

# TQSDT



## Service Manual

Models: TW09HQ1C8D  
TW12HQ1C8D  
TW18HQ1C8D  
TW24HQ1C8D  
TW09HQ1B8A  
TW12HQ1B8A  
TW09CQ2B8D  
TW12CQ2B8D  
TW09HQ2C2D  
TW12HQ2C2D  
TW18HQ2C2D  
TW24HQ2C2D  
(Refrigerant R410A)

**GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI**

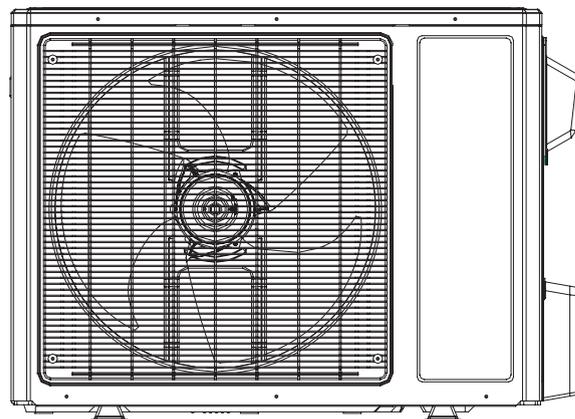
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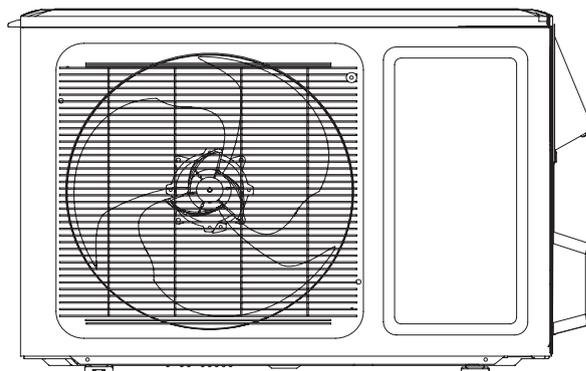




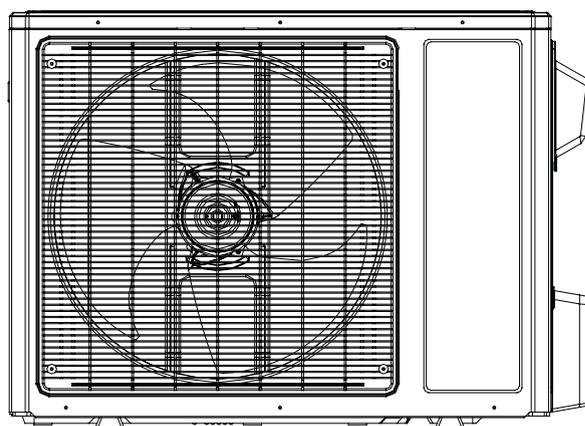
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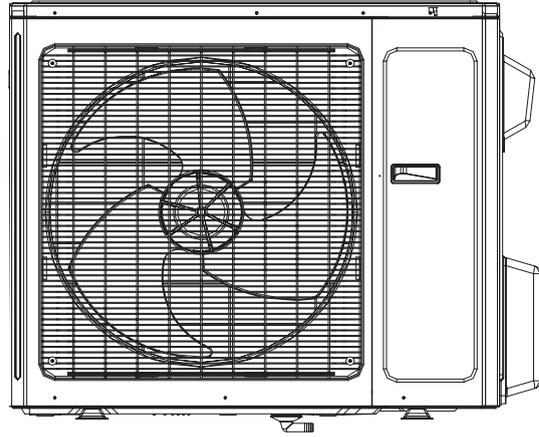
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TW12HQ1B8A/O  
TW09CQ2B8DO  
TW12CQ2B8DO  
TW09HQ2C2DO  
TW12HQ2C2DO



TW18HQ2C2DO



TW24HQ2C2DO



**Remote Controller**

YAN1F1F



YAN1F6F(WiFi)



**Model list:**

No.	Model	Product Code	Indoor Unit	Indoor Unit Product Code	Outdoor Unit	Outdoor Unit Product Code	Remote Controller
1	TW09HQ1C8D	CB456000400_L59684	TW09HQ1C8D/I	CB427W02200_L59684	TW09HQ1C8D/O	CB456N00400_L59684	YAN1F1F
2	TW12HQ1C8D	CB456000900_L59684	TW12HQ1C8D/I	CB456N00900_L59684	TW12HQ1C8D/O	CB427W05900_L59684	YAN1F1F
3	TW18HQ1C8D	CB456000300_L59684	TW18HQ1C8D/I	CB456N00300_L59684	TW18HQ1C8D/O	CB427W02000_L59684	YAN1F1F
4	TW24HQ1C8D	CB456000200_L59684	TW24HQ1C8D/I	CB456N00200_L59684	TW24HQ1C8D/O	CB427W02400_L59684	YAN1F1F
5	TW09HQ1B8A	CB438003702_L59684	TW09HQ1B8A/I	CB438N03702_L59684	TW09HQ1B8A/O	CB427W03900_L59684	YAN1F6F(WiFi)
6	TW12HQ1B8A	CB438003902_L59684	TW12HQ1B8A/I	CB438N03902_L59684	TW12HQ1B8A/O	CB427W03700_L59684	YAN1F6F(WiFi)
7	TW09CQ2B8D	CB438000300_L91250	TW09CQ2B8D/I	CB438N00300_L91250	TW09CQ2B8D/O	CB419W04200_L91250	YAN1F1F
8	TW12CQ2B8D	CB438000200_L91250	TW12CQ2B8D/I	CB438N00200_L91250	TW12CQ2B8D/O	CB419W04400_L91250	YAN1F1F
9	TW09HQ2C2D	CB439005801_X18545	TW09HQ2C2D/I	CB439N05801_X18545	TW09HQ2C2D/O	CB419W04300_X18545	YAN1F6F(WiFi)
10	TW12HQ2C2D	CB439005601_X18545	TW12HQ2C2D/I	CB439N05601_X18545	TW12HQ2C2D/O	CB419W04500_X18545	YAN1F6F(WiFi)
11	TW18HQ2C2D	CB439005901_X18545	TW18HQ2C2D/I	CB439N05901_X18545	TW18HQ2C2D/O	CB419W06700_X18545	YAN1F6F(WiFi)
12	TW24HQ2C2D	CB439005701_X18545	TW24HQ2C2D/I	CB439N05701_X18545	TW24HQ2C2D/O	CB419W03600_X18545	YAN1F6F(WiFi)

## 2. Specifications

### 2.1 Specification Sheet

Model		TW09HQ1C8D
Product Code		CB456000400_L59684
Power Supply	Rated Voltage	V~ 208/230
	Rated Frequency	Hz 60
	Phases	1
Power Supply Mode		Outdoor
Cooling Capacity(Min~Max)	Btu/h	9000(3100~9600)
Heating Capacity(Min~Max)	Btu/h	9500(3100~12000)
Cooling Power Input(Min~Max)	W	900(375~1300)
Heating Power Input(Min~Max)	W	800(300~1350)
Cooling Power Current	A	4
Heating Power Current	A	3.6
Rated Input	W	1350
Rated Current	A	6.0
Air Flow Volume(SH/H/M/L)	CFM	318/288/241/171
Dehumidifying Volume	Pint/h	1.69
EER	(Btu/h)/W	10.00
COP	(Btu/h)/W	11.88
SEER		16.00
HSPF		9.00
Application Area	yd <sup>2</sup>	14.35-21.53
Indoor Unit	Model of indoor unit	TW09HQ1C8D/I
	Indoor Unit Product Code	CB456N00400_L59684
	Fan Type	Cross-flow
	Diameter Length(DXL)	inch $\Phi 3\ 7/8 \times 22\ 13/16$
	Fan Motor Cooling Speed(SH/H/M/L)	r/min 1350/1200/1050/750
	Fan Motor Heating Speed(SH/H/M/L)	r/min 1350/1200/1050/850
	Output of Fan Motor	W 20
	Fan Motor RLA	A 0.2
	Fan Motor Capacitor	$\mu$ F 1
	Evaporator Form	Aluminum Fin-copper Tube
	Pipe Diameter	inch $\Phi 3/16$
	Row-fin Gap	inch 2-1/16
	Coil Length (LXDXW)	inch 23X7/8X10 1/2
	Swing Motor Model	MP24AA
	Output of Swing Motor	W 1.5
	Fuse	A 3.15
	Sound Pressure Level(SH/H/M/L)	dB (A) 43/38/34/28
	Sound Power Level(SH/H/M/L)	dB (A) 53/48/44/38
	Dimension (WXHXD)	inch 31 1/8X10 7/8X7 7/8
	Dimension of Carton Box (LXWXH)	inch 34X10 9/16X13 7/8
	Dimension of Package (LXWXH)	inch 34X10 11/16X14 7/16
Net Weight	lb 19.8	
Gross Weight	lb 24.3	

Outdoor Unit	Model of Outdoor Unit		TW09HQ1C8D/O
	Outdoor Unit Product Code		CB427W02200_L59684
	Compressor Manufacturer/Trademark		ZHUHAI GREE DAIKIN DEVICE CO.,LTD
	Compressor Model		1GDY23AXD
	Compressor Oil		DAPHNE FVC50K
	Compressor Type		Swing
	Compressor Locked Rotor Amp (L.R.A)	A	/
	Compressor RLA	A	6.6
	Compressor Power Input	W	845
	Overload Protector		KSD115°C or HPC115/95
	Throttling Method		Capillary
	Operation temp	°F	60.8~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	-4~75
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ5/16
	Rows-fin Gap	inch	1-1/16
	Coil Length (LXD <sub>X</sub> W)	inch	28X3/4X20
	Fan Motor Speed	rpm	820
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.37
	Fan Motor Capacitor	μF	2.5
	Air Flow Volume of Outdoor Unit	CFM	942
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ15 3/4
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	620
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	360
	Sound Pressure Level (H/M/L)	dB (A)	52/-/-
Sound Power Level (H/M/L)	dB (A)	62/-/-	
Dimension (WXHXD)	inch	30 9/16X21 1/4X12 5/8	
Dimension of Carton Box (LXWXH)	inch	33 3/8X14 3/16X22 13/16	
Dimension of Package (LXWXH)	inch	33 1/2X14 5/16X23 7/16	
Net Weight	lb	65.0	
Gross Weight	lb	70.6	
Refrigerant		R410A	
Refrigerant Charge	oz	24.7	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ3/8
	Max Distance Height	ft	32.8
	Max Distance Length	ft	49.2
Note:The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW12HQ1C8D	
Product Code			CB456000900_L59684	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		12000(3753~12500)	
Heating Capacity(Min~Max)	Btu/h		13000(3924~14000)	
Cooling Power Input(Min~Max)	W		1300(410~1350)	
Heating Power Input(Min~Max)	W		1250(380~1500)	
Cooling Power Current	A		5.8	
Heating Power Current	A		5.6	
Rated Input	W		1500	
Rated Current	A		6.7	
Air Flow Volume(SH/H/M/L)	CFM		400/318/253/194	
Dehumidifying Volume	Pint/h		2.96	
EER	(Btu/h)/W		9.23	
COP	(Btu/h)/W		10.40	
SEER			16.00	
HSPF			9.00	
Application Area	yd <sup>2</sup>		19.14-28.70	
Indoor Unit	Model of indoor unit		TW12HQ1C8D/I	
	Indoor Unit Product Code		CB456N00900_L59684	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ3 7/8X25
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1350/1200/1000/800/-
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1350/1200/1000/900/-
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.31
	Fan Motor Capacitor	μF		1.5
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ3/16
	Row-fin Gap	inch		2-1/16
	Coil Length (LXDXW)	inch		25X7/8X12 1/16
	Swing Motor Model			MP24BA
	Output of Swing Motor	W		1.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		45/39/35/29/-
	Sound Power Level(SH/H/M/L)	dB (A)		55/49/45/39/-
	Dimension (WXHDX)	inch		33 1/4X11 3/8X8 1/4
	Dimension of Carton Box (LXWXH)	inch		36 1/8X11X14 5/16
	Dimension of Package (LXWXH)	inch		36 1/4X11 1/16X15
Net Weight	lb		22.05	
Gross Weight	lb		26.46	



Model			TW18HQ1C8D	
Product Code			CB456000300_L59684	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		18000	
Heating Capacity(Min~Max)	Btu/h		19000	
Cooling Power Input(Min~Max)	W		1920	
Heating Power Input(Min~Max)	W		2000	
Cooling Power Current	A		8.5	
Heating Power Current	A		8.9	
Rated Input	W		2600	
Rated Current	A		11.54	
Air Flow Volume(SH/H/M/L)	CFM		471/403/341/282	
Dehumidifying Volume	Pint/h		3.80	
EER	(Btu/h)/W		9.37	
COP	(Btu/h)/W		9.50	
SEER			16.00	
HSPF			9.00	
Application Area	yd <sup>2</sup>		27.50-40.66	
Indoor Unit	Model of indoor unit		TW18HQ1C8D/I	
	Indoor Unit Product Code		CB456N00300_L59684	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ4 1/6×27 4/5
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1350/1200/1050/900
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1300/1200/1100/900
	Output of Fan Motor	W		30
	Fan Motor RLA	A		0.30
	Fan Motor Capacitor	μF		2.5
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ5/16
	Row-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		28 1/7×1×12
	Swing Motor Model			MP35CJ
	Output of Swing Motor	W		2.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		46/42/39/35/-
	Sound Power Level(SH/H/M/L)	dB (A)		56/52/49/45/-
	Dimension (WXHXD)	inch		38 3/16X11 13/16X8 13/16
	Dimension of Carton Box (LXWXH)	inch		40 7/8X15X12
Dimension of Package (LXWXH)	inch		41X15X12 5/8	
Net Weight	lb		29.8	
Gross Weight	lb		36.4	

Outdoor Unit	Model of Outdoor Unit		TW18HQ1C8D/O
	Outdoor Unit Product Code		CB427W02000_L59684
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXA-B141zF030A
	Compressor Oil		RB68EP
	Compressor Type		Rotary
	Compressor Locked Rotor Amp (L.R.A)	A	25.00
	Compressor RLA	A	12.08
	Compressor Power Input	W	1440
	Overload Protector		1NT11L-6233 or KSD115°C or HPC115/95U1
	Throttling Method		Capillary
	Operation temp	°F	61~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	-4~75
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ3/8
	Rows-fin Gap	inch	1-1/18
	Coil Length (LXDXW)	inch	33 5/8×26× 6/7
	Fan Motor Speed	rpm	800
	Output of Fan Motor	W	60
	Fan Motor RLA	A	0.52
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	1883
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ20 1/2
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	240
	Sound Pressure Level (H/M/L)	dB (A)	59/-/-
	Sound Power Level (H/M/L)	dB (A)	69/-/-
Dimension (WXHXD)	inch	38X27 9/16X15 5/8	
Dimension of Carton Box (LXWXH)	inch	40 3/8X17 7/8X29	
Dimension of Package (LXWXH)	inch	40 1/2X18X29 1/2	
Net Weight	lb	95.9	
Gross Weight	lb	105.8	
Refrigerant		R410A	
Refrigerant Charge	oz	49.4	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ1/2
	Max Distance Height	ft	32.8
	Max Distance Length	ft	82.0
Note:The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW24HQ1C8D	
Product Code			CB456000200_L59684	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		22000	
Heating Capacity(Min~Max)	Btu/h		23000	
Cooling Power Input(Min~Max)	W		2260	
Heating Power Input(Min~Max)	W		2300	
Cooling Power Current	A		10.03	
Heating Power Current	A		10.20	
Rated Input	W		2750	
Rated Current	A		11.98	
Air Flow Volume(SH/H/M/L)	CFM		706/647/588/530	
Dehumidifying Volume	Pint/h		5.28	
EER	(Btu/h)/W		9.73	
COP	(Btu/h)/W		10.00	
SEER			16.00	
HSPF			9.00	
Application Area	yd <sup>2</sup>		32.29-50.23	
Indoor Unit	Model of indoor unit		TW24HQ1C8D/I	
	Indoor Unit Product Code		CB456N00200_L59684	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ4 1/4×32 7/10
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1250/1100/900/800
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1150/1000/900/850
	Output of Fan Motor	W		30
	Fan Motor RLA	A		0.32
	Fan Motor Capacitor	μF		3
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		0.286
	Row-fin Gap	inch		2-1/17
	Coil Length (LXDXW)	inch		33 1/4×1×13 1/2
	Swing Motor Model			MP35CJ
	Output of Swing Motor	W		2.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		48/44/40/36/-
	Sound Power Level(SH/H/M/L)	dB (A)		58/54/50/46/-
	Dimension (WXHXD)	inch		42 7/16X12 13/16X9 11/16
	Dimension of Carton Box (LXWXH)	inch		45X16 1/8X13 3/16
Dimension of Package (LXWXH)	inch		45 3/16X16 1/4X13 3/4	
Net Weight	lb		37.5	
Gross Weight	lb		45.2	

Outdoor Unit	Model of Outdoor Unit		TW24HQ1C8D/O	
	Outdoor Unit Product Code		CB427W02400_L59684	
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD	
	Compressor Model		QXA-B141zF030A	
	Compressor Oil		RB68EP	
	Compressor Type		Rotary	
	Compressor Locked Rotor Amp (L.R.A)	A		25.00
	Compressor RLA	A		12.18
	Compressor Power Input	W		1440
	Overload Protector			1NT11L-6233 or KSD115°C or HPC115/95U1
	Throttling Method			Capillary
	Operation temp	°F		61~86
	Ambient temp (cooling)	°F		0~115
	Ambient temp (heating)	°F		-4~75
	Condenser Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ3/8
	Rows-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		33 1/3×1 3/4×26
	Fan Motor Speed	rpm		800
	Output of Fan Motor	W		60
	Fan Motor RLA	A		0.4
	Fan Motor Capacitor	μF		/
	Air Flow Volume of Outdoor Unit	CFM		1883
	Fan Type			Axial-flow
	Fan Diameter	inch		Φ20 1/2
	Defrosting Method			Automatic Defrosting
	Climate Type			T1
	Isolation			I
	Moisture Protection			IP24
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG		550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG		240
	Sound Pressure Level (H/M/L)	dB (A)		59/-/-
	Sound Power Level (H/M/L)	dB (A)		69/-/-
Dimension (WXHXD)	inch		38X27 9/16X15 5/8	
Dimension of Carton Box (LXWXH)	inch		40 3/8X17 7/8X29	
Dimension of Package (LXWXH)	inch		40 1/2X18X29 1/2	
Net Weight	lb		110.2	
Gross Weight	lb		120.2	
Refrigerant			R410A	
Refrigerant Charge	oz		65.27	
Connection Pipe	Length	ft	24.6	
	Gas Additional Charge	oz/ft	0.5	
	Outer Diameter Liquid Pipe	inch	Φ1/4	
	Outer Diameter Gas Pipe	inch	Φ5/8	
	Max Distance Height	ft	32.8	
	Max Distance Length	ft	82.0	
Note:The connection pipe applies metric diameter.				

