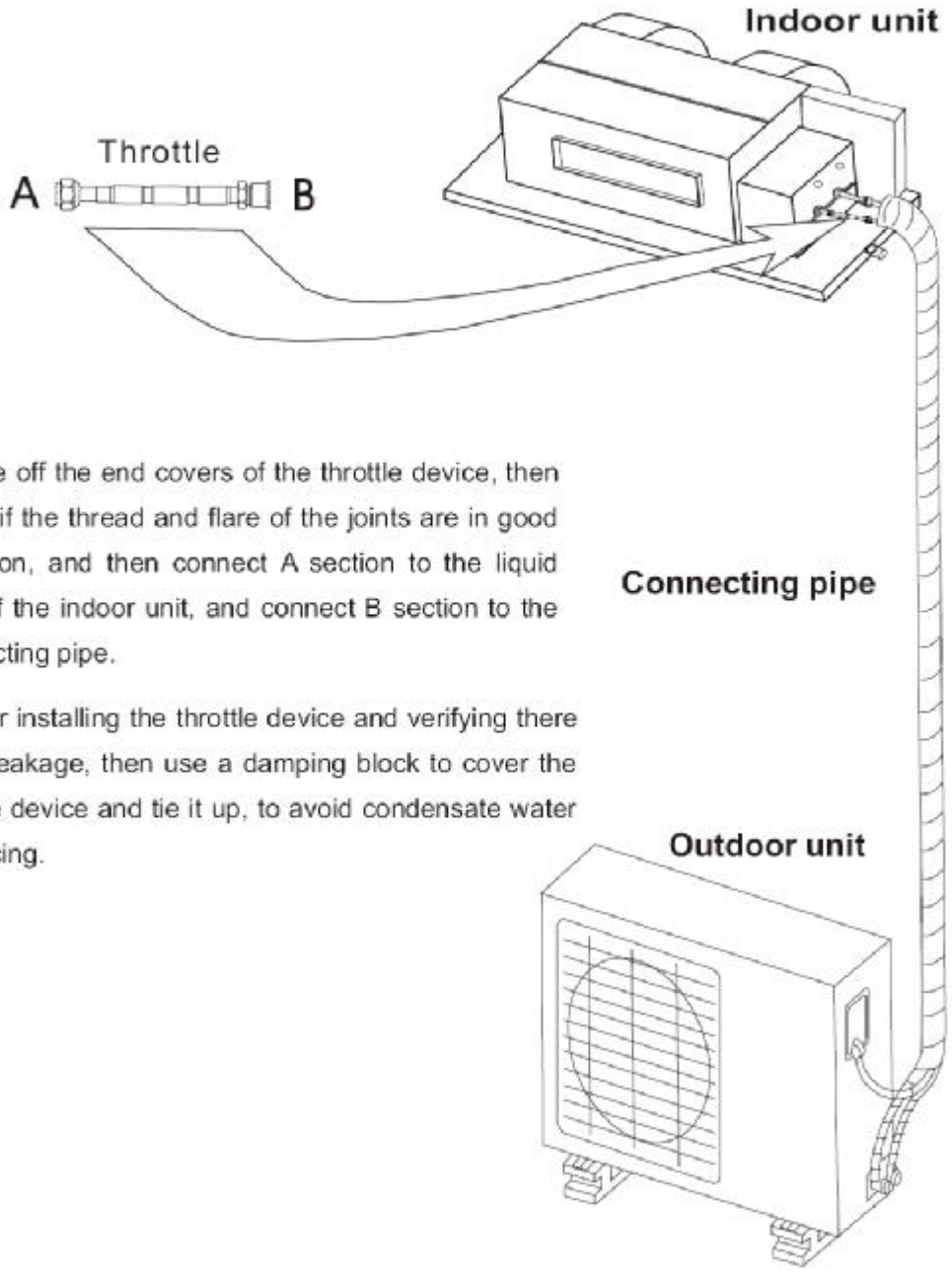
4. Test operation.

Start cool operation by use of remote controller and check the following items:

- The indoor unit
  1). Normal work of remote controller switch.
  2). All the function buttons are normal.
  3). Normal work of deflector.
  4). Room temperature is set normal.
  5). All the indicator lamps are lit normal.
  6). Normal work of manual running buttons.
  7). Condensed water caused by unsolid bind up of the connecting copper pipe and drain hose.
  8). Open the air grille to check if leakage or infiltration occurs, especially for the drain plug.
  9). No shake and abnormal sound during operation.
  10). Test normal operation at heat mode.
- The outdoor unit
  1). No shake and abnormal sound during operation.
  2). Airflow, noise or condensed water discharged will not influence neighbours.
  3). No refrigerant leakage.

Notice: if the air conditioner is turned on immediately after unit charging or restart immediately, it will take 3 minutes for the compressor to start operation. This is normal.

Appendix 2 Throttle Device Installation



1. Take off the end covers of the throttle device, then check if the thread and flare of the joints are in good condition, and then connect A section to the liquid pipe of the indoor unit, and connect B section to the connecting pipe.

2. After installing the throttle device and verifying there is no leakage, then use a damping block to cover the throttle device and tie it up, to avoid condensate water producing.

3.3.2 Operation

OPERATION OF THE AIR CONDITIONER

Three minute protection

- If the air conditioner is turned off, it will take 3 minutes before restarting operation. This allows pressure inside the compressor to equalize.