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model		TW09HQ1B8A
Product Code		CB438N03702_L59684
Power Supply	Rated Voltage	V~ 115
	Rated Frequency	Hz 60
	Phases	1
Power Supply Mode		Outdoor
Cooling Capacity(Min~Max)	Btu/h	9000(2764~10918)
Heating Capacity(Min~Max)	Btu/h	9600(2081~12263)
Cooling Power Input(Min~Max)	W	895(350~1270)
Heating Power Input(Min~Max)	W	852(280~1250)
Cooling Power Current	A	10.93
Heating Power Current	A	10.20
Rated Input	W	1270
Rated Current	A	11.27
Air Flow Volume(SH/H/M/L)	CFM	318/288/241/171
Dehumidifying Volume	Pint/h	1.69
EER	(Btu/h)/W	10.06
COP	(Btu/h)/W	11.25
SEER		16.00
HSPF		9.00
Application Area	yd <sup>2</sup>	14.35-21.53
Indoor Unit	Model of indoor unit	TW09HQ1B8A/I
	Indoor Unit Product Code	CB435N02001
	Fan Type	Cross-flow
	Diameter Length(DXL)	inch $\Phi$ 3 7/8X22 13/16
	Fan Motor Cooling Speed(SH/H/M/L)	r/min 1350/1200/1050/750
	Fan Motor Heating Speed(SH/H/M/L)	r/min 1350/1200/1050/850
	Output of Fan Motor	W 20
	Fan Motor RLA	A 0.24
	Fan Motor Capacitor	$\mu$ F 4
	Evaporator Form	Aluminum Fin-copper Tube
	Pipe Diameter	inch $\Phi$ 3/16
	Row-fin Gap	inch 2-1/16
	Coil Length (LXDXW)	inch 23X7/8X10 8/16
	Swing Motor Model	MP24AA
	Output of Swing Motor	W 1.5
	Fuse	A 3.15
	Sound Pressure Level(SH/H/M/L)	dB (A) 42/38/34/28
	Sound Power Level(SH/H/M/L)	dB (A) 52/49/45/39
	Dimension (WXHXD)	inch 31 1/8X10 13/16X7 7/8
	Dimension of Carton Box (LXWXH)	inch 34X10 9/16X13 7/8
Dimension of Package (LXWXH)	inch 34 1/8X10 11/16X14 7/16	
Net Weight	lb 19.84	
Gross Weight	lb 24.25	

Outdoor Unit	Model of Outdoor Unit		TW09HQ1B8A/O
	Outdoor Unit Product Code		CB427W03900_L59684
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXA-A091zE190
	Compressor Oil		FVC68D or RB 68EP
	Compressor Type		Rotary
	Compressor Locked Rotor Amp (L.R.A)	A	/
	Compressor RLA	A	12.62
	Compressor Power Input	W	980
	Overload Protector		1NT11L-6233 or KSD115°C or HPC115/95U1
	Throttling Method		Capillary
	Operation temp	°F	61~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	-4~75
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ1/4
	Rows-fin Gap	inch	2-1/16
	Coil Length (LXD <sub>X</sub> W)	inch	29 3/4X3/4X20
	Fan Motor Speed	rpm	850
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.24
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	1059
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ15 3/4
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	240
	Sound Pressure Level (H/M/L)	dB (A)	53/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-
Dimension (WXHXD)	inch	33 3/8X21 1/4X12 5/8	
Dimension of Carton Box (LXWXH)	inch	34 9/16X14 3/16X22 13/16	
Dimension of Package (LXWXH)	inch	34 11/16X14 5/16X23 7/16	
Net Weight	lb	62.83	
Gross Weight	lb	68.34	
Refrigerant		R410A	
Refrigerant Charge	oz	24.7	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ3/8
	Max Distance Height	ft	32.8
	Max Distance Length	ft	49.2
Note:The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW12HQ1B8A
Product Code			CB438003902_L59684
Power Supply	Rated Voltage	V~	115
	Rated Frequency	Hz	60
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity(Min~Max)		Btu/h	12000(3753~12500)
Heating Capacity(Min~Max)		Btu/h	13000(3412~15013)
Cooling Power Input(Min~Max)		W	1193(380~1300)
Heating Power Input(Min~Max)		W	1250(350~1350)
Cooling Power Current		A	12.40
Heating Power Current		A	13.50
Rated Input		W	1350
Rated Current		A	13.20
Air Flow Volume(SH/H/M/L)		CFM	400/318/241/194
Dehumidifying Volume		Pint/h	2.96
EER		(Btu/h)/W	10.06
COP		(Btu/h)/W	10.40
SEER			16
HSPF			9
Application Area		yd <sup>2</sup>	19.14-28.70
Indoor Unit	Model of indoor unit		TW12HQ1B8A/I
	Indoor Unit Product Code		CB438N03902_L59684
	Fan Type		Cross-flow
	Diameter Length(DXL)		inch Φ3 7/8X24 15/16
	Fan Motor Cooling Speed(SH/H/M/L)		r/min 1350/1200/1000/800
	Fan Motor Heating Speed(SH/H/M/L)		r/min 1350/1200/1000/900
	Output of Fan Motor		W 20
	Fan Motor RLA		A 0.25
	Fan Motor Capacitor		μF 4
	Evaporator Form		Aluminum Fin-copper Tube
	Pipe Diameter		inch Φ3/16
	Row-fin Gap		inch 2-1/16
	Coil Length (LXDXW)		inch 25X7/8X12 1/16
	Swing Motor Model		MP24BA
	Output of Swing Motor		W 1.5
	Fuse		A 3.15
	Sound Pressure Level(SH/H/M/L)		dB (A) 43/39/35/29
	Sound Power Level(SH/H/M/L)		dB (A) 53/49/45/39
	Dimension (WXHXD)		inch 33 1/4X11 3/8X8 1/4
	Dimension of Carton Box (LXWXH)		inch 36 1/8X10 15/16X14 5/16
Dimension of Package (LXWXH)		inch 36 1/4X11 1/16X14 15/16	
Net Weight		lb 23.15	
Gross Weight		lb 27.56	

Outdoor Unit	Model of Outdoor Unit		TW12HQ1B8A/O
	Outdoor Unit Product Code		CB427W03700_L59684
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO.,LTD
	Compressor Model		QXA-A091zE190
	Compressor Oil		FVC68D or RB 68EP
	Compressor Type		Rotary
	Compressor Locked Rotor Amp (L.R.A)	A	/
	Compressor RLA	A	15.23
	Compressor Power Input	W	980
	Overload Protector		1NT11L-6233 or KSD115°C or HPC115/95U1
	Throttling Method		Capillary
	Operation temp	°F	61~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	-4~75
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ1/4
	Rows-fin Gap	inch	2-1/16
	Coil Length (LXDXW)	inch	28X1 1/2X20
	Fan Motor Speed	rpm	850
	Output of Fan Motor	W	30
	Fan Motor RLA	A	0.23
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	1059
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ15 3/4
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	550
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	240
	Sound Pressure Level (H/M/L)	dB (A)	53/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-
Dimension (WXHXD)	inch	33 3/8X21 1/4X12 5/8	
Dimension of Carton Box (LXWXH)	inch	34 9/16X14 3/16X22 13/16	
Dimension of Package (LXWXH)	inch	34 11/16X14 5/16X23 7/16	
Net Weight	lb	67.24	
Gross Weight	lb	72.75	
Refrigerant		R410A	
Refrigerant Charge	oz	31.8	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ3/8
	Max Distance Height	ft	32.8
	Max Distance Length	ft	65.6
Note:The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW09CQ2B8D	
Product Code			CB438000300_L91250	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		9000(3100~9600)	
Heating Capacity(Min~Max)	Btu/h		/	
Cooling Power Input(Min~Max)	W		630(160~1300)	
Heating Power Input(Min~Max)	W		/	
Cooling Power Current	A		2.80	
Heating Power Current	A		/	
Rated Input	W		1300	
Rated Current	A		5.8	
Air Flow Volume(SH/H/M/L)	CFM		377/288/241/171	
Dehumidifying Volume	Pint/h		1.69	
EER	(Btu/h)/W		14.29	
COP	(Btu/h)/W		/	
SEER			23.00	
HSPF			/	
Application Area	yd <sup>2</sup>		14.35-21.53	
Indoor Unit	Model of indoor unit		TW09CQ2B8DI	
	Indoor Unit Product Code		CB438N00300_L91250	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ3 55/64X25
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1350/1200/1050/750
	Fan Motor Heating Speed(SH/H/M/L)	r/min		/
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.09
	Fan Motor Capacitor	μF		/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ 2/7
	Row-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		25X7/8X12 1/16
	Swing Motor Model			MP24BA
	Output of Swing Motor	W		1.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		43/39/35/29
	Sound Power Level(SH/H/M/L)	dB (A)		53/49/45/39
	Dimension (WXHxD)	inch		33 1/4X11 3/8X8 7/32
	Dimension of Carton Box (LXWXH)	inch		36 9/64X11X14 21/64
	Dimension of Package (LXWXH)	inch		36 1/4X11X15
Net Weight	lb		22.05	
Gross Weight	lb		26.46	

Outdoor Unit	Model of Outdoor Unit		TW09CQ2B8DO
	Outdoor Unit Product Code		CB419W04200_L91250
	Compressor Manufacturer/Trademark		ZHUHAI GREE DAIKIN DEVICECO.,LTD
	Compressor Model		1GDY23AXD
	Compressor Oil		DAPHNE FVC50K
	Compressor Type		Swing
	Compressor Locked Rotor Amp (L.R.A)	A	/
	Compressor RLA	A	6.6
	Compressor Power Input	W	845
	Overload Protector		KSD115OC or HPC115/95
	Throttling Method		Electron expansion valve
	Operation temp	°F	61~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	/
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ3/8
	Rows-fin Gap	inch	2-1/16
	Coil Length (LXDXW)	inch	29 13/32X1 3/4X20
	Fan Motor Speed	rpm	900
	Output of Fan Motor	W	30
	Fan Motor RLA	A	/
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	1059
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ15 3/4
	Defrosting Method		/
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	4.3
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	2.5
	Sound Pressure Level (H/M/L)	dB (A)	53/-/-
	Sound Power Level (H/M/L)	dB (A)	63/-/-
	Dimension (WXHXD)	inch	33 13/32X21 1/4X12 19/32
Dimension of Carton Box (LXWXH)	inch	34 37/64X14 3/16X22 13/16	
Dimension of Package (LXWXH)	inch	34 43/64X14 9/32X23 27/64	
Net Weight	lb	72.75	
Gross Weight	lb	78.26	
Refrigerant		R410A	
Refrigerant Charge	oz	45.86	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ3/8
	Max Distance Height	ft	32.8
	Max Distance Length	ft	49.2
Note:The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW12CQ2B8D	
Product Code			CB438000200_L91250	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		12000(3100~13000)	
Heating Capacity(Min~Max)	Btu/h		/	
Cooling Power Input(Min~Max)	W		923(200~1350)	
Heating Power Input(Min~Max)	W		/	
Cooling Power Current	A		4.50	
Heating Power Current	A		/	
Rated Input	W		1350	
Rated Current	A		6.0	
Air Flow Volume(SH/H/M/L)	CFM		400/288/241/171	
Dehumidifying Volume	Pint/h		2.96	
EER	(Btu/h)/W		12.50	
COP	(Btu/h)/W		/	
SEER			22.00	
HSPF			/	
Application Area	yd <sup>2</sup>		19.14-28.70	
Indoor Unit	Model of indoor unit		TW12CQ2B8DI	
	Indoor Unit Product Code		CB438N00200_L91250	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ3 55/64X25
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1400/1200/1050/800
	Fan Motor Heating Speed(SH/H/M/L)	r/min		/
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.09
	Fan Motor Capacitor	μF		/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ2/7
	Row-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		25X7/8X12 1/16
	Swing Motor Model			MP24BA
	Output of Swing Motor	W		1.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		45/39/35/29
	Sound Power Level(SH/H/M/L)	dB (A)		55/49/45/39
	Dimension (WXHXD)	inch		33 1/4X11 3/8X8 7/32
	Dimension of Carton Box (LXWXH)	inch		36 9/64X11X14 21/64
Dimension of Package (LXWXH)	inch		36 1/4X11X15	
Net Weight	lb		22.05	
Gross Weight	lb		26.46	

Outdoor Unit	Model of Outdoor Unit		TW12CQ2B8DO
	Outdoor Unit Product Code		CB419W04400_L91250
	Compressor Manufacturer/Trademark		ZHUHAI GREE DAIKIN DEVICEDO.,LTD
	Compressor Model		1GDY23AXD
	Compressor Oil		DAPHNE FVC50K
	Compressor Type		Swing
	Compressor Locked Rotor Amp (L.R.A)	A	/
	Compressor RLA	A	6.6
	Compressor Power Input	W	845
	Overload Protector		KSD115OC or HPC115/95
	Throttling Method		Electron expansion valve
	Operation temp	°F	61~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	/
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ3/8
	Rows-fin Gap	inch	2-1/16
	Coil Length (LXDXW)	inch	29 13/32X1 3/4X22
	Fan Motor Speed	rpm	900
	Output of Fan Motor	W	30
	Fan Motor RLA	A	/
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	1177
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ15 3/4
	Defrosting Method		/
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	4.3
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	2.5
	Sound Pressure Level (H/M/L)	dB (A)	54/-/-
	Sound Power Level (H/M/L)	dB (A)	64/-/-
Dimension (WXHXD)	inch	33 13/32X21 1/4X12 19/32	
Dimension of Carton Box (LXWXH)	inch	34 37/64X14 3/16X22 13/16	
Dimension of Package (LXWXH)	inch	34 43/64X14 9/32X23 27/64	
Net Weight	lb	80.47	
Gross Weight	lb	87.08	
Refrigerant		R410A	
Refrigerant Charge	oz	47.62	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ1/2
	Max Distance Height	ft	32.8
	Max Distance Length	ft	65.6
Note:The connection pipe applies metric diameter.			

The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW09HQ2C2D	
Product Code			CB439005801_X18545	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		9000(3100~9600)	
Heating Capacity(Min~Max)	Btu/h		11000(1911~12000)	
Cooling Power Input(Min~Max)	W		630(160~1300)	
Heating Power Input(Min~Max)	W		1020(160~1350)	
Cooling Power Current	A		2.80	
Heating Power Current	A		3.50	
Rated Input	W		1350	
Rated Current	A		6.0	
Air Flow Volume(SH/H/M/L)	CFM		377/288/241/171	
Dehumidifying Volume	Pint/h		1.69	
EER	(Btu/h)/W		14.29	
COP	(Btu/h)/W		10.78	
SEER			23.00	
HSPF			10.50	
Application Area	yd <sup>2</sup>		14.35-21.53	
Indoor Unit	Model of indoor unit		TW09HQ2C2DI	
	Indoor Unit Product Code		CB439N05801_X18545	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ3 55/64X25
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1350/1200/1050/750
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1300/1150/1000/900
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.09
	Fan Motor Capacitor	μF		/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ3/16
	Row-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		25X7/8X12 1/16
	Swing Motor Model			MP24BA
	Output of Swing Motor	W		1.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		43/39/35/29
	Sound Power Level(SH/H/M/L)	dB (A)		53/49/45/39
	Dimension (WXHXD)	inch		33 1/4X11 3/8X8 1/4
	Dimension of Carton Box (LXWXH)	inch		36 1/8X11X14 5/16
Dimension of Package (LXWXH)	inch		36 1/4X11X15	
Net Weight	lb		22.05	
Gross Weight	lb		26.46	



Model			TW12HQ2C2D	
Product Code			CB439005601_X18545	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)		Btu/h	12000(3100~13000)	
Heating Capacity(Min~Max)		Btu/h	13000(2400~14000)	
Cooling Power Input(Min~Max)		W	960(200~1350)	
Heating Power Input(Min~Max)		W	1100(400~1400)	
Cooling Power Current		A	4.50	
Heating Power Current		A	5.50	
Rated Input		W	1400	
Rated Current		A	6.3	
Air Flow Volume(SH/H/M/L)		CFM	400/288/241/171	
Dehumidifying Volume		Pint/h	2.96	
EER		(Btu/h)/W	12.5	
COP		(Btu/h)/W	11.82	
SEER			22.00	
HSPF			10.10	
Application Area		yd <sup>2</sup>	19.14-28.70	
Indoor Unit	Model of indoor unit		TW12HQ2C2DI	
	Indoor Unit Product Code		CB439N05601_X18545	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ3 55/64X25
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1400/1200/1050/800
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1400/1200/1000/900
	Output of Fan Motor	W		20
	Fan Motor RLA	A		0.09
	Fan Motor Capacitor	μF		/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ3/16
	Row-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		25X7/8X12 1/16
	Swing Motor Model			MP24BA
	Output of Swing Motor	W		1.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		45/39/35/29
	Sound Power Level(SH/H/M/L)	dB (A)		55/49/45/39
	Dimension (WXHXD)	inch		33 1/4X11 3/8X8 1/4
	Dimension of Carton Box (LXWXH)	inch		36 1/8X11X14 5/16
	Dimension of Package (LXWXH)	inch		36 1/4X11X15
Net Weight	lb		22.05	
Gross Weight	lb		26.46	



Model			TW18HQ2C2D	
Product Code			CB439005901_X18545	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)	Btu/h		18000(6800~20000)	
Heating Capacity(Min~Max)	Btu/h		19800(7340~23500)	
Cooling Power Input(Min~Max)	W		1435(450~2150)	
Heating Power Input(Min~Max)	W		1730(580~2600)	
Cooling Power Current	A		6.37	
Heating Power Current	A		7.68	
Rated Input	W		3000	
Rated Current	A		10.39	
Air Flow Volume(SH/H/M/L)	CFM		559/488/412/335	
Dehumidifying Volume	Pint/h		1.8	
EER	(Btu/h)/W		12.50	
COP	(Btu/h)/W		11.45	
SEER			20	
HSPF			10	
Application Area	yd <sup>2</sup>		27.51-40.66	
Indoor Unit	Model of indoor unit		TW18HQ2C2DI	
	Indoor Unit Product Code		CB439N05901_X18545	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ4 1/6X27 13/16
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1400/1200/1050/800
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1400/1200/1100/900
	Output of Fan Motor	W		60
	Fan Motor RLA	A		0.24
	Fan Motor Capacitor	μF		/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ9/32
	Row-fin Gap	inch		2-1/18
	Coil Length (LXDXW)	inch		28 9/64X1X12
	Swing Motor Model			MP35CJ
	Output of Swing Motor	W		2.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		47/43/40/39
	Sound Power Level(SH/H/M/L)	dB (A)		57/53/50/49
	Dimension (WXHXD)	inch		38 13/64X11 13/16X8 5/6
	Dimension of Carton Box (LXWXH)	inch		40 55/64X15X12
	Dimension of Package (LXWXH)	inch		41X15X12 39/64
Net Weight	lb		27.6	
Gross Weight	lb		34.2	

Outdoor Unit	Model of Outdoor Unit		TW18HQ2C2DO
	Outdoor Unit Product Code		CB419W06700_X18545
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO,LTD.
	Compressor Model		QXA-B141zF030A
	Compressor Oil		RB68EP
	Compressor Type		Rotary
	Compressor Locked Rotor Amp (L.R.A)	A	25
	Compressor RLA	A	12.08
	Compressor Power Input	W	1440
	Overload Protector		1NT11L-6233 or KSD115OC or HPC115/95U1
	Throttling Method		Electron expansion valve
	Operation temp	°F	61~86
	Ambient temp (cooling)	°F	0~115
	Ambient temp (heating)	°F	-4~75
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	inch	Φ9/32
	Rows-fin Gap	inch	3-1/18
	Coil Length (LXDXW)	inch	36 13/16X1 1/2X25 63/64
	Fan Motor Speed	rpm	800
	Output of Fan Motor	W	60
	Fan Motor RLA	A	0.49
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	CFM	3200
	Fan Type		Axial-flow
	Fan Diameter	inch	Φ20 15/32
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IP24
	Permissible Excessive Operating Pressure for the Discharge Side	PSIG	4.3
	Permissible Excessive Operating Pressure for the Suction Side	PSIG	2.5
	Sound Pressure Level (H/M/L)	dB (A)	55/-/-
	Sound Power Level (H/M/L)	dB (A)	65/-/-
	Dimension (WXHXD)	inch	38X27 9/16X15 19/32
Dimension of Carton Box (LXWXH)	inch	40 25/64X17 29/32X28 15/16	
Dimension of Package (LXWXH)	inch	40 33/64X18 5/16X29 33/64	
Net Weight	lb	105.8	
Gross Weight	lb	115.8	
Refrigerant		R410A	
Refrigerant Charge	oz	56.44	
Connection Pipe	Length	ft	24.6
	Gas Additional Charge	oz/ft	0.2
	Outer Diameter Liquid Pipe	inch	Φ1/4
	Outer Diameter Gas Pipe	inch	Φ5/8
	Max Distance Height	ft	32.8
	Max Distance Length	ft	82
Note:The connection pipe applies metric diameter.			

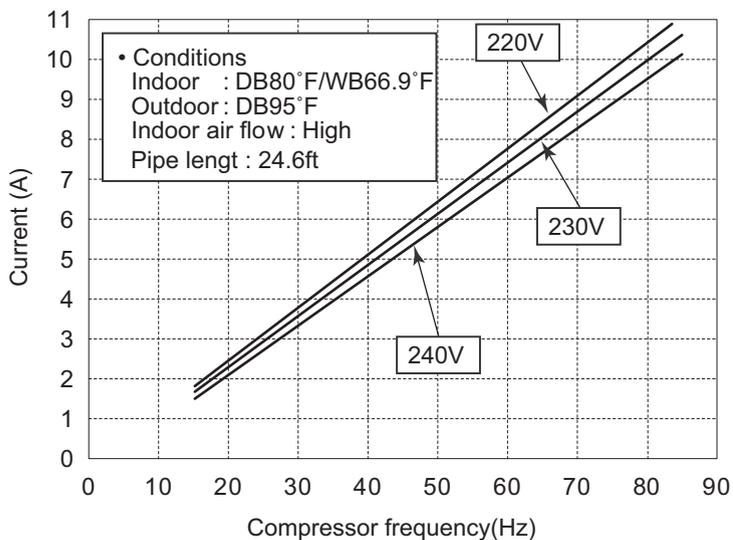
The above data is subject to change without notice. Please refer to the nameplate of the unit.

Model			TW24HQ2C2D	
Product Code			CB439005701_X18545	
Power Supply	Rated Voltage	V~	208/230	
	Rated Frequency	Hz	60	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)		Btu/h	22000(6824~27296)	
Heating Capacity(Min~Max)		Btu/h	23000(6824~30708)	
Cooling Power Input(Min~Max)		W	1830(450~3000)	
Heating Power Input(Min~Max)		W	2000(450~3000)	
Cooling Power Current		A	8.05	
Heating Power Current		A	8.35	
Rated Input		W	3000	
Rated Current		A	14.49	
Air Flow Volume(SH/H/M/L)		CFM	706/647/589/530	
Dehumidifying Volume		Pint/h	4.23	
EER		(Btu/h)/W	12.02	
COP		(Btu/h)/W	11.50	
SEER			20	
HSPF			9	
Application Area		yd <sup>2</sup>	2 32.29-50.23	
Indoor Unit	Model of indoor unit		TW24HQ2C2DI	
	Indoor Unit Product Code		CB439N05701_X18545	
	Fan Type		Cross-flow	
	Diameter Length(DXL)	inch		Φ4 1/4X32 7/10
	Fan Motor Cooling Speed(SH/H/M/L)	r/min		1300/1100/900/850
	Fan Motor Heating Speed(SH/H/M/L)	r/min		1300/1100/1000/900
	Output of Fan Motor	W		60
	Fan Motor RLA	A		0.38
	Fan Motor Capacitor	μF		/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter	inch		Φ9/32
	Row-fin Gap	inch		2-1/16
	Coil Length (LXDXW)	inch		33 1/4X1X13 1/2
	Swing Motor Model			MP35CJ
	Output of Swing Motor	W		2.5
	Fuse	A		3.15
	Sound Pressure Level(SH/H/M/L)	dB (A)		48/44/40/36
	Sound Power Level(SH/H/M/L)	dB (A)		58/54/50/46
	Dimension (WXHXD)	inch		42 7/16X12 51/64X9 11/16
	Dimension of Carton Box (LXWXH)	inch		45 5/64X16 9/64X13 3/16
	Dimension of Package (LXWXH)	inch		45 13/64X16 17/64X13 25/32
Net Weight	lb		34.2	
Gross Weight	lb		41.9	

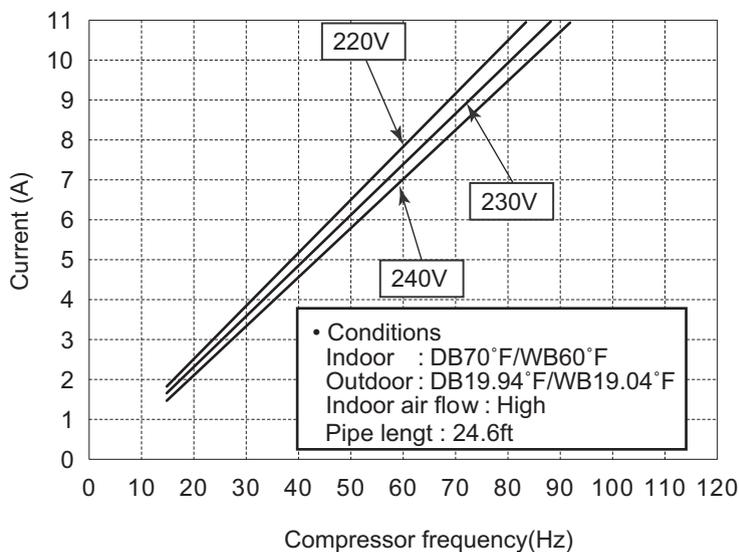


## 2.2 Operation Characteristic Curve

Cooling

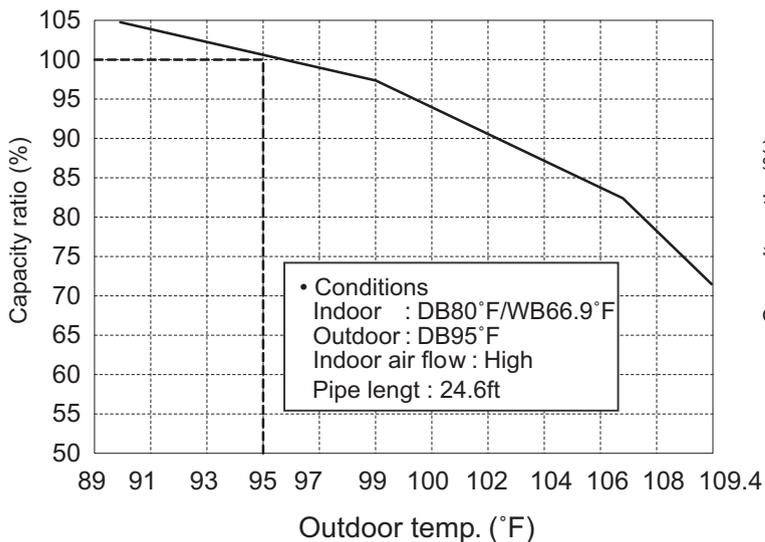


Heating

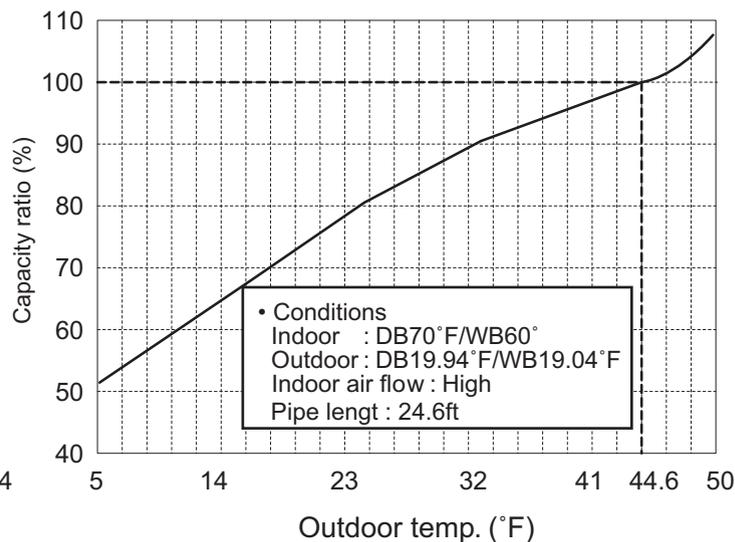


## 2.3 Capacity Variation Ratio According to Temperature

Cooling



Heating



## 2.4 Cooling and Heating Data Sheet in Rated Frequency

### Cooling:

Rated cooling condition(°F) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor revolution (rps)
Indoor	Outdoor			P (PSIG)	T1 (°F)			
80/66.9	95/-	09K	130~142	in:46.4~51.8 out:51.8~57.2	in:167~181.4 out:98.6~118.4	Super High	High	52
80/66.9	95/-	12K	130~142	in:46.4~51.8 out:51.8~57.2	in:167~181.4 out:98.6~118.4	Super High	High	72
80/66.9	95/-	18K	130~142	in:46.4~51.8 out:51.8~57.2	in:167~181.4 out:98.6~118.4	Super High	High	73
80/66.9	95/-	24K	130~142	in:46.4~51.8 out:51.8~57.2	in:167~181.4 out:98.6~118.4	Super High	High	75

### Heating:

Rated heating condition(°F) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor revolution (rps)
Indoor	Outdoor			P (PSIG)	T1 (°F)			
70/60	19.94/19.04	09K	362~406	in:167~181.4 out:98.6~113	in:33.8~37.4 out:35.6~42.8	Super High	High	65
70/60	19.94/19.04	12K	362~406	in:167~181.4 out:98.6~113	in:33.8~37.4 out:35.6~42.8	Super High	High	77
70/60	19.94/19.04	18K	507~550	in:167~181.4 out:98.6~113	in:33.8~37.4 out:35.6~42.8	Super High	High	75
70/60	19.94/19.04	24K	507~550	in:167~181.4 out:98.6~113	in:33.8~37.4 out:35.6~42.8	Super High	High	80

### Instruction:

T1: Inlet and outlet pipe temperature of evaporator

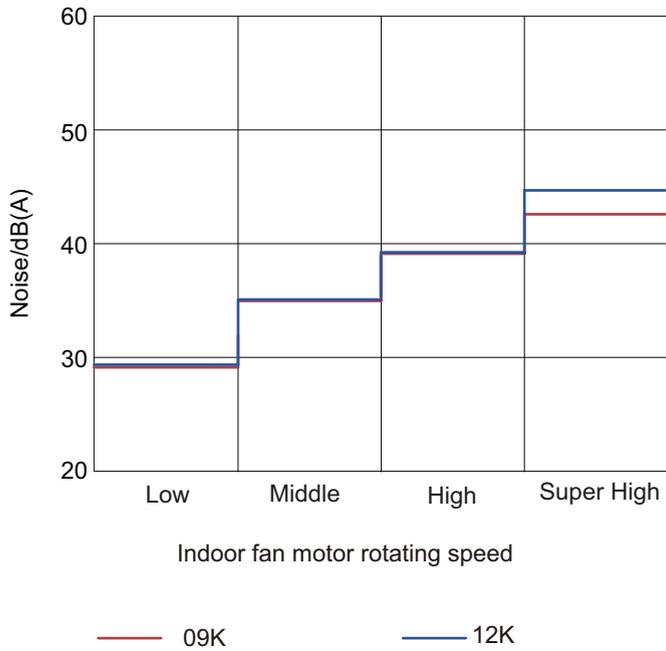
T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

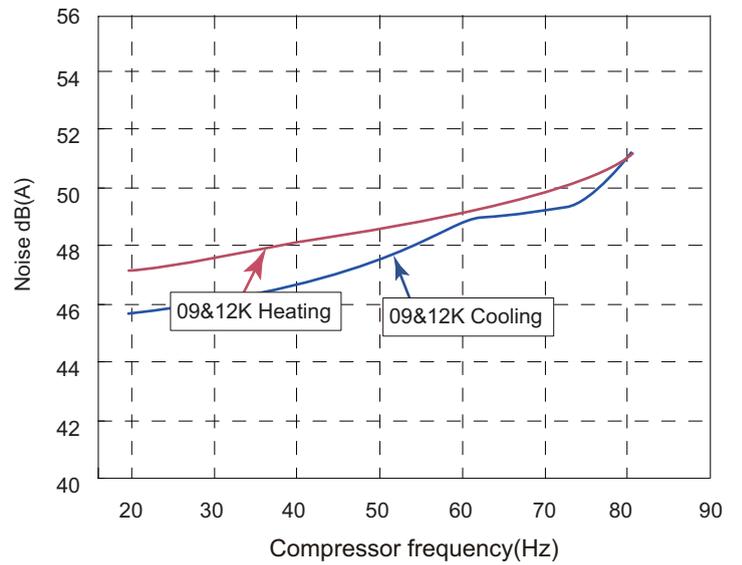
Connection pipe length: 24.6ft.