Features during heat operation

- Hot air will not be blown out at the start of heat operation. Wait 3-5 minutes for heat transfer of the room heat exchanger.
- If the outdoor ambient temperature is a bit too high, the outdoor fan motor may stop.

Defrost during heat operation

- To improve heating efficiency, defrost operation will be automatically activated if frosting occurs during heat operation. Meanwhile, the outdoor unit begins draining.
- During defrost operation, the fan motor of both indoor and outdoor unit stop.

Conditions of unit operation

For proper usage, please refer to the following conditions

Cool operation	Outdoor ambient temperature	Above -7°C, below 43°C.
	Room temperature	Above 16°C
	Room humidity	If long periods of operation under humidity above 80%, dew may be coagulated on the surface of the indoor unit or the air outlet may blow misty cool air.
Heat operation	Outdoor ambient temperature	Above -7°C, below 21°C.
	Room temperature	Below 16°C

Failure to operate the unit under the above conditions may cause inefficient operation.

Protection device(high pressure switch)

This device is for terminating the unit compulsive operation.

When the protection device is in operation, the run indicator lamp is still on.

The protection device may be activated in the following cases:

▲ Cool operation

- The air inlet or outlet of the outdoor unit is blocked.
- Strong wind blows directly towards the air outlet of the outdoor unit.

▲ Heat operation

- The air filter is clogged with extra dust and trash.
- The air inlet of the indoor unit is blocked.

When the protection device is in operation, please cut off the power supply. Check out all the malfunction before restarting.

Power failure

- If power failure occurs during operation, all the current operation will stop.
- Restart after a power failure, the run indicator lamp of wire controller will flash.
- Repress I/O button to restart operation.

■ Error behaviour during operation

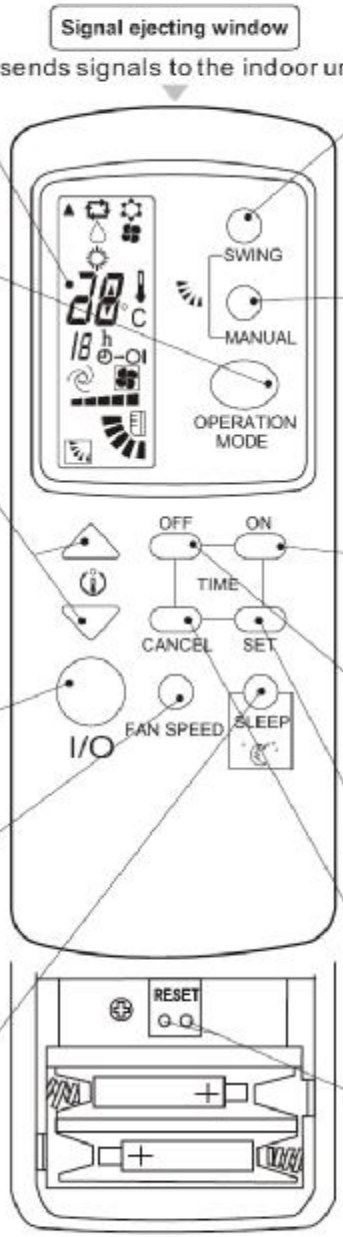
If error behaviour occurs caused by thunder, automobile wireless, please disconnect the manual power switch. When turning it on again, repress ON/OFF button.

Heat capacity

- Once the outdoor ambient temperature falls, heat capacity will be reduced since the air conditioner draws in heat from the outdoor unit and releases it via the indoor unit during heating operation.

OPERATION OF THE AIR CONDITIONER

REMOTE CONTROLLER



OPERATION DISPLAY

It displays the current settings.

OPERATION MODE button

Press it to select operation mode: AUTO COOL HEAT FAN DRY

TEMPERATURE ADJUSTMENT buttons

Press △ once, the setting temperature increases by 1℃.
Press ▽ once, the setting temperature decreases by 1℃.
The range of setting temperature is 16-31℃.

RUN/STOP button

Turns unit ON/OFF.

FAN SPEED button

Press it to change the fan speed in the order of low-medium-high -auto ( ).

SLEEP button

Press it to start sleep running and press again to stop it.

SWING button

Press it to change up/down air flow direction and the deflector automatically swings up and down.

MANUAL SWING button

Press it to change up/down air flow direction and the deflector moves at a certain angle. You can change the moving angle in the order of:
(1)→(2)→(3)→(4)→(5)

TIMER ON button

Please see "AUTO-ON/OFF timer operation".

TIMER OFF button

Please see "AUTO-ON/OFF timer operation".

TIMER SET button

Press it to fix the timer setting.

TIMER CANCEL button

Press it to cancel the timer setting.

RESET pieces

If the remote controller can't work normally, short the two RESET pieces, it will be OK.

NOTICE:

- **Cool only type has no HEAT mode.**
- **To operate, the distance should be within 6 meters from the indoor unit with a clear line of sight.**
- **Remove the batteries if the remote controller is not to be used for long periods of time.**
- **In this illustration, all displays are ON for the purpose of explanation. Some models may not show all these indications.**
- **Don't tear the batteries apart or throw them into fire, which will lead to irreparable damage.**

OPERATION OF THE AIR CONDITIONER

● AUTO-ON/OFF timer operation set

1. Press button OFF when the air conditioner is on to initiate the AUTO-OFF TIMER function. Meanwhile, ○ of ⊖→○ starts to flash on the display.

   Press button ON when the air conditioner is off to initiate the AUTO-ON TIMER function. Meanwhile, | of ○ · starts to flash on the display.