## 2.5 Noise Curve

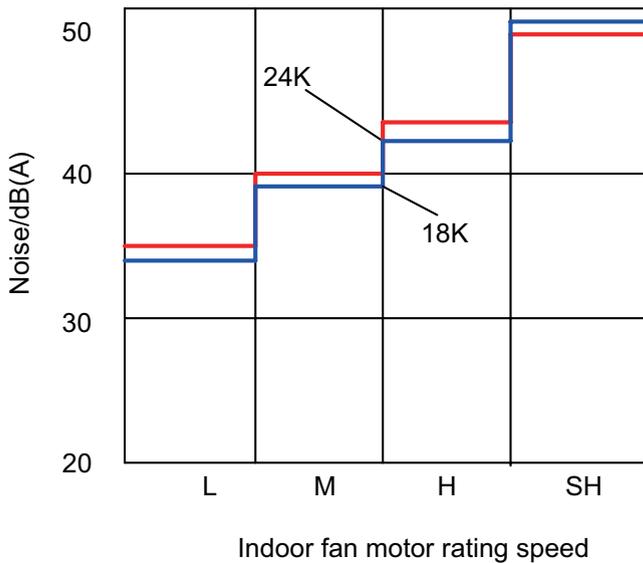
Indoor side noise when blowing



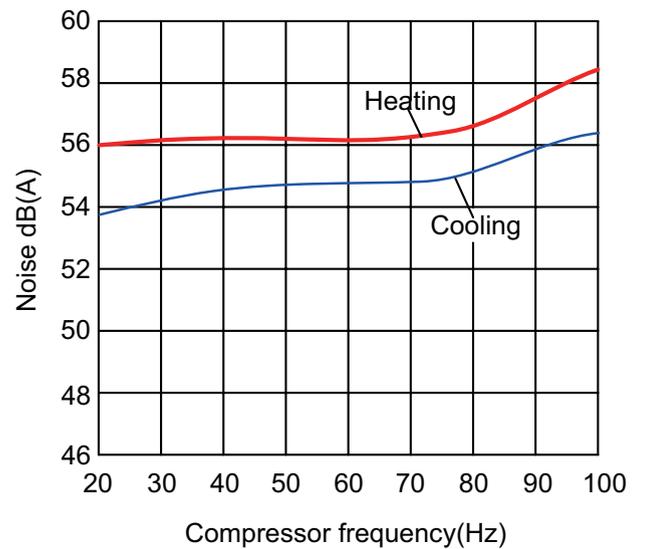
Outdoor side noise when blowing



Indoor side noise

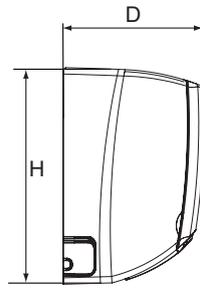
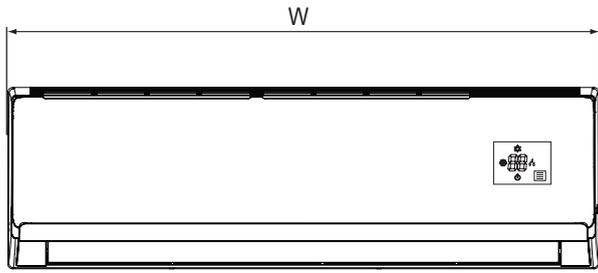


Outdoor side noise

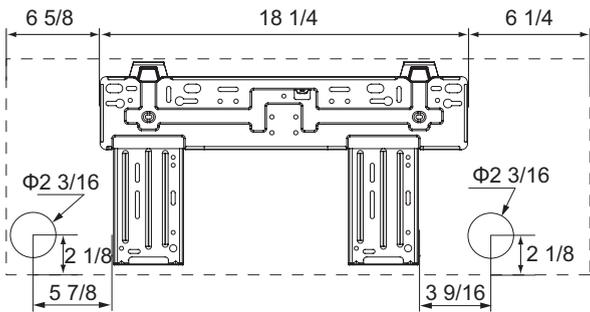




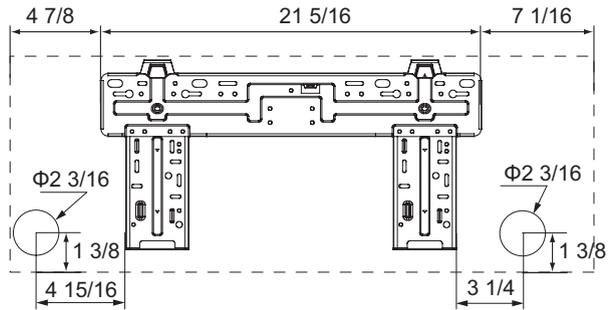
TW09HQ1B8A/I  
TW12HQ1B8A/I



09K



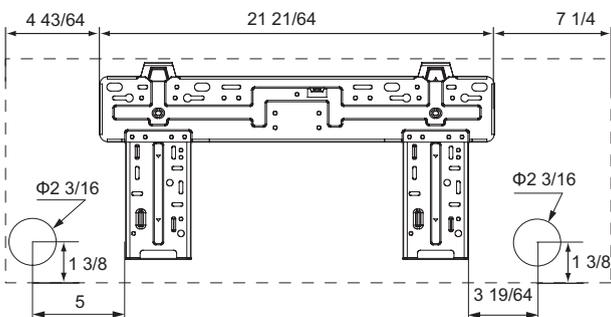
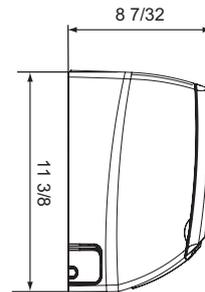
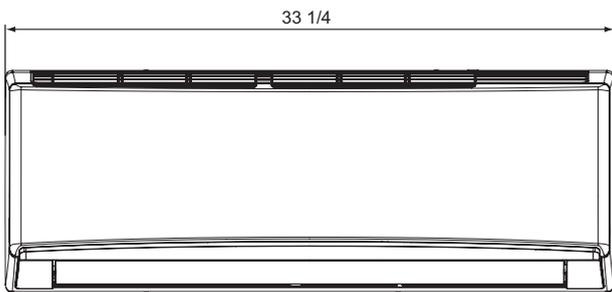
12K



Unit:inch

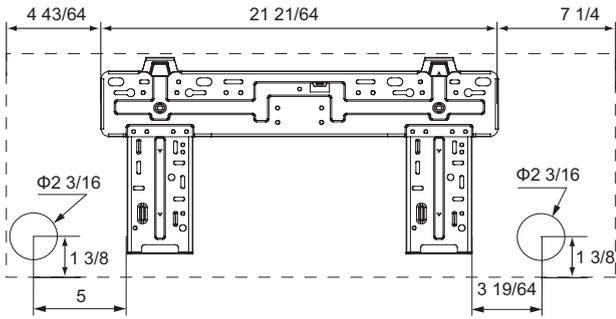
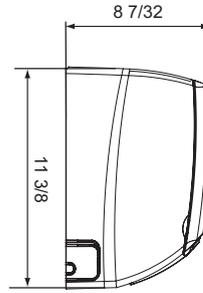
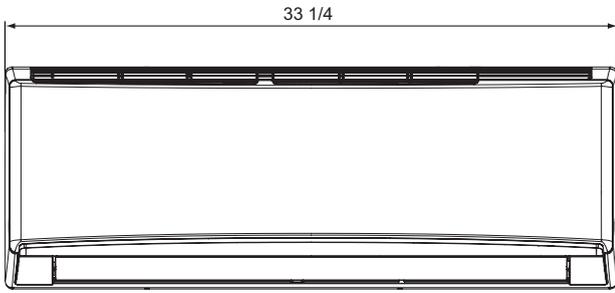
Models	W	H	D
09K	31 1/8	10 13/16	7 7/8
12K	33 1/4	11 3/8	8 1/4

TW09CQ2B8DI



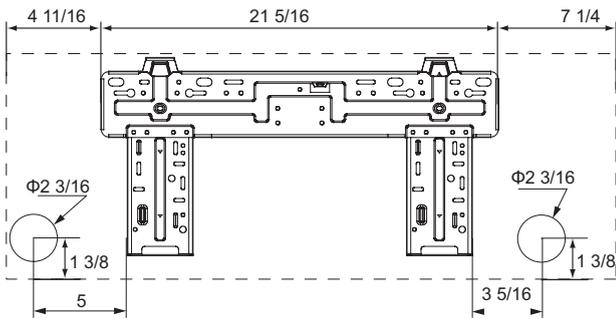
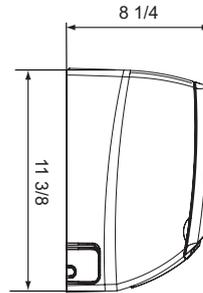
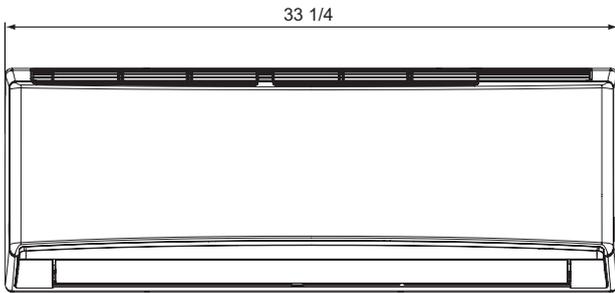
Unit:inch

TW12CQ2B8DI



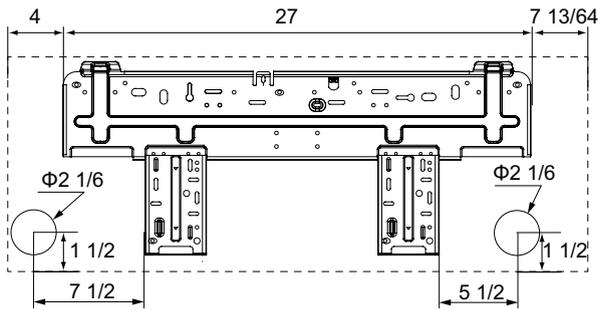
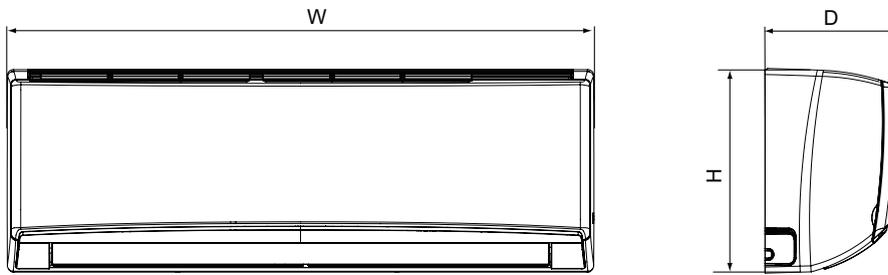
Unit:inch

TW09HQ2C2DI  
TW12HQ2C2DI



Unit:inch

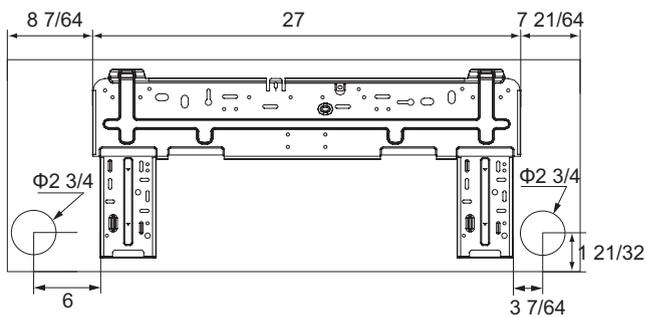
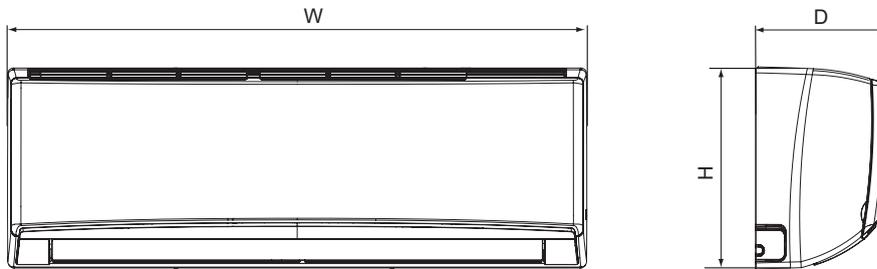
TW18HQ2C2DI



Unit:inch

Models	W	H	D
18K	38 13/64	11 13/16	8 5/6

TW24HQ2C2DI

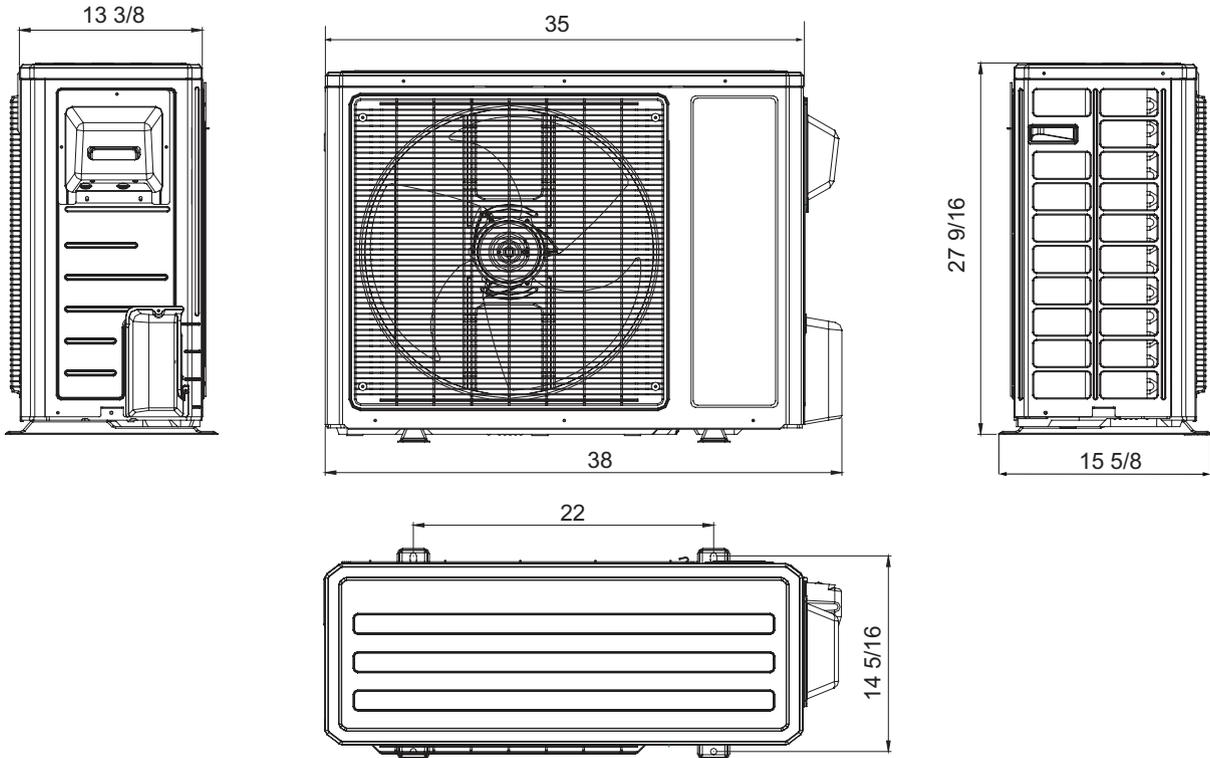


Unit:inch

Models	W	H	D
24K	42 7/16	12 51/64	9 11/16

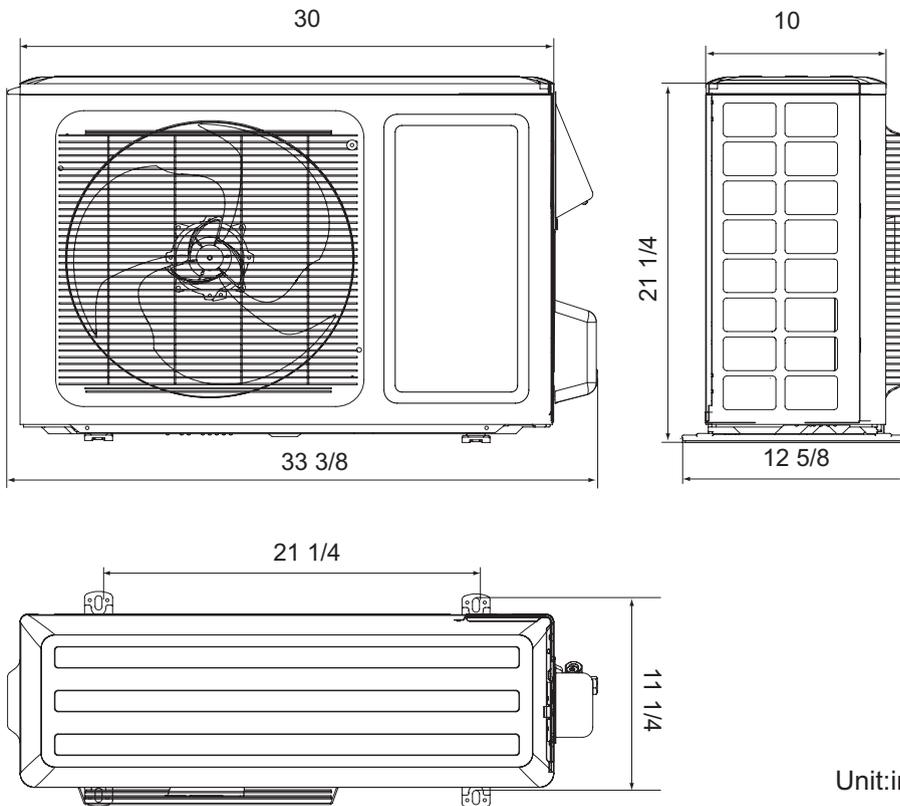


TW18HQ1C8D/O  
 TW24HQ1C8D/O



Unit: inch

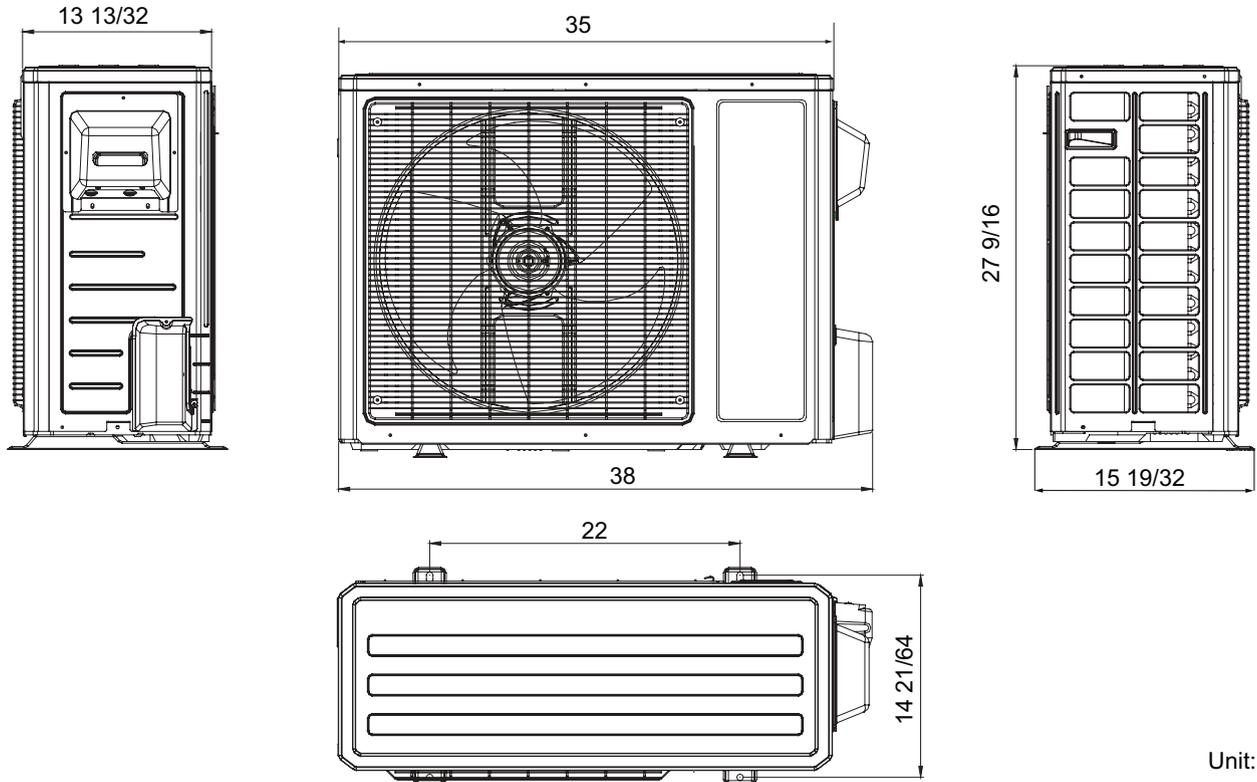
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 TW12HQ1B8A/O



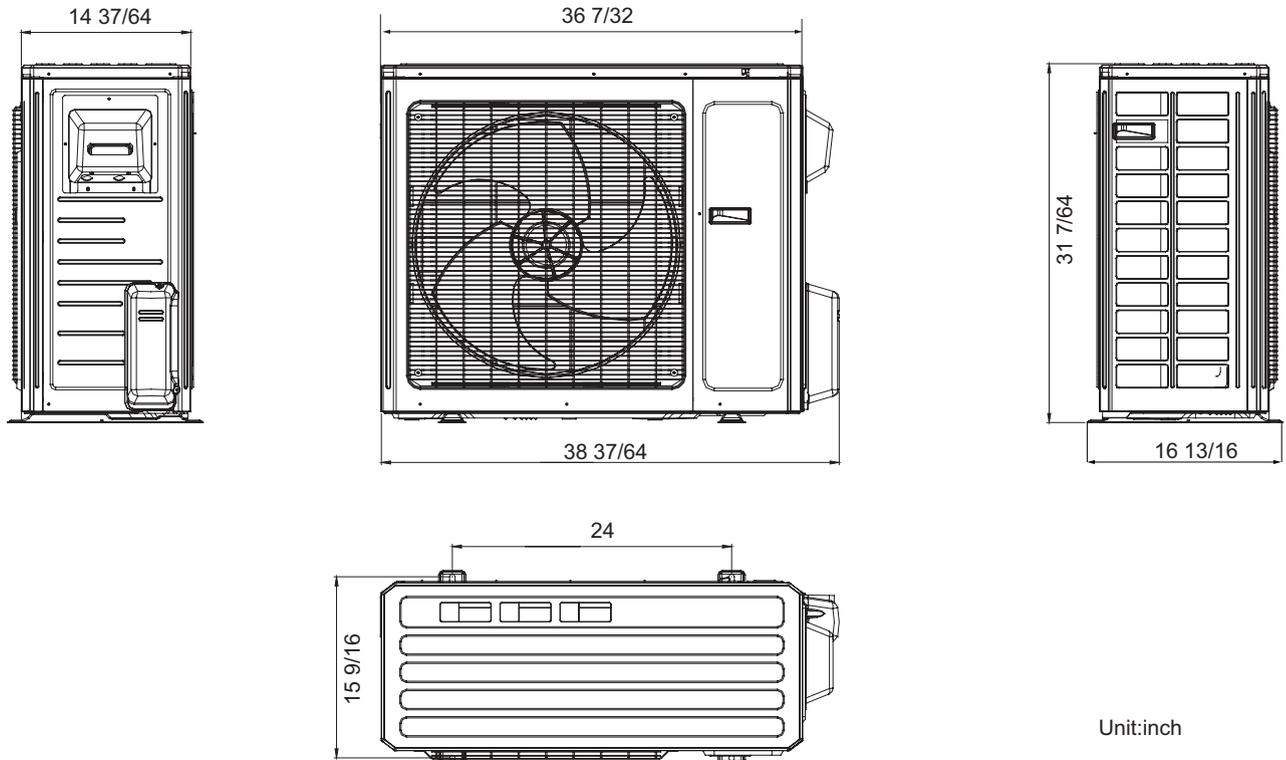
Unit: inch



TW18HQ2C2DO



TW24HQ2C2DO

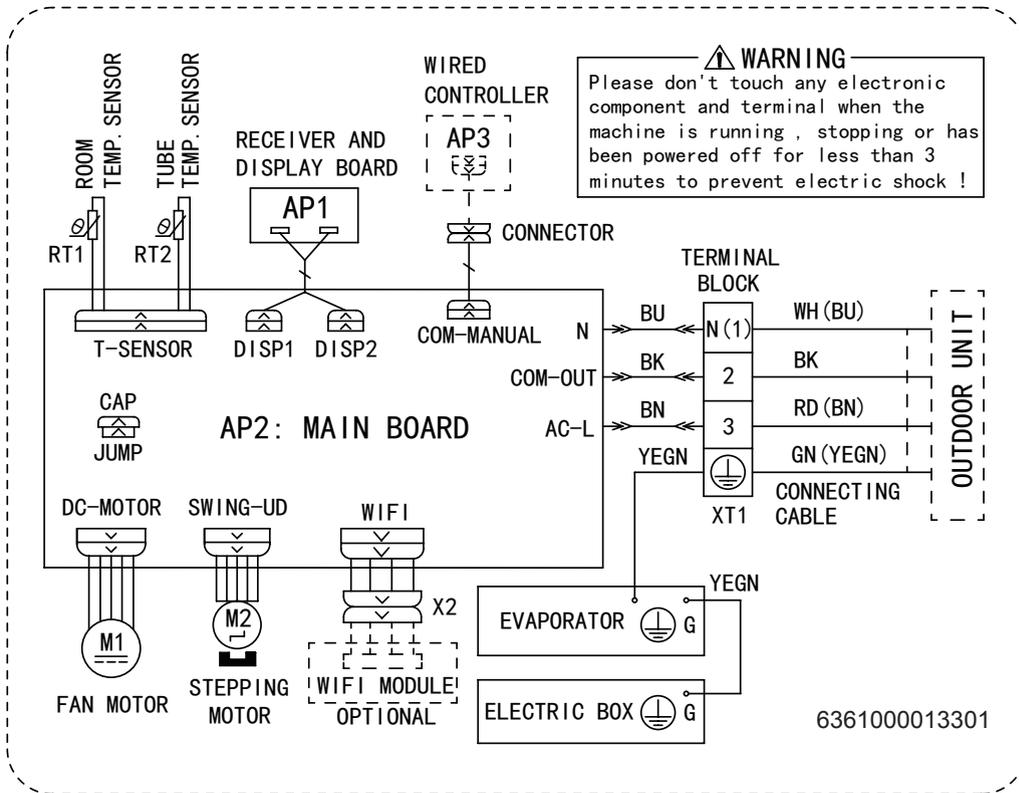




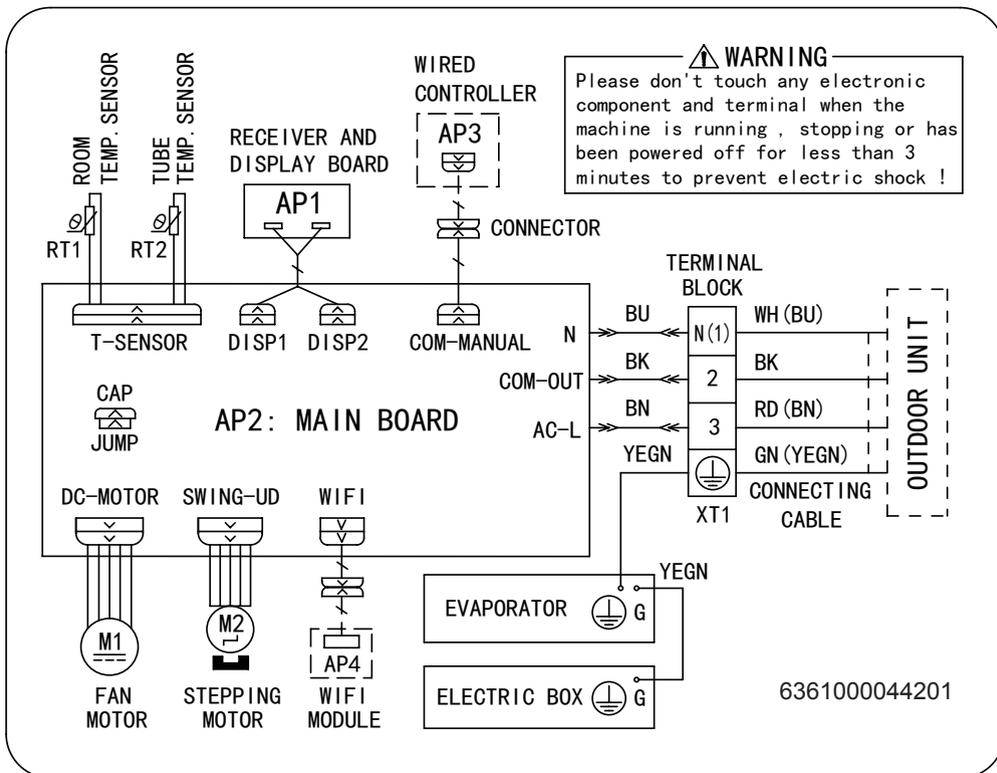




TW09HQ2C2DI  
TW12HQ2C2DI

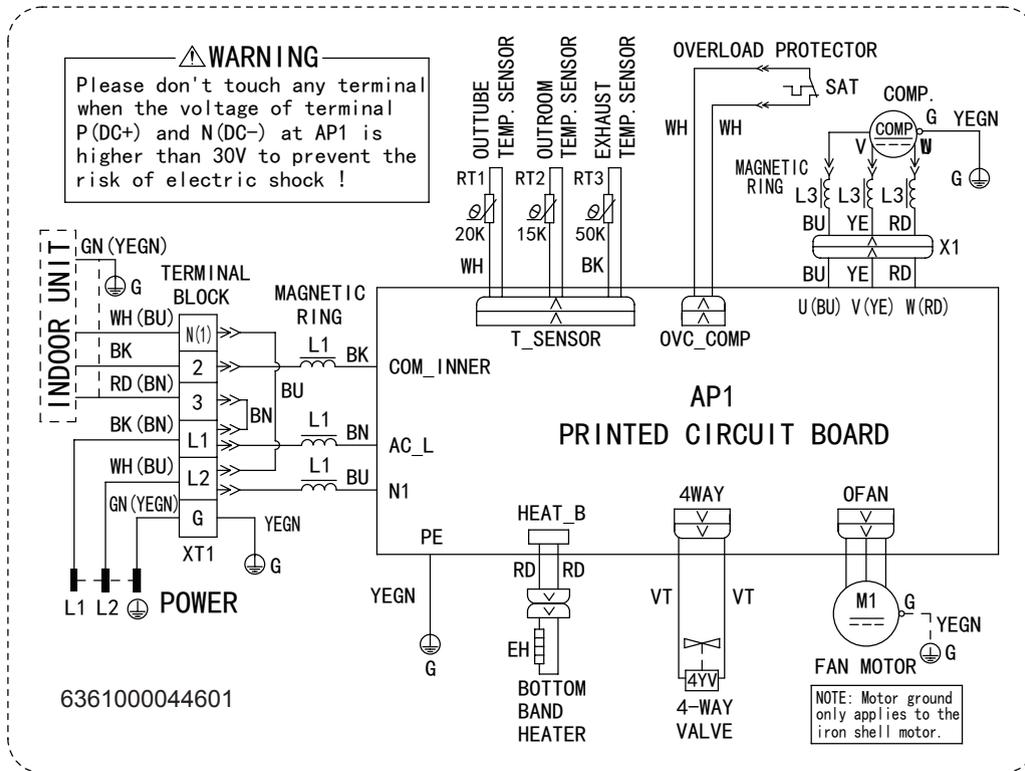


TW18HQ2C2DI

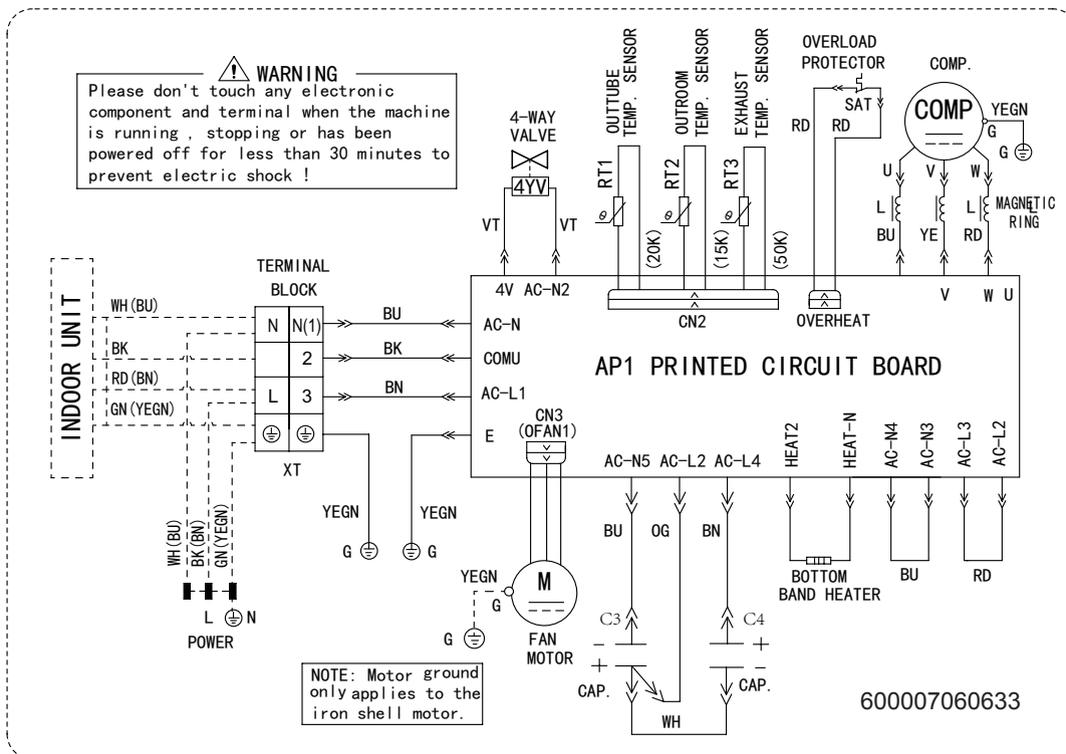




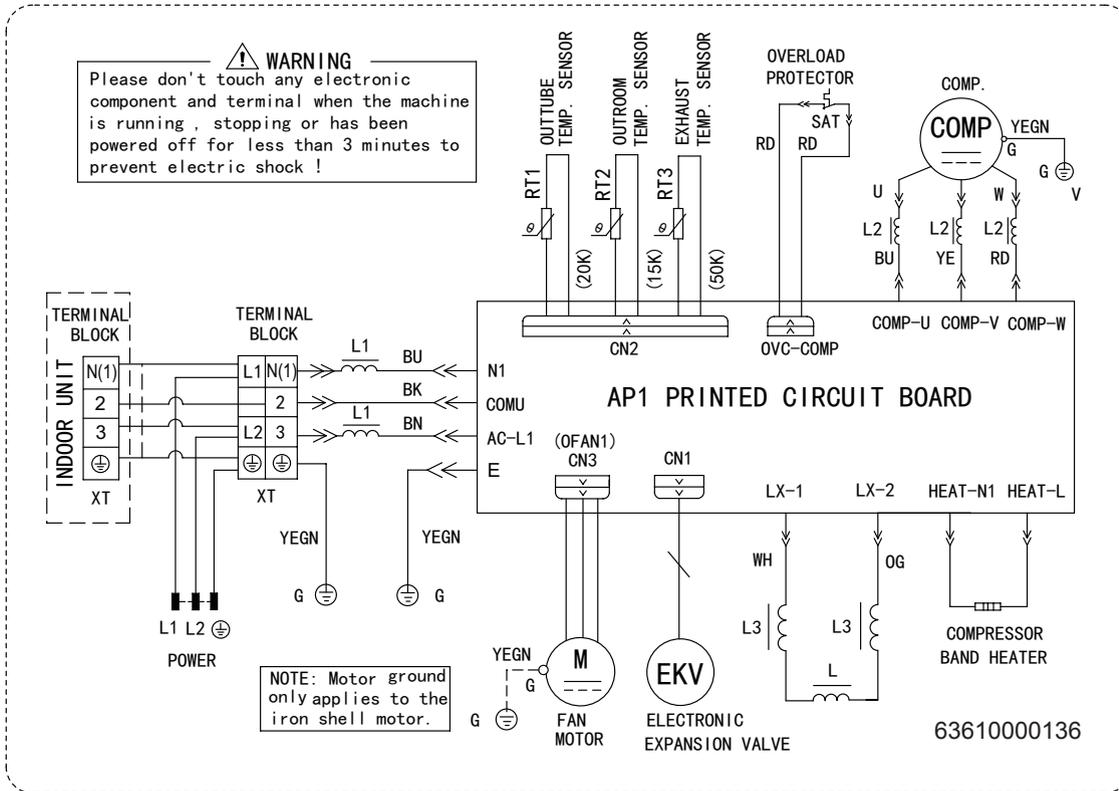
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 TW24HQ1C8D/O