2. Every press of button ▽ or △ increases the AUTO-ON/OFF time by one hour (12 hours at most) and the digits of AUTO ON/OFF time will appear on the display.

3. Press button SET to set the AUTO-ON/OFF time. The or ○ will stop flashing on the remote controller display.

● AUTO-ON/OFF timer operation cancellation

If you want timer operation cancelled, press button CANCEL until the digits of AUTO-ON/OFF time and ⊖→○ or ⊖→ disappea on the remote controller display.

NOTICE:

1). TIMER ON/OFF operation must be set again after a power failure.

2). Once the AUTO-ON/OFF time is fixed, if you want to change it, you should cancel the previous AUTO-ON/OFF timer operation.

3). If you press the button SET once incautiously after the AUTO-ON/OFF time is fixed, the system will count time anew based on the current display time.

Setting the batteries

When the operation display screen of the remote controller is hard to see and the reception becomes hard, replace the batteries.

Battery replacement:

1). Slide the rear cover on the remote controller and pull it apart.

2). Set the two dry batteries. Be attention to position (+ /-) correctly.

3). Re-install the rear cover as it was.

Some notice for the operation of the remote controller

1). The remote controller operates within a range of 8 metres without any obstruction.

2). To use the remote controller, aim the transmitter at the signal receiving window of the unit. Deflexion angle allowable is +

3). The buzzer will sound like "DU" once receiving the signal from the remote controller.

4). Do not drop the remote controller or throw away at random.

5). Never expose the remote controller to direct sunlight.

6). Do not put the remote controller at hot or corrosive place.

7). This remote controller owns memory function. When press ON/OFF button, the unit will operate as the last setting.

OPERATION OF THE AIR CONDITIONER

FUNCTION SPECIFICATIONS

1. AUTO mode

In this mode, the air conditioner can automatically adjust the room temperature to decide the most suitable temperature.
At the start of operation, the air conditioner will automatically select the operation mode according to the room temperature.
The following table shows the conditions which are set at start up.

Room Temperature (RT)	Selected mode
RT≤20°C	Heating (For cooling only type, dehumidifying mode is selected)
20°C<RT<24°C	Fan
RT≥24°C	Cooling

2. COOL operation

Press TEMPERATURE ADJUSTMENT buttons to change the set temperature.
Press FAN SPEED button to change the fan speed.

3. DRY operation

In this mode, the air conditioner automatically sets the room temperature and this temperature will not appear on display.
TEMPERATURE ADJUSTMENT button and FAN SPEED button are not functional.

4. FAN operation

In this mode, the outdoor unit does not operate. The indoor fan alone operates.

Press FAN SPEED button to change the fan speed of indoor unit.

5. HEAT operation(only applied to heat pump type)

Press FAN SPEED button to change the fan speed of indoor unit.

Press TEMPERATURE ADJUSTMENT button to change the set temperature.

6. SLEEP mode

Sleep mode in cooling and drying running.

A. The indoor fan runs at low speed.

B. After one hour of operation the set temperature will increase by 1°C. One hour later, the set temperature will increase by 1°C once more. The unit will then continue operating at 2°C above the set temperature.

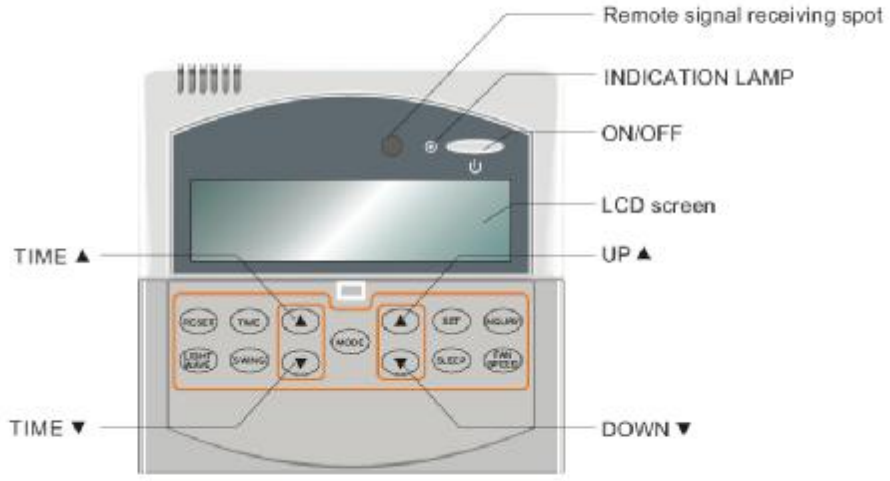
Sleep mode in heating running.

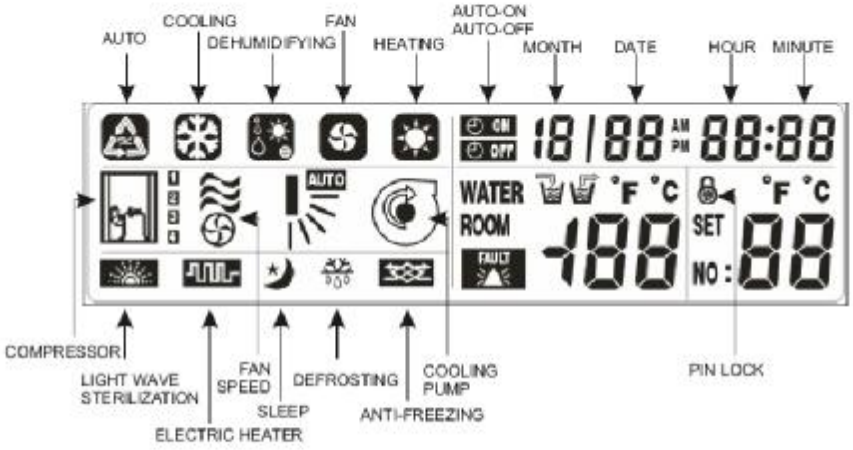
A. The indoor fan runs at low speed.