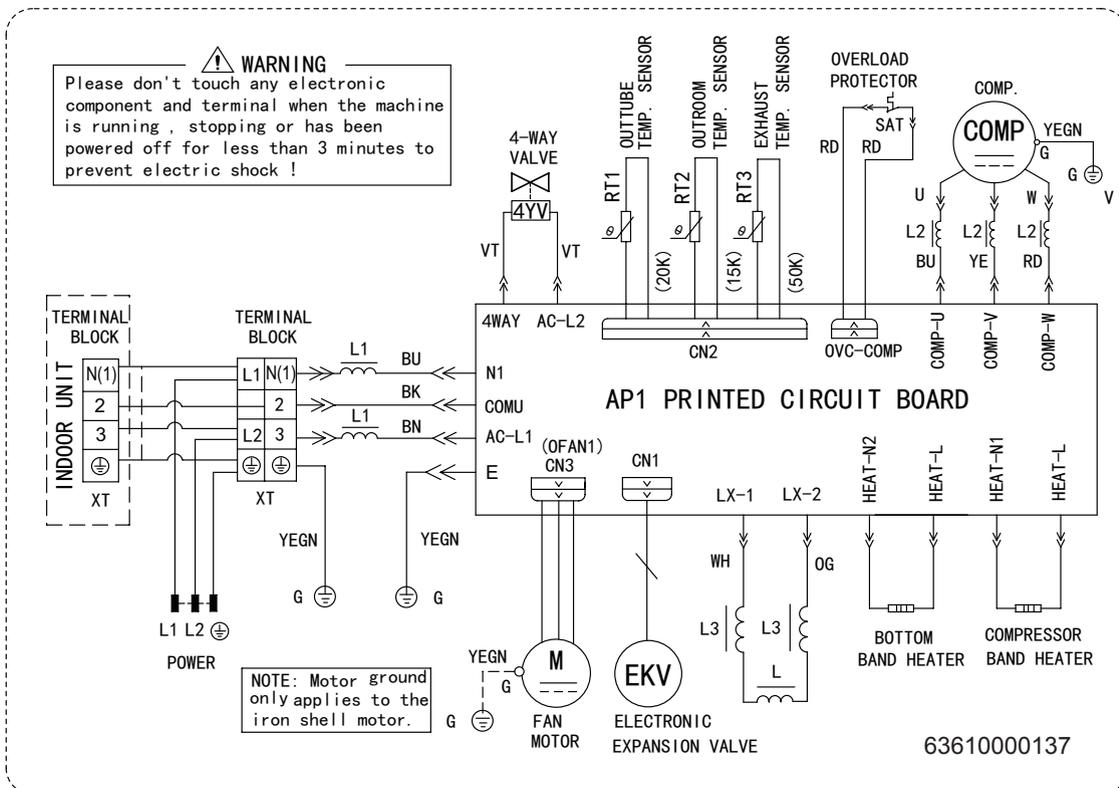
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 TW12HQ1B8A/O



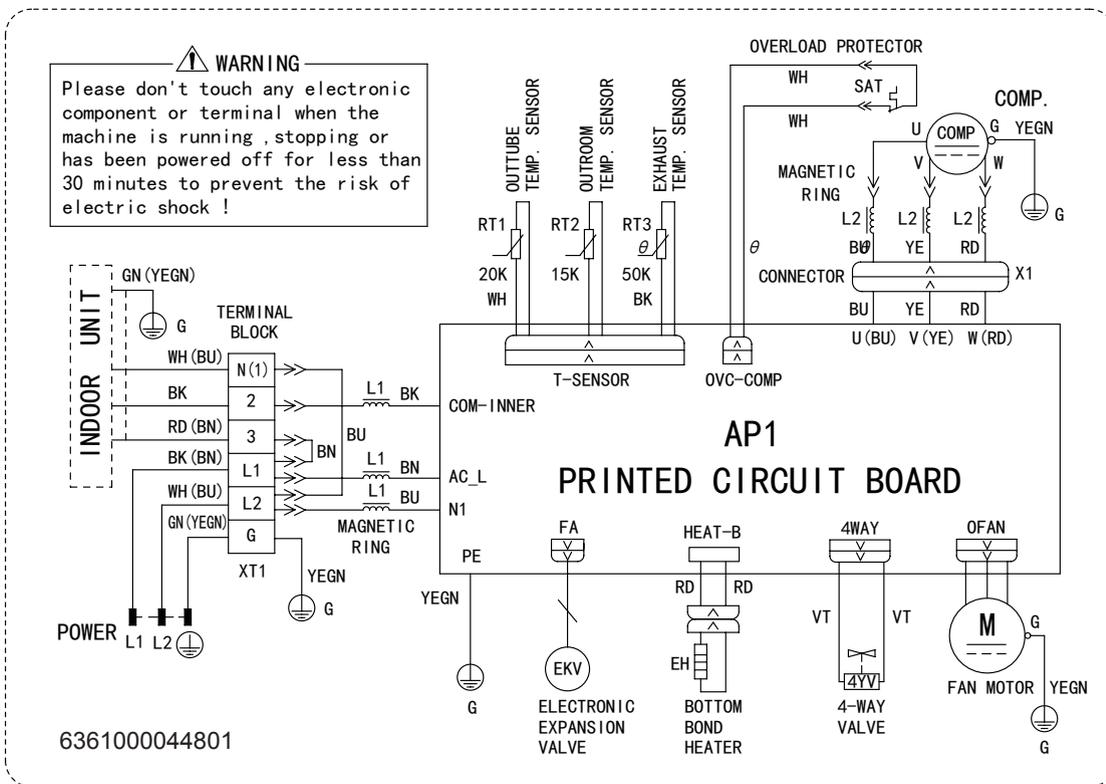
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TW12CQ2B8DO



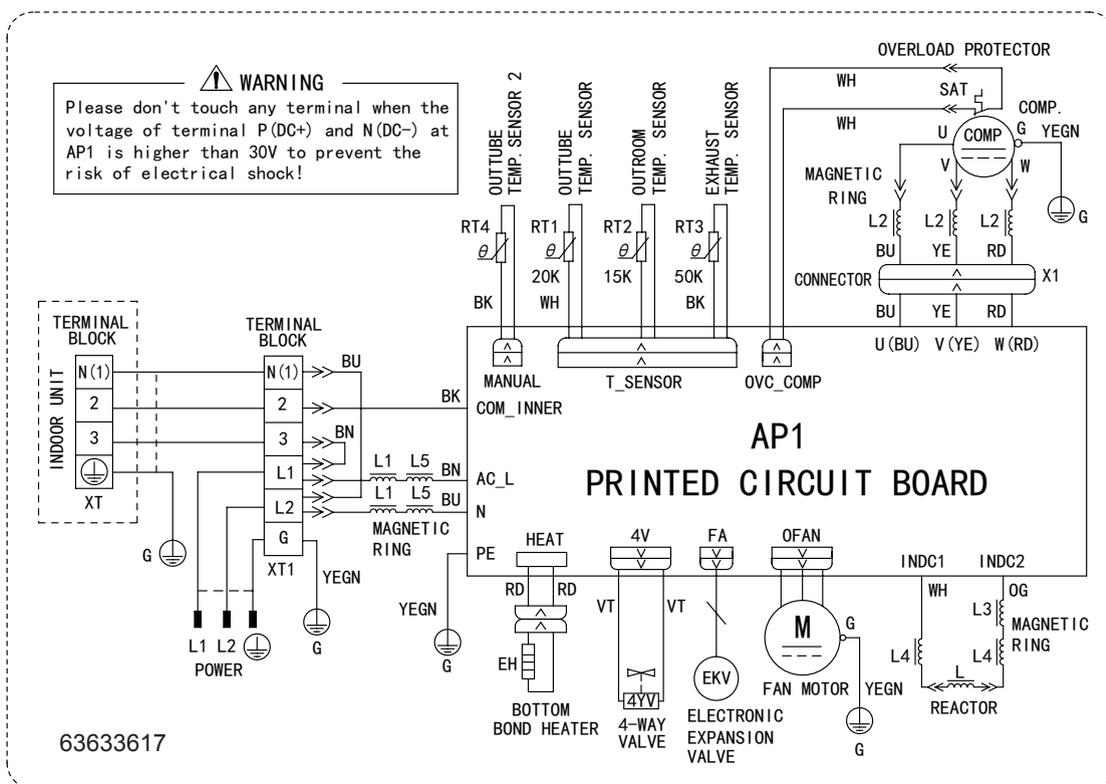
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TW12HQ2C2DO



TW18HQ2C2DO



TW24HQ2C2DO



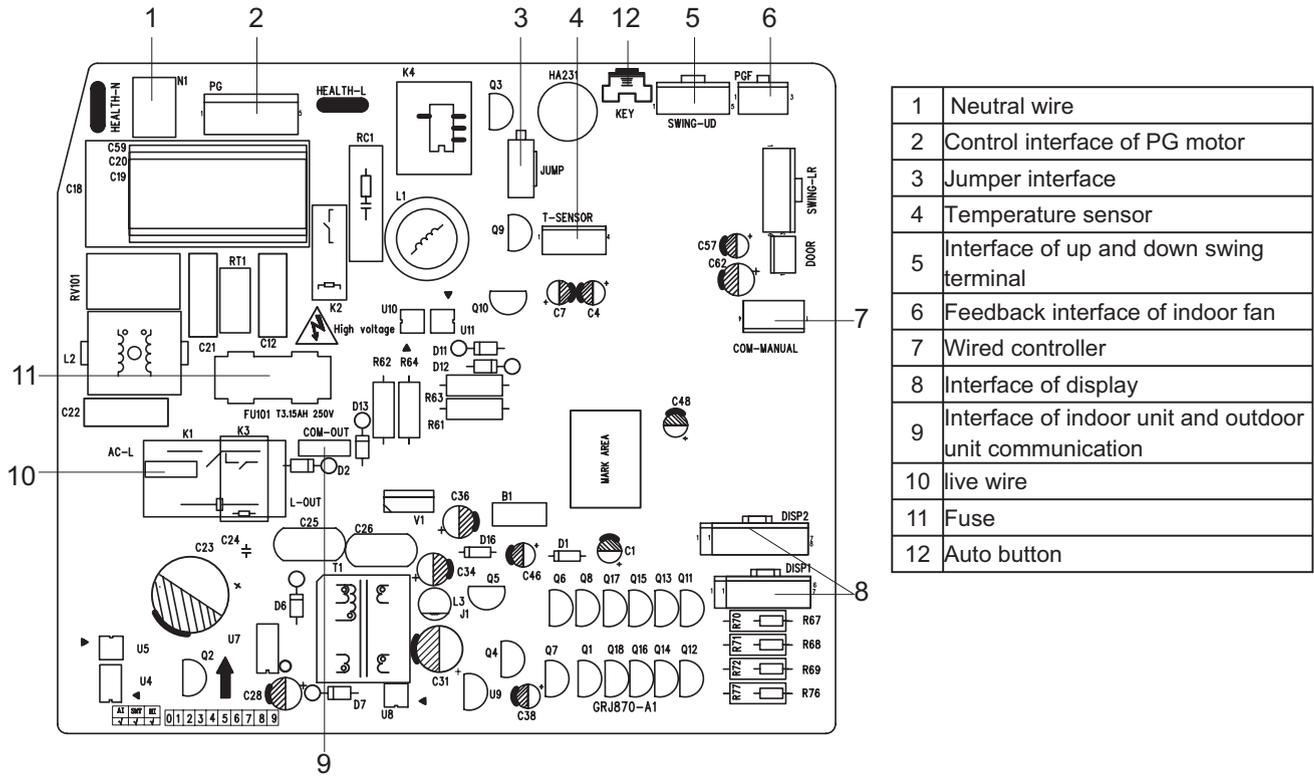
These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

## 5.2 PCB Printed Diagram

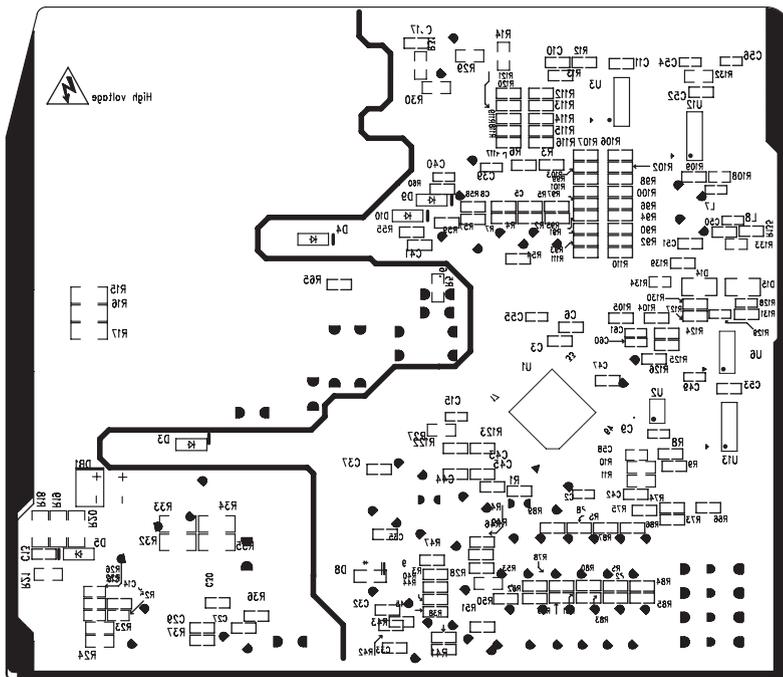
### Indoor Unit

#### • Top view

TW09HQ1C8D/I TW18HQ1C8D/I  
TW12HQ1C8D/I TW24HQ1C8D/I



#### • Bottom view



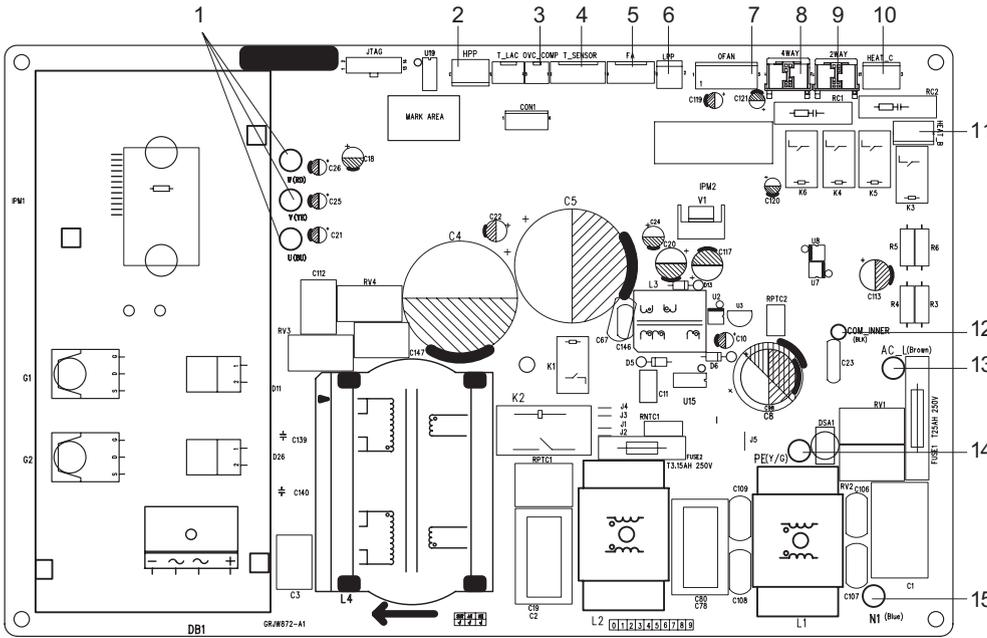






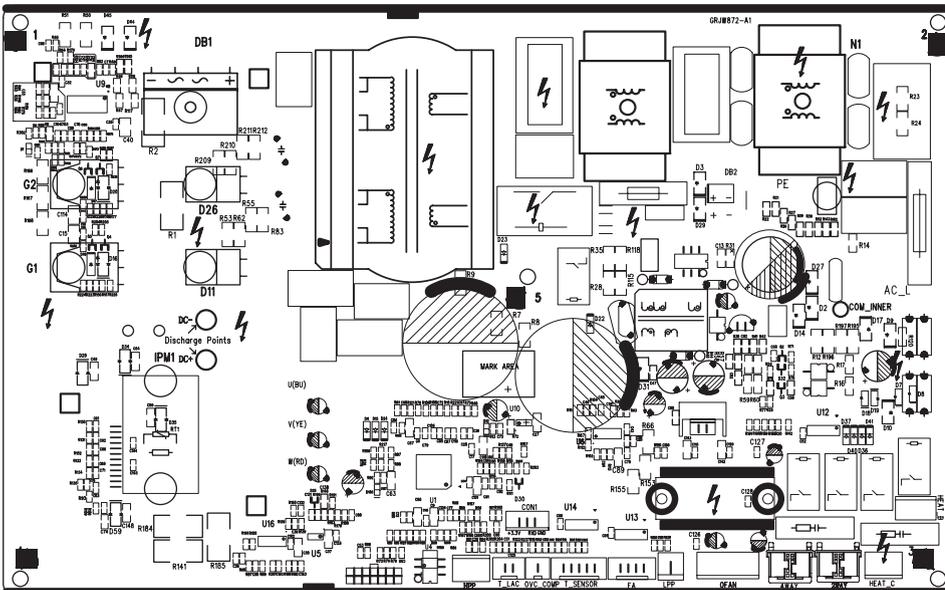
TW24HQ1C8D/O

• Top view



No.	Name
1	Compressor three phase input interface
2	Interface of system high pressure protection
3	Compressor overload protection interface
4	Interface of temperature sensor
5	Interface of electronic expansion valve
6	Interface of system low pressure protection
7	Interface of fan
8	4-way valve interface
9	2-way valve interface
10	Interface of electric heating for compressor
11	Interface of electric heating for chassis
12	Communication interface
13	Interface of live wire
14	Interface of earthing wire
15	Interface of netural wire

• Bottom view











## 6. Function and Control

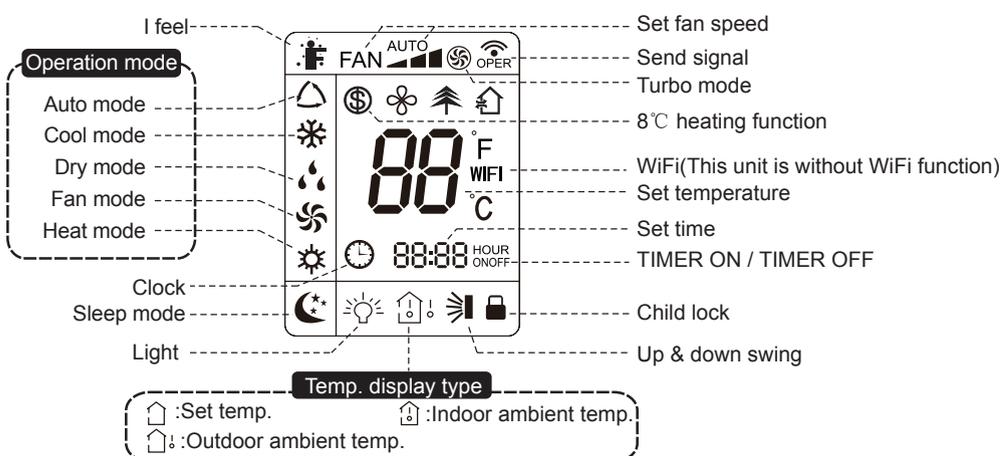
### 6.1 Remote Controller Introduction

YAN1F1F



- 1 ON/OFF button
- 2 MODE button
- 3 FAN button
- 4 SWING button
- 5 TURBO button
- 6 ▲/ ▼button
- 7 SLEEP button
- 8 TEMP button
- 9 I FEEL button
- 10 LIGHT button
- 11 CLOCK button
- 12 TIMER ON / TIMER OFF button

#### Introduction for icons on display screen



#### Introduction for buttons on remote controller

**Note:**

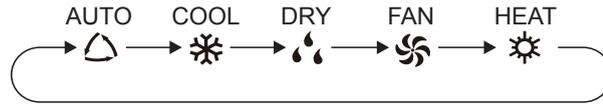
- After putting through the power, the air conditioner will give out a sound. Operation indicator "⏻" is ON (red indicator, the colour is different for different models). After that, you can operate the air conditioner by using remote controller.
- Under ON status, pressing the button on the remote controller, the signal icon "📶" on the display of remote controller will blink once and the air conditioner will give out a "de" sound, which means the signal has been sent to the air conditioner.
- Under OFF status, set temperature and clock icon will be displayed on the display of remote controller (If timer ON, timer OFF and light functions are set, the corresponding icons will be displayed on the display of remote controller at the same time); Under ON status, the display will show the corresponding set function icons.

### 1. ON/OFF button

Press this button to turn on the unit. Press this button again to turn off the unit.

### 2. MODE button

Press this button to select your required operation mode.



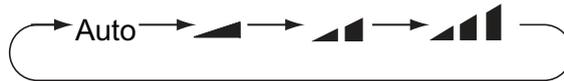
- When selecting auto mode, air conditioner will operate automatically according to factory setting. Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "SWING" button can adjust fan blowing angle.
- After selecting cool mode, air conditioner will operate under cool mode. Cool indicator "❄️" on indoor unit is ON. Press "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at low speed under dry mode. Dry indicator "💧" on indoor unit is ON. Under dry mode, fan speed can't be adjusted. Press "SWING" button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. All indicators are OFF. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator "☀️" on indoor unit is ON. Press "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't start up the unit).

**Note:**

- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~30°C (60.8~86.0°F); Fan speed: auto, low speed, medium speed, high speed.

### 3. FAN button

Pressing this button can set fan speed circularly as: auto (AUTO), low( ▲ ), medium( ▲▲ ), high( ▲▲▲ ).

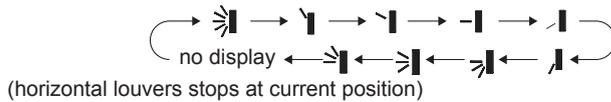


**Caution:**

- Under AUTO speed, air conditioner will select proper fan speed automatically according to factory setting.
- Fan speed under dry mode is low speed.

### 4. SWING button

Press this button can select up&down swing angle. Fan blow angle can be selected circularly as below:



- When selecting "↻", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "↑", "↓", "←", "→", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- When selecting "↗", "↘", "↙", "↚", air conditioner is blowing fan at fixed angle. Horizontal louver will send air at the fixed angle.
- Hold "↻" button above 2s to set your required swing angle. When reaching your required angle, release the button.

**Note:**

- "↗", "↘", "↙", "↚" may not be available. When air conditioner receives this signal, the air conditioner will blow fan automatically.

### 5. TURBO button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. "⚡" icon is displayed on remote controller. Press this button again to exit turbo function and "⚡" icon will disappear.

### 6. ▲/▼ button

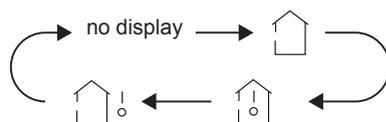
- Press "▲" or "▼" button once increase or decrease set temperature 1°C(1°F). Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▼" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

## 7. SLEEP button

Under COOL, HEAT or DRY mode, press this button to start up sleep function. "☾" icon is displayed on remote controller. Press this button again to cancel sleep function and "☾" icon will disappear.

## 8. TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:



- When selecting "no display" or no display with remote controller, temperature indicator on indoor unit displays set temperature.
- When selecting "house with thermometer" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
- When selecting "house with thermometer and exclamation mark" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

### Note:

- Outdoor temperature display is not available for some models. At that time, indoor unit receives "house with thermometer and exclamation mark" signal, while it displays indoor set temperature.
- It's defaulted to display set temperature when turning on the unit. There is no display in the remote controller.
- Only for the models whose indoor unit has dual-8 display.
- When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

## 9. I FEEL button

Press this button to start I FEEL function and "I FEEL" icon will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and "I FEEL" icon will disappear.

- Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.

## 10. LIGHT button

Press this button to turn off display light on indoor unit. "display light off" icon on remote controller disappears. Press this button again to turn on display light. "display light on" icon is displayed.

## 11. CLOCK button

Press this button to set clock time. "clock" icon on remote controller will blink. Press "▲" or "▼" button within 5s to set clock time. Each pressing of "▲" or "▼" button, clock time will increase or decrease 1 minute. If hold "▲" or "▼" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "CLOCK" button to confirm the time. "clock" icon stops blinking.

### Note:

- Clock time adopts 24-hour mode.
- The interval between two operation can't exceeds 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

## 12. TIMER ON / TIMER OFF button

### • TIMER ON button

"TIMER ON" button can set the time for timer on. After pressing this button, "timer on" icon disappears and the word "ON" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER ON setting. After each pressing "▲" or "▼" button, TIMER ON setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. "timer on" icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.

### • TIMER OFF button

"TIMER OFF" button can set the time for timer off. After pressing this button, "timer off" icon disappears and the word "OFF" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER OFF setting. After each pressing "▲" or "▼" button, TIMER OFF setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER OFF" word "OFF" will stop blinking. "timer off" icon resumes displaying. Cancel TIMER OFF. Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.

### Note:

- Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
- Before setting TIMER ON or TIMER OFF, please adjust the clock time.
- After starting up TIMER ON or TIMER OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you don't need this function, please use remote controller to cancel it.

## Function introduction for combination buttons

### 1. Energy-saving function

Under cooling mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to factory setting to reach to the best energy-saving effect. Press "TEMP" and "CLOCK" buttons simultaneously again to exit energy-saving function.

**Note:**

- Under energy-saving function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under energy-saving function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and energy-saving function can't operate at the same time. If energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.

### 2. 8 °C heating function

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8°C heating function. When this function is started up, "Ⓔ" and "8°C" will be shown on remote controller, and the air conditioner keep the heating status at 8°C. Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8°C heating function.

**Note:**

- Under 8°C heating function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under 8°C heating function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and 8°C heating function can't operate at the same time. If 8°C heating function has been set under cooling mode, press sleep button will cancel 8°C heating function. If sleep function has been set under cooling mode, start up the 8°C heating function will cancel sleep function.
- Under °F temperature display, the remote controller will display 46 °F heating.

### 3. Child lock function

Press "▲" and "▼" simultaneously to turn on or turn off child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, the "🔒" icon will blink three times without sending signal to the unit.

### 4. Temperature display switchover function

Under OFF status, press "▼" and "MODE" buttons simultaneously to switch temperature display between °C and °F.

If "H1" is displayed on the remote controller while it's not operated by the professional person/after-sales person, it belongs to the misoperation.

Please operate it as below to cancel it. Under the OFF status of remote controller, hold the Mode button for 5s to cancel "H1" display.

**Note:**

- If remote controller displays "H1", it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. "H1" won't be displayed on the panel of indoor unit;
- Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;
- Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

### 5. About WIFI function(This unit is without WiFi function)

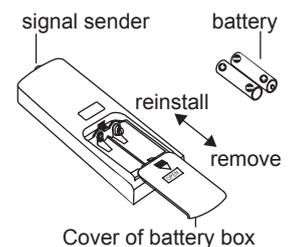
Press "MODE" and "TURBO" button simultaneously to turn on or turn off WIFI function. When WIFI function is turned on, the "WIFI" icon will be displayed on remote controller; Long press "MODE" and "TURBO" buttons simultaneously for 10s, remote controller will send WIFI reset code and then the WIFI function will be turned on. WIFI function is defaulted ON after energization of the remote controller.

## Operation guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN, HEAT.
3. Press "▲" or "▼" button to set your required temperature. (Temperature can't be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low, medium and high speed.
5. Press "SWING" button to select fan blowing angle.

## Replacement of batteries in remote controller

1. Press the back side of remote controller marked with "🔓", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.



**Note:**

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.



### 1. ON/OFF button

Press this button to turn on the unit. Press this button again to turn off the unit.

### 2. MODE button

Press this button to select your required operation mode.



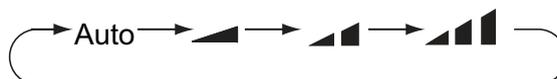
- When selecting auto mode, air conditioner will operate automatically according to ex-factory setting. Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "SWING" button can adjust fan blowing angle.
- After selecting cool mode, air conditioner will operate under cool mode. Cool indicator on indoor unit is ON(This indicator is not available for some models). Press "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.
- When selecting dry mode, the air conditioner operates at low speed under dry mode. Dry indicator on indoor unit is ON(This indicator is not available for some models). Under dry mode, fan speed can't be adjusted. Press "SWING" button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator on indoor unit is ON(This indicator is not available for some models). Press "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't start up the unit).

**Note:**

- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~30°C ; Fan speed: auto, low speed, medium speed, high speed.

### 3. FAN button

Pressing this button can set fan speed circularly as: auto (AUTO), low(▲), medium(▲▲), high(▲▲▲).



**Note:**

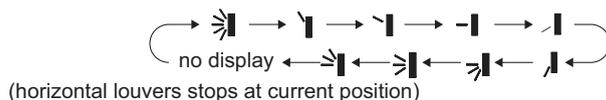
- Under AUTO speed, air conditioner will select proper fan speed automatically according to ex-factory setting.
- Fan speed under dry mode is low speed.
- X-FAN function: Hold fan speed button for 2s in COOL or DRY mode, the icon "⊗" is displayed and the indoor fan will continue operation for a few minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

This function indicates that moisture on evaporator of indoor unit will be blown after the unit is stopped to avoid mould.

- Having set X-FAN function on: After turning off the unit by pressing ON/OFF button indoor fan will continue running for a few minutes. at low speed. In this period, Hold fan speed button for 2s to stop indoor fan directly.
- Having set X-FAN function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.

### 4. SWING button

Press this button can select up&down swing angle. Fan blow angle can be selected circularly as below:



- When selecting "no display", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "up, down, left, right", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- When selecting "up-angle, down-angle, left-angle, right-angle", air conditioner is blowing fan at fixed angle. Horizontal louver will send air at the fixed angle.
- Hold "no display" button above 2s to set your required swing angle. When reaching your required angle, release the button.

**Note:**

- "up-angle, down-angle, left-angle, right-angle" may not be available. When air conditioner receives this signal, the air conditioner will blow fan automatically.

### 5. TURBO button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. "⊗" icon is displayed on remote controller. Press this button again to exit turbo function and "⊗" icon will disappear.

## 6. ▲/▼ button

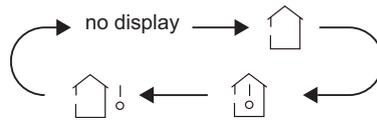
- Press "▲" or "▼" button once increase or decrease set temperature 1°C(1°F). . Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▼" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

## 7. SLEEP button

Under COOL, HEAT or DRY mode, press this button to start up sleep function. "☾" icon is displayed on remote controller. Press this button again to cancel sleep function and "☾" icon will disappear.

## 8. TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor units display. The setting on remote controller is selected circularly as below:



- When selecting "🏠" or no display with remote controller, temperature indicator on indoor unit displays set temperature.
- When selecting "🏠🌡️" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
- When selecting "🏠🌡️🌡️" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

### Note:

- Outdoor temperature display is not available for some models. At that time, indoor unit receives "🏠🌡️" signal, while it displays indoor set temperature.
- Its defaulted to display set temperature when turning on the unit. There is no display in the remote controller.
- Only for the models whose indoor unit has dual-8 display.
- When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

## 9. WIFI button

Press "WiFi" button to turn on or turn off WiFi function. When WiFi function is turned on, the "WiFi" icon will be displayed on remote controller; Under status of remote controller off, press "MODE" and "WiFi" buttons simultaneously for 1s, WiFi module will restore to factory default setting.

## 10. LIGHT button

Press this button to turn off display light on indoor unit. "💡" icon on remote controller disappears. Press this button again to turn on display light. "💡" icon is displayed.

## 11. CLOCK button

Press this button to set clock time. "🕒" icon on remote controller will blink. Press "▲" or "▼" button within 5s to set clock time. Each pressing of "▲" or "▼" button, clock time will increase or decrease 1 minute. If hold "▲" or "▼" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "CLOCK" button to confirm the time. "🕒" icon stops blinking.

### Note:

- Clock time adopts 24-hour mode.
- The interval between two operation can't exceed 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

## 12. TIMER ON / TIMER OFF button

### • TIMER ON button

"TIMER ON" button can set the time for timer on. After pressing this button, "🕒" icon disappears and the word "ON" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER ON setting. After each pressing "▲" or "▼" button, TIMER ON setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. "🕒" icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.