B. After one hour of operation the set temperature will decrease by 2°C. One hour later, the set temperature will decrease by 2°C once more. The unit will then continue operating at 4°C below the set temperature.

OPERATION OF THE AIR CONDITIONER

WIRE CONTROLLER (OPTIONAL)



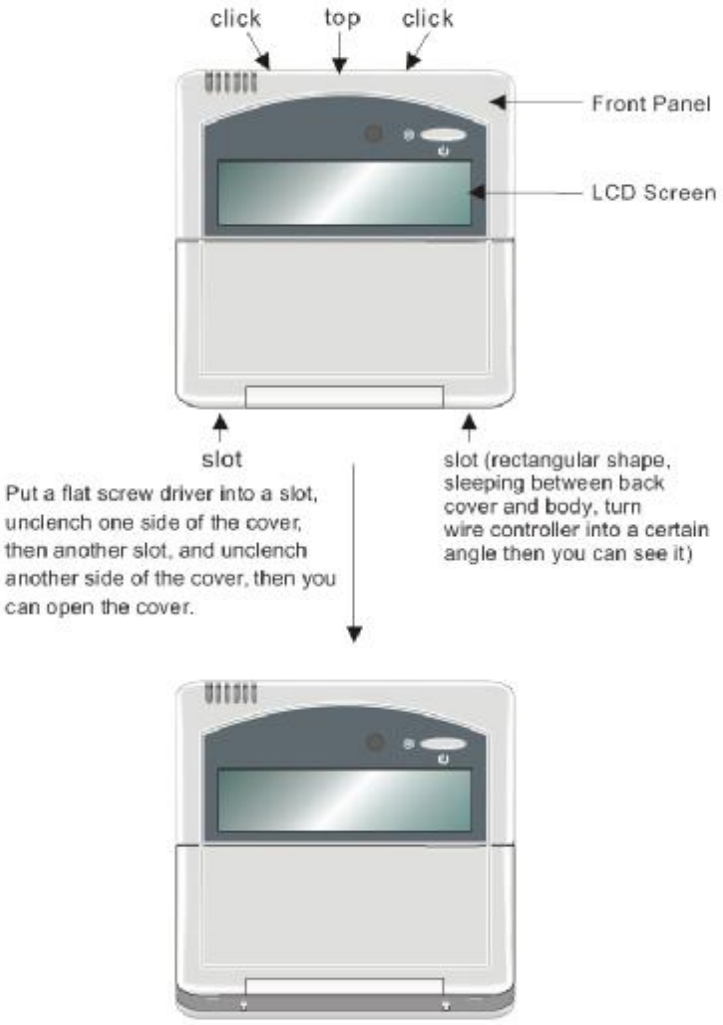


Instruction of symbols on LCD screen
(some symbols may not be displayed in practice)

OPERATION OF THE AIR CONDITIONER

Installation of Wire Controller

When installing back cover of wire controller, fit the lower back cover into the body, hold on and click the upper part into the body, then push them together.
When dismantling the back cover, follow the steps below:



Note: Do not push the front panel of wire controller with force to avoid crushing the LCD screen or internal PCB board.

OPERATION OF THE AIR CONDITIONER

■ OPERATION WITH WIRE CONTROLLER

1 Run/Stop

- When ON/OFF button is pressed once, the unit starts and the green lamp illuminates.
- When ON/OFF button is pressed again, the unit stops and the red lamp illuminates.

2 Temperature Adjustment

- Every press of "UP ▲" button increases the setting temperature by 1℃, every press of "DOWN ▼" button decreases the setting temperature by 1℃.
- The range of setting temperature is 18-31℃.

3 Fan Speed Adjustment

- Press FAN SPEED button to change the fan speed of indoor unit in the order of (the grey part is flashing):

Low	Medium	High	Auto
			

4 Sleep Selection

- Press SLEEP button once to start sleep function and press it again to stop sleep function.
- Once activating sleep function, the sleep indicator lamp will illuminate on the LCD screen of the wire control, and the fan will run at low speed.

5 Air flow direction adjustment

- Press SWING button to change the air flow directions of indoor unit in the order of (the grey part is flashing):

Auto Swing	Manual Position 1	Manual Position 2	Manual Position 3	Manual Position 4	Manual Position 5
					

6 Operation mode selection

When the unit is at standby state, press MODE button to change its operation modes in the order of:

Cooling	Dehumidifying	Fan	Heating	Auto
				

OPERATION OF THE AIR CONDITIONER

7 Date/Time Setting

At normal display page, press "TIME" button once to set the Date/Time and meanwhile the beeper raises Bi sound once; press the "TIME" button again to finish the setting and meanwhile the beeper raises Bi sound twice.

8 Timer Operation

- At normal display page, press "TIME▲" button to set the AUTO-ON timer and meanwhile the lamp illuminates, while press "TIME▼" button to set the AUTO-OFF timer and meanwhile the lamp illuminates.
- When setting the timers, press "TIME▲" or "TIME▼" to shift the setting items between timer parameter and timer date/time.
- When setting the timers, press "UP▲" or "DOWN▼" to change the values of timer parameter and timer date/time.
- Timer parameters:
  00: Invalid timer setting; 01: Valid single-timer; 02: Valid circulated timer.
- When setting the timers, press "TIME" button once to finish the timer setting, and meanwhile the beeper raises Bi sound twice.

9 Light Wave function selection

- Press LIGHT WAVE button once to start light wave function and press it again to stop the function.
- Once activating light wave function, the lamp will illuminate on the LCD screen of the wire control.

10 Fault and temperature inquiry

Every press of ENQUIRY button changes the display pages between "normal display page", "sensor temperature inquiry page", "current fault inquiry page" (if the unit is at fault) and "history fault inquiry page" (if there are faults recorded).

- At sensor temperature inquiry page, press "UP▲" or "DOWN▼" button to inquiry the temperatures:
  A0: Room temp.; A1: Indoor coil temp.; A2: Outdoor ambient temp.; A3: Outdoor coil temp.;
- At current fault inquiry page, the lamp is flashing, and the fault code is shown on the wire control.
- At history fault inquiry page, the lamp is on, and the fault time, fault code and fault No. are displayed on the wire control

11 Reset Function

- When the unit is at fault and the lamp is on, press RESET button to unlock the fault lock with a Bi sound indication.
- At history fault inquiry page, press RESET button for 10 seconds to remove the fault record with a Bi sound indication.

OPERATION OF THE AIR CONDITIONER

12 Unit Parameter Inquiry

- When the unit is off, press SET button for 5 seconds until the beeper raises a Bi sound, and then press SET button again to move into unit parameter inquiry mode (ignore keying in the password).
  At unit parameter inquiry mode, press "TIME ▲" and "TIME ▼" to change the parameters to be checked.

13 Unit Parameter modification

- When the unit is off, press SET button for 5 seconds until the beeper raises a Bi sound, and then enter the right password and press SET button again to move into unit parameter modify mode (The word PASS will show up).
  Note: Contact the local dealer for the password.

  At unit parameter modification mode, press "TIME ▲" and "TIME ▼" to select the parameters to be changed; press "UP ▲" and "DOWN ▼" to change the parameters; Press RESET button to restore all the parameters to factory setting

⚠ NOTICE

The parameter modification must be permitted by the manufacturer, otherwise the manufacturer will not be responsible for any problems caused by the modification.

NO.	Parameters	Normal range	Default value	Instructions
01	Room temp. compensation	-5℃~5℃	0℃	
02	Outdoor coil temp. compensation	-5℃~5℃	0℃	"--" means outdoor coil sensor detection is shielded.
03	Coil anti-freezing protection in cooling	-5℃~15℃	-2℃	
04	Coil over-heating protection in heating	50℃~60℃	55℃	
05	Compressor minimum standby time	0~10 mins	3mins	
06	Compressor minimum running time	0~10 mins	3mins	
07	Shielding time of low pressure protection	0~10 mins	3mins	
08	Defrosting time	8~20 mins	8mins	
09	Outdoor coil temp. to end defrosting	8~20 ℃	12℃	
10	Automatic restarting	0/1	0	0: enable; 1: disable
11	Fahrenheit or Celsius temperature	0/1	0	0:Celsius; 1:Fahrenheit
12	12 hours or 24 hours mode	0/1	0	0:24 hours; 1:12 hours
13	Mode changing setting	0/1	0	0:On standby or running state, mode changing is available; 1:On running state, mode changing is unavailable;
14	Fan high speed shielding setting	0/1	0	0:Three fan speeds ; 1: Shielded high speed
15	Light wave generator/Crankcase heater	0/1	0	0:Light wave generator; 1:Crankcase heater

3.3.3 Maintenance

MAINTENANCE AND SERVICE

CHECK BEFORE USE

- The grounded wire is firmly connected and no break.
- Well installation of the air filter.
- If the air conditioner has not been used for long periods, be sure to clean the air filter before use.
- Ensure no obstruction at the air inlet/outlet of the indoor and outdoor unit.

OPTIMAL PERFORMANCE

- Set the appropriate temperature to suit you most, prevent over cold or warm.
- At cool mode, use the curtain or louver window to prevent direct sunshine.
- Please close the door and windows. If not, it will reduce the cooling or heating efficiency.
- Please set the AUTO-ON/OFF time by timer button on the remote controller.
- Do not put the objects at the air inlet/outlet that will block the airflow. Otherwise, it will reduce efficiency or even cause operation termination.
- Please periodically clean the air filter when the filter is clogged.

SAFETY RULE

⚠ Attention

1. The air conditioner must be installed by professional technicians. If not, it will cause injury and do damage to the unit.
2. For proper use of the unit, please refer to "Conditions of unit operation" section of this manual, if not, it will lead to water leakage, or degrade of cooling or heating efficiency.
3. Notice appropriate room temperature, especially for the elderly, children or patients.
4. Lightning or a car wireless telephone operating nearby may cause the unit failure, please pull out the power plug for a while and then restart.

⚠ Warning

1. The main power switch shall not be accessible for young children and ensure that they do not play with the appliance.
2. Disconnect the main power switch at stormy days.
3. If the unit is not to be used for long periods of time, disconnect the main power switch.
4. Be sure to disconnect the main power switch before cleaning or servicing.

⚠ DANGER

- Do not put a finger, a rod or other objects into the air inlet or outlet. As the fan is rotating at a high speed, it will cause injury.
- Be careful not to adjust the deflector during operation as the fan is rotating at a high speed. Otherwise, your fingers might be pinched or cause damage to some gearing parts of deflector.
- Do not tear apart the shield of the outdoor fan, or the high-speed running fan may hurt you.
- Young children should be supervised to ensure that they do not play with the appliance.
- Do not dampen the indoor unit and the remote controller. Otherwise, it will cause short circuit and even fire.
- Do not use or store flammable gas or liquid such as fixature, oil paint, gasoline.
- If anything abnormal occurs, such as noise, smell, smog, overload heat, current leakage, please disconnect the power immediately and consult the service shop where you bought the air conditioner . Do not attempt to repair or modify the air conditioner by yourself.

MAINTENANCE AND SERVICE

MALFUNCTION CLASSIFICATION AND SUGGESTED REMEDY

If the cases below occur, stop the unit operation, disconnect the power switch and consult the service shop.

Check code appears in the LED window of the wire controller.

The safety breaker, a fuse or the earth leakage breaker cuts off the operation frequently.

Outside substance or water comes into the air conditioner.

Failed reception of the remote controller or abnormal work of switch.

Other abnormal cases.

Please check the following before service calling.

Problem	Probable causes	Remedy
The air conditioner does not run	1. Power failure?	1. Wait for power resume.
	2. Power switch is OFF position?	2. Turn power switch the ON position.
	3. Fuse blown?	3. Replace the fuse.
	4. Power exhaustion of the remote controller?	4. Replace the batteries.
	5. Is timer set appropriately?	5. Wait or cancel the previous timer operation.
There is insufficient cooling or heating	1. Is the temperature setting appropriate?	1. Set temperature to the suitable point.
	2. Are air filters dirty very much?	2. Clean the air filter.
	3. Is air inlet or outlet blocked?	3. Clear the obstruction.
	4. Are the windows and doors closed?	4. Close doors and windows.
The air conditioner cooling, but room is too warm.	1. Is air inlet or outlet blocked?	1. Clear blockage and restart operation.
	2. During 3-minute of compressor auto protection.	2. Wait 3 minutes
	3. Is the temperature setting appropriate?	3. Set temperature to the suitable point.

⚠ Notice: do not attempt to replace power cord by yourself in order to avoid hazard; do not repair the air conditioner by yourself.

THESE CASES ARE NOT TROUBLES

The following events are not troubles that will obstruct you in using

1. Protection of the air conditioner

● Compressor protection

If the unit is turned off, wait 3 minutes before restarting. This allows pressure inside the compressor to equalize.

● Anti-cold protection(heat pump series only)

The unit is designed not to blow cold air at HEAT mode, when the indoor heat exchanger is in one of the following three situations and the set temperature has not been reached.

1). At the start of heating operation. 2). Defrosting 3). Low temperature heating

● Defrosting (for heat pump series only)

Frost may be generated on the outdoor unit during heat cycle when outdoor temperature is low and humidity is high resulting in lower heating efficiency of the air conditioner.

1). When defrosting, the indoor and outdoor fan both stop running.

2). The time for defrosting may vary from 4 to 10 minutes according to the outdoor temperature and the amount of frost buildup on the outdoor unit.

3). When defrosting, you may find steam coming out from the outdoor unit. It's normal resulting from quick defrosting.

4). During this condition air conditioner will stop heating operation and start defrosting automatically.

MAINTENANCE AND SERVICE

2. White mist coming out from the indoor unit

- A white mist may generate due to a large temperature difference between air inlet and outlet on COOL mode in an indoor environment that has a high relative humidity.
- A white mist may generate due to moisture generated from defrosting process when the air conditioner restarts in HEAT mode operation after defrosting.

3. Low noise of the air conditioner

- You may hear a low hissing sound when the compressor is running or has just stopped running. This sound is made by the refrigerant flowing or coming to a stop.
- You can also hear a low "squeak" sound when the compressor is running or has just stopped running. This is caused by heat expansion and cold extraction of the plastic parts in the unit when the temperature is changing.

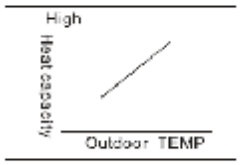
4. Dust is blown out from the indoor unit.
   This is normal condition when the air conditioner has not been used for a long time or during first use of the unit.

5. A peculiar smell comes out from the indoor unit.
   This is caused by the indoor unit giving off smells permeated from building material, from furniture, or smoke.

6. The air conditioner turns to FAN only mode from COOL or HEAT(for heat pump series only)mode.
   When indoor temperature reaches the set temperature, the compressor will stop automatically and the unit turns to FAN mode. The compressor will start again when the indoor temperature rises at COOL mode or falls at HEAT mode to the set point.

7. Dripping water may generate on the surface of the indoor unit when cooling in a high relatively humidity(relative humidity higher than 80%). Select HIGH speed.

8. Heating mode (for heat pump series only)
   The air conditioner draws in heat from the outdoor unit and releases it via the indoor unit during heating operation. When the outdoor temperature falls, heat drawn in by the air conditioner decreases accordingly. At the same time, heat loading of the air conditioner increases due to larger difference between indoor and outdoor temperature. If a comfortable temperature can't be achieved by the air conditioner, we suggest you use a supplementary heating device.



CLEAN

⚠ Warning: be sure to stop the air conditioner and disconnect the power supply before cleaning.

CLEANING THE AIR FILTER

- Remove the air filters, wash them with water, or clean them with a vacuum cleaner.
- If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water. Do not immerse it in warm water above 50°C.
- Dry up the air filter in the shade.

MAINTENANCE

1. If the air conditioner is not to be used for long periods of time.

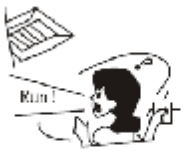
- Set the fan going for 3-4 hours to dry out the inside thoroughly.
- Switch off the air conditioner and disconnect the power supply.

2. If you have not used the air conditioner for long periods of time.

- Clean the air filters and the indoor unit. Before cleaning, be sure to stop operation and disconnect the power supply.
  Wipe the indoor unit with a piece of dry cloth. For cleaning, do not use water hotter than 40°C, benzine, gasoline, thinner or other volatile oil, grinded power, insecticide, etc.
- Confirm no obstruction at the air inlet and outlet of the indoor and outdoor unit.
- Check the grounded wire and switch on the power supply.

TROUBLE SHOOTING

Before seeking repair of service, please firstly check the following.

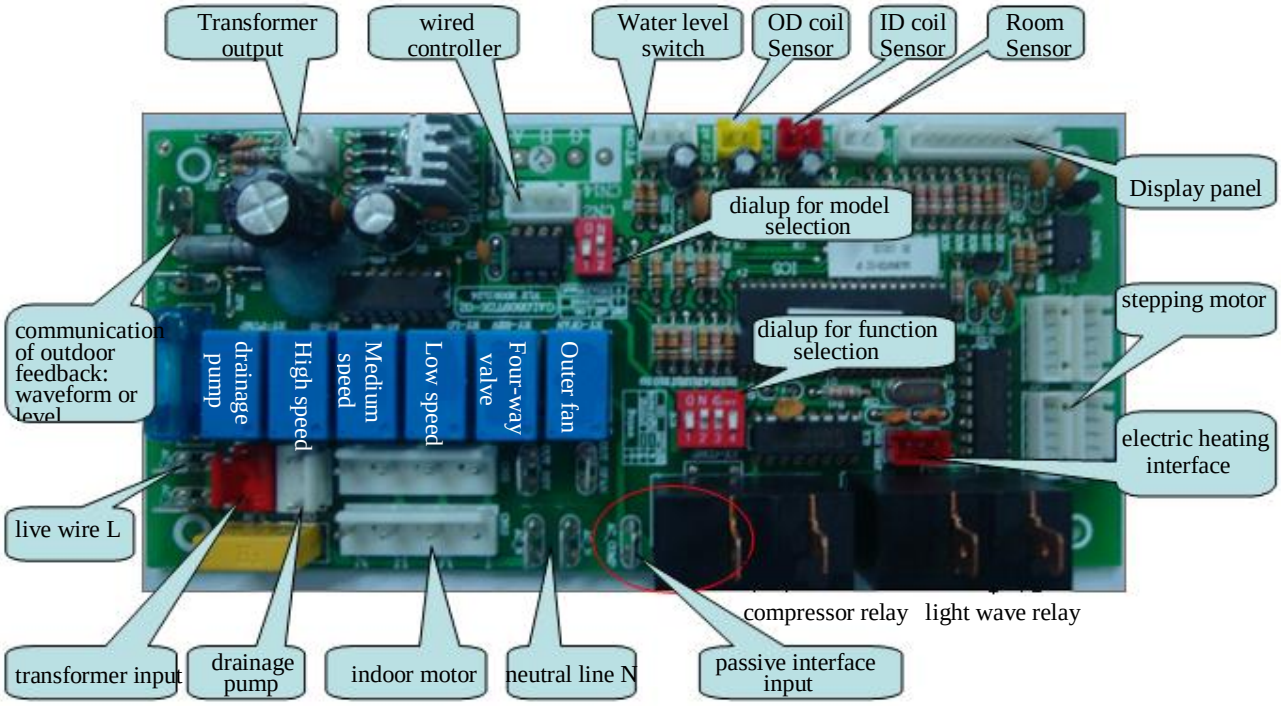
Cases	Probable Causes
The outdoor unit ● White misty cool air or water. ● "Bush"sound. The indoor unit ● Gives out odour.  	● Defrosting is activated and the outdoor fan stops. ● Sound may be made by solenoid valve when defrosting starts or ends. ● Sound of refrigerant flowing. ● "Bush"sound may be heard during operation, this is caused by heat expansion or cool contraction of the heat exchanger. ● Air conditioner may have absorbed odours from wall, carpet, cigarettes, furniture and again blows out.
The unit automatically run or stop.	● Failure operation of the timer.
 ● The air conditioner does not run.	● Power failure. ● Manual power switch is not open. ● Fuse blown. ● Protection device is activated. ● AUTO-ON/OFF time is reached.
● Insufficient heating or cooling.  	● The air inlet and outlet of the outdoor unit are blocked. ● Windows and doors are not closed. ● The air filter is clogged with dirt and dust. ● The outlet guide blade is positioned correctly. ● Fan speed is selected LOW Operation mode is selected FAN. ● Is set temperature suitable? ● COOL and HEAT mode are selected simultaneously.

Part 4 Control System

4.1 Electric Control Board

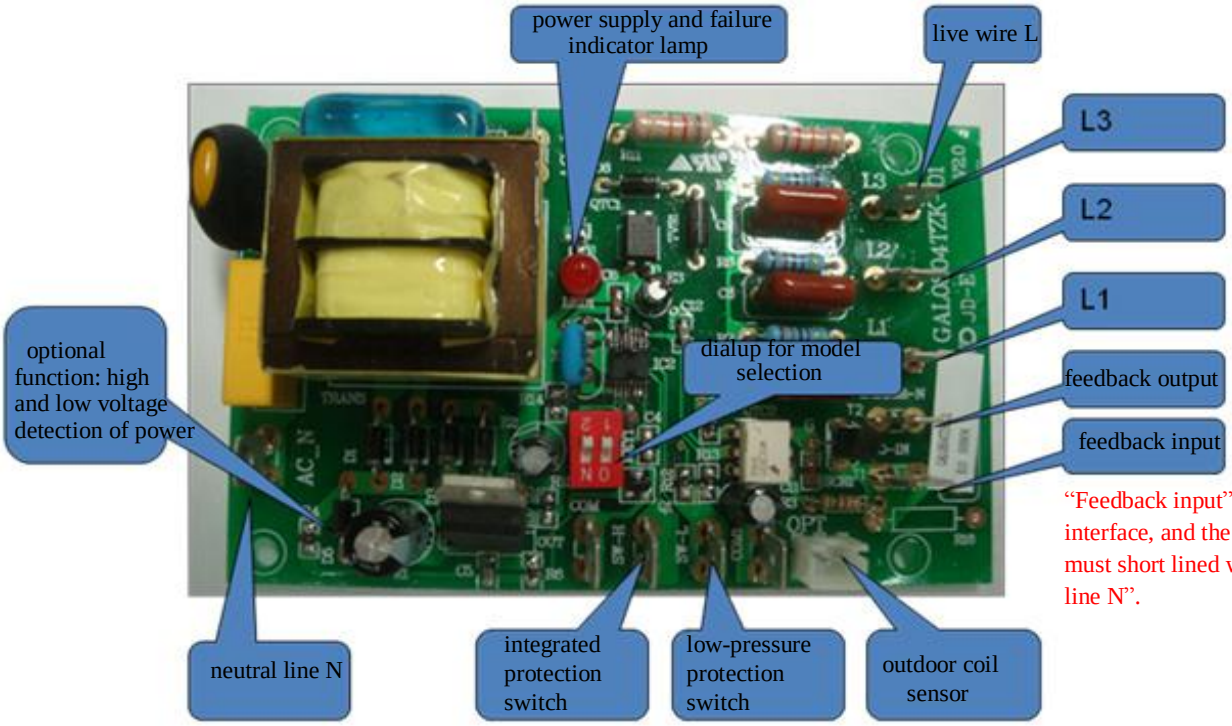
4.1.1 Indoor Universal PCB:

GAL0809TZK-02J(G) or GAL0809TZK-02B(G)



4.1.2 Outdoor PCB(220V control):

GAL0804TZK-01(G) or GAL0804TZK-01B(G)



4.2 Explanation of the DIP jumps on the indoor mainboard

4.2.1 For Four-way Cassette Unit

For 2 digits switches

No.	Setting items	DIP1	DIP2	Consequence	Remarks
1	Use function setting	ON	---	Cooling only type	
		OFF	---	Heat pump type	
2	Communication mode	---	ON	Wave communication	**For 24V outdoor unit control mode, only OFF position can be selected.**
		---	OFF	Level communication	

For 4 digits switches

No.	Setting items	DIP1	DIP2	DIP3	DIP4	Consequence
1	Model Setting	ON	OFF	ON	---	18K
		OFF	ON	ON	---	24K/36K/42K/48K
2	light-wave generator or crankcase heater	---	---	---	ON	Equipped
		---	---	---	OFF	Unequipped

4.2.2 For floor ceiling unit

For 2 digits switches

No.	Setting items	DIP1	DIP2	Consequence	Remark
1	Model type setting	ON	---	Cooling only type	
		OFF	---	Heat pump type	
2	Communication mode	—	ON	Wave communication	**For 24V outdoor unit control mode, only ON position can be selected.**
		—	OFF	Level communication	

For 4 digits switches

No.	Setting items	DIP1	DIP2	DIP3	DIP4	Consequence
1	Drainage pump function setting	OFF	OFF	ON	—	With drainage pump
		OFF	OFF	OFF	—	Without drainage pump
2	Light-wave generator or crankcase heater	OFF	OFF	—	ON	Equipped
		OFF	OFF	—	OFF	Unequipped

4.2.3 For Duct Unit

For 2 digits switches

	No.	Setting items	DIP1	DIP2	Consequence	Remarks
	1	Use function setting	ON	---	Cooling only type	
			OFF	---	Heat pump type	
	2	Communication mode	---	ON	Wave communication	**For 24V outdoor unit control mode, only OFF position can be selected.**
			---	OFF	Level communication	

For 4 digits switches

	No.	Setting items	DIP1	DIP2	DIP3	DIP4	Consequence
	1	Drainage pump function setting	OFF	ON	ON	---	With drainage pump
			OFF	ON	OFF	---	Without drainage pump
	2	light-wave generator or crankcase heater	OFF	ON	---	ON	Equipped
			OFF	ON	---	OFF	Unequipped

4.3 Controller

Item		Model name	Image	Function	Applicable model
Remote Controller	Standard type				
	Luxury type				
Wire Controller	Common type	ZP-DX010			Four-way cassette Ceiling floor Low static pressure duct Medium static pressure duct High static pressure duct
	With signal receiver	ZP-DX011			
	With weekly timer	ZP-DX012