### • TIMER OFF button

"TIMER OFF" button can set the time for timer off. After pressing this button, "🕒" icon disappears and the word "OFF" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER OFF setting. After each pressing "▲" or "▼" button, TIMER OFF setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER OFF" word "OFF" will stop blinking. "🕒" icon resumes displaying. Cancel TIMER OFF. Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.

**Note:**

- Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
- Before setting TIMER ON or TIMER OFF, please adjust the clock time.
- After starting up TIMER ON or TIMER OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you don't need this function, please use remote controller to cancel it.

**Function introduction for combination buttons****1. Energy-saving function**

Under cooling mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "TEMP" and "CLOCK" buttons simultaneously again to exit energy-saving function.

**Note:**

- Under energy-saving function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under energy-saving function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and energy-saving function can't operate at the same time. If energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.

**2. 8 °C heating function**

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8 °C heating function. When this function is started up, "8°C" and "8°C" will be shown on remote controller, and the air conditioner keep the heating status at 8 °C. Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8 °C heating function.

**Note:**

- Under 8 °C heating function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under 8 °C heating function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and 8 °C heating function can't operate at the same time. If 8 °C heating function has been set under cooling mode, press sleep button will cancel 8 °C heating function. If sleep function has been set under cooling mode, start up the 8 °C heating function will cancel sleep function.
- Under °F temperature display, the remote controller will display 46 °F heating.

**3. Child lock function**

Press "▲" and "▼" simultaneously to turn on or turn off child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, the "🔒" icon will blink three times without sending signal to the unit.

**4. Temperature display switchover function**

Under OFF status, press "▼" and "MODE" buttons simultaneously to switch temperature display between °C and °F.

If "H1" is displayed on the remote controller while it's not operated by the professional person/after-sales person, it belongs to the misoperation. Please operate it as below to cancel it. Under the OFF status of remote controller, hold the Mode button for 5s to cancel "H1" display.

**Note:**

- If remote controller displays "H1", it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. "H1" won't be displayed on the panel of indoor unit;
- Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;
- Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

**5. I FEEL Function**

Press "▲" and "MODE" buttons simultaneously to start I FEEL function and "i" will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this two buttons simultaneously again to close I FEEL function and "i" will disappear.

- Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature. When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

**Operation guide**

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN, HEAT.



## 6.3 Brief Description of Modes and Functions

### ● Indoor Unit

#### 1. Basic function of system

##### (1) Cooling mode

- (1) Under this mode, fan and swing operates at setting status. Temperature setting range is 60.8~86.0°F.
- (2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.

##### (2) Drying mode

- (1) Under this mode, fan operates at low speed and swing operates at setting status. Temperature setting range is 60.8~86.0°F.
- (2) During malfunction of outdoor unit or the unit is stopped because of protection, indoor unit keeps original operation status.
- (3) Protection status is same as that under cooling mode.
- (4) Sleep function is not available for drying mode.

##### (3) Heating mode

- (1) Under this mode, Temperature setting range is 60.8~86.0°F.
- (2) Working condition and process for heating mode:

When turn on the unit under heating mode, indoor unit enters into cold air prevention status. When the unit is stopped or at OFF status, and indoor unit has been started up just now, the unit enters into residual heat-blowing status.

##### (4) Working method for AUTO mode:

1. Working condition and process for AUTO mode:
  - a. Under AUTO mode, standard heating  $T_{\text{preset}}=68.0^{\circ}\text{F}$  and standard cooling  $T_{\text{preset}}=77.0^{\circ}\text{F}$ . The unit will switch mode automatically according to ambient temperature.
  2. Protection function
    - a. During cooling operation, protection function is same as that under cooling mode.
    - b. During heating operation, protection function is same as that under heating mode.
  3. Display: Set temperature is the set value under each condition. Ambient temperature is ( $T_{\text{amb.}}-T_{\text{compensation}}$ ) for heat pump unit and  $T_{\text{amb.}}$  for cooling only unit.
  4. If there's I feel function,  $T_{\text{compensation}}$  is 0. Others are same as above.

##### (5) Fan mode

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 60.8~86.0°F.

#### 2. Other control

##### (1) Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

##### (2) Auto button

If press this auto button when turning off the unit, the complete unit will operate at auto mode. Indoor fan operates at auto fan speed and swing function is turned on. Press this auto button at ON status to turn off the unit.

##### (3) Auto fan

Heating mode: During auto heating mode or normal heating mode, auto fan speed will adjust the fan speed automatically according to ambient temperature and set temperature.

##### (4) Sleep

After setting sleep function for a period of time, system will adjust set temperature automatically.

##### (5) Timer function:

General timer and clock timer functions are compatible by equipping remote controller with different functions.

##### (6) Memory function

memorize compensation temperature, off-peak energization value.

Memory content: mode, up&down swing, light, set temperature, set fan speed, general timer (clock timer can't be memorized).

After power recovery, the unit will be turned on automatically according to memory content.

##### (7) Health function

During operation of indoor fan, set health function by remote controller. Turn off the unit will also turn off health function.

Turn on the unit by pressing auto button, and the health is defaulted ON.

### **(8) I feel control mode**

After controller received I feel control signal and ambient temperature sent by remote controller, controller will work according to the ambient temperature sent by remote controller.

### **(9) Compulsory defrosting function**

(1) Start up compulsory defrosting function

Under ON status, set heating mode with remote controller and adjust the temperature to 60.8°F. Press “+, -, +, -, +,-” button successively within 5s and the complete unit will enter into compulsory defrosting status. Meanwhile, heating indicator on indoor unit will ON 10s and OFF 0.5s successively. (Note: If complete unit has malfunction or stops operation due to protection, compulsory defrosting function can be started up after malfunction or protection is resumed.)

(2) Exit compulsory defrosting mode

After compulsory defrosting is started up, the complete unit will exit defrosting operation according to the actual defrosting result, and the complete unit will resume normal heating operation.

### **(10) Refrigerant recovery function:**

(1) Enter refrigerant recycling function

Within 5min after energizing (unit ON or OFF status is ok), continuously press LIGHT button for 3 times within 3s to enter refrigerant recycling mode; Fo is displayed and refrigerant recycling function is started. At this moment, the maintenance people closes liquid valve. After 5min, stick the thimble of maintenance valve with a tool. If there is no refrigerant spraying out, close the gas valve immediately and then turn off the unit to remove the connection pipe.

(2) Exit refrigerant recycling function

After entering refrigerant recycling mode, when receive any remote control signal or enter refrigerant recycling mode for 25min, the unit will exit refrigerant recycling mode automatically. If the unit is in standby mode before refrigerant recycling, it will be still in standby mode after finishing refrigerant recycling; if the unit is in ON status before refrigerant recycling, it will still run in original operation mode.

### **(11) Ambient temperature display control mode**

1. When user set the remote controller to display set temperature (corresponding remote control code: 01), current set temperature will be displayed.

2. Only when remote control signal is switched to indoor ambient temperature display status (corresponding remote control code: 10) from other display status (corresponding remote control code: 00, 01, 11), controller will display indoor ambient temperature for 3s and then turn back to display set temperature.

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube stop operation. Indoor fan can select to operate at high, medium, low or auto fan speed. Temperature setting range is 60.8~86.0°F.

### **(12) Off-peak energization function:**

Adjust compressor's minimum stop time. The original minimum stop time is 180s and then we change to:

The time interval between two start-ups of compressor can't be less than  $180+T$  s ( $0 \leq T \leq 15$ ). T is the variable of controller. That's to say the minimum stop time of compressor is 180s~195s. Read-in T into memory chip when refurbish the memory chip each time. After power recovery, compressor can only be started up after  $180+T$  s at least.

### **(13) SE control mode**

The unit operates at SE status.

### **(14) X-fan mode**

When X-fan function is turned on, after turn off the unit, indoor fan will still operate at low speed for 2min and then the complete unit will be turned off. When x-fan function is turned off, after turn off the unit, the complete unit will be turned off directly.

### **(15) 8° heating function**

Under heating mode, you can set 8° heating function by remote controller. The system will operate at 8° set temperature.

### **(16) Turbo fan control function**

Set turbo function under cooling or heating mode to enter into turbo fan speed. Press fan speed button to cancel turbo wind.

No turbo function under auto, dry or fan mode.

## Outdoor Units

### 1. Input Parameter Compensation and Calibration

#### (1) Check the ambient temperature compensation function Indoor ambient temperature compensation function.

a. In cooling mode, the indoor ambient temperature participating in computing control = (T<sub>indoor ambient temperature</sub> - Δ T<sub>cooling indoor ambient temperature compensation</sub>)

b. In heating mode, the indoor ambient temperature participating in computing control = (T<sub>indoor ambient temperature</sub> - Δ T<sub>heating indoor ambient temperature compensation</sub>)

#### (2) Check effective judgment controls of parameters

Effective judgment function of the outdoor exhaust temperature thermo-bulb When conditions a and b are satisfied, the outdoor exhaust temperature thermo-bulb is judged not to be connected into place, the mainboard of outer units will display failure of the outdoor exhaust temperature thermo-bulb (not connected into place), stop the machine for repairing, and resume the machine by remote controls of ON/OFF.

a. Judgment of exhaust detection temperature change:

After the compressor starts up and runs for 10 minutes, if the compressor frequency  $f \geq 40\text{Hz}$ , and the rising value  $T_{\text{exhaust}}$  ( $T_{\text{exhaust}}$  (after start-up for 10 minutes) -  $T_{\text{exhaust}}$  (before start-up))  $< 35.6^\circ\text{F}$ , the outdoor exhaust temperature thermo-bulb can be judged not to be connected into place (judging once when the power is on the first time).

b. Comparative judgment of exhaust detection temperature and condenser detection temperature ( $T_{\text{pipe temperature}} = T_{\text{outdoor pipe temperature}}$  in cooling mode,  $T_{\text{pipe temperature}} = T_{\text{indoor pipe temperature}}$  in heating mode): After the compressor starts up and runs for 10 minutes, if the compressor frequency  $f \geq 40\text{Hz}$ , and  $T_{\text{pipe temperature}} \geq (T_{\text{exhaust}} + 37.4)$ , the outdoor exhaust temperature thermobulb can be judged not to be connected into place (judging once when power is on the first time).

## 2. Basic Functions

### (1) Cooling Mode

#### 1. Conditions and processes of cooling operation:

(1) If the compressor is shut down, and  $[T_{\text{setup}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})] \leq 32.9^\circ\text{F}$ , start up the machine for cooling, the cooling operation will start;

(2) During operations of cooling, if  $32^\circ\text{F} \leq [T_{\text{setup}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})] < 35.6^\circ\text{F}$ , the cooling operation will be still running;

(3) During operations of cooling, if  $35.6^\circ\text{F} \leq [T_{\text{setup}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})]$ , the cooling operation will stop after reaching the temperature point.

#### 2. Temperature setting range

(1) If  $T_{\text{outdoor ambient temperature}} \geq [T_{\text{low-temperature cooling temperature}}]$ , the temperature can be set at:  $60.8 \sim 86^\circ\text{F}$  (Cooling at room temperature);

(2) If  $T_{\text{outdoor ambient temperature}} < [T_{\text{low-temperature cooling temperature}}]$ , the temperature can be set at:  $77 \sim 86^\circ\text{F}$  (Cooling at low temperature), that is, the minimum setting temperature for outer units judgment is  $77^\circ\text{F}$ .

### (2) Dehumidifying Mode

1. Conditions and processes of dehumidifying operations: Same as the cooling mode;

2. The temperature setting range is:  $60.8 \sim 86^\circ\text{F}$ ;

### (3) Air-supplying Mode

1. The compressor, outdoor fans and four-way valves are switched off;

2. The temperature setting range is:  $60.8 \sim 86^\circ\text{F}$ .

### (4) Heating Mode

1. Conditions and processes of heating operations: ( $T_{\text{indoor ambient temperature}}$  is the actual detection temperature of indoor environment thermo-bulb,  $T_{\text{heating indoor ambient temperature compensation}}$  is the indoor ambient temperature compensation during heating operations)

(1) If the compressor is shut down, and  $[(T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}) - T_{\text{setup}}] \leq 32.9^\circ\text{F}$ , start the machine to enter into heating operations for heating;

(2) During operations of heating, if  $32^\circ\text{F} \leq [(T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}) - T_{\text{setup}}] < 35.6^\circ\text{F}$ , the heating operation will be still running;

(3) During operations of heating, if  $35.6^\circ\text{F} \leq [(T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}) - T_{\text{setup}}]$ , the heating operation will stop after reaching the temperature point.

2. The temperature setting range in this mode is:  $60.8 \sim 86^\circ\text{F}$ .

### 3. Special Functions

#### Defrosting Control

##### ① Conditions for starting defrosting

After the time for defrosting is judged to be satisfied, if the temperature for defrosting is satisfied after detections for continuous 3minutes, the defrosting operation will start.

##### ② Conditions of finishing defrosting

The defrosting operation can exit when any of the conditions below is satisfied:

##### ③ $T_{\text{outdoor pipe temperature}} \geq (T_{\text{outdoor ambient temperature}} - [T_{\text{temperature 1 of finishing defrosting}}])$ ;

##### ④ The continuous running time of defrosting reaches [tmax. defrosting time].

### 4. Control Logic

#### (1) Compressor Control

Start the compressor after starting cooling, heating, dehumidifying operations, and the outer fans start for 5s; When the machine is shutdown, in safety stops and when switching to air-supplying mode, the compressor will stop immediately. In all modes: once the compressor starts up, it will not be allowed to stop until having run for the [tmin. compressor running time] (Note: including cases of shutdown when the temperature point is reached; except the cases requiring stopping the compressor such as fault protection, remote shutdown, mode switching etc.); In all modes: once the compressor stops, it will be allowed be restart after 3-minute delay (Note: The indoor units have a function of power memory, the machine can be restarted after remote shutdown and powering up again without delay).

##### 1. Cooling mode

Start the machine to enter into cooling operation for cooling, the compressor is switched on.

##### 2. Dehumidifying mode

Same as the cooling mode.

##### 3. Air-supplying mode

The compressor is switched off.

##### 4. Heating mode

(1) Start the machine to enter into heating operation for heating, the compressor is switched on.

(2) Defrosting:

a. Defrosting starts: the compressor is shut down, and restarts it after 55-second delay.

b. Defrosting ends: the compressor stops, then starts it after 55-second delay.

#### (2) Outer Fans Control

Notes:

Only the outer fans run for at least 80s in each air flow speed can the air flow be switched;

After the outer fans run compulsively in high speed for 80s when the machine starts up, control the air flow according to the logic.

After remote shutdown, safety stops, and when the machine stops after reaching the temperature point, as well as after the compressor stops, extend 1 minute, the outer fans will stop (During the period in the 1 minute, the air flow of outer fans can be changed according to the outdoor ambient temperature changes); When running with force, the outdoor fans shall run in the highest air flow.

#### (3) 4-way valve control

1. The 4-way valve control under the modes of Cooling, dehumidification and supplying air: closing;

2. The status of 4-way valve control under the heating mode: getting power;

(1) 4-way valve power control under heating mode

a. Starts the machine under heating mode, the 4-way valve will get power immediately.

(2) 4-way valve power turn-off control under heating mode

a. When you should turn off the power or switch to other mode under heating mode, the power of 4-way valve will be cut after 2 minutes of the compressor stopped.

b. When all kinds of protection stops, the power of 4-way valve will be cut after delaying 4 minutes.

(3) Defrosting control under heating mode:

a. Defrosting begins: The power of 4-way valve will be cut after 50s of entering into the defrosting compressor.

b. Defrosting stops: The 4-way valve will get power after 50s of exiting the defrosting compressor.

#### (4) Evaporator frozen-preventing protection function

At the mode of Cooling, dehumidifying:

Evaporator frozen-preventing protection function is allowed to begin after 6 min of starting the compressor.

**1. Starting estimation:**

After the compressor stopped working for 180s, if  $T_{\text{inner pipe}} > [T_{\text{frozen-preventing frequency-limited temperature}}$  (the temperature of hysteresis is 35.6°F ), the machine is only allowed to start for operating, otherwise it should not be started, and should be stopped to treat according to the frozen-preventing protection: Clear the trouble under the mode of power turn-off / heating, and the protection times are not counted.

**2. Frequency limited**

If  $[T_{\text{frozen-preventing normal speed frequency-reducing temperature}}] \leq [T_{\text{inner pipe T frozen-preventing frequency-limited temperature}}]$  , you should limit the frequency raising of compressor.

**3. Reducing frequency at normal speed:**

If  $[T_{\text{frozen-preventing high speed frequency-reducing temperature}}] \leq [T_{\text{inner pipe T frozen-preventing normal speed frequency-reducing temperature}}]$ , you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit;

**4. Reducing frequency at high speed:**

If  $[T_{\text{frozen-preventing power turn-off temperature}}] \leq T_{\text{inner pipe}} [T_{\text{frozen-preventing high speed frequency-reducing temperature}}]$  you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit;

**5. Power turn-off:**

If the  $T_{\text{inner pipe}} < [T_{\text{frozen-preventing power turn-off temperature}}]$ , then frozen-preventing protect to stop the machine; If  $T_{\text{frozen-preventing frequency-limited temperature}} < T_{\text{inner pipe}}$  , and the compressor has stopped working for 3 minutes, the whole machine should be allowed to operate.

6. If the frozen-preventing protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t evaporator frozen-preventing protection times zero clearing time , the times of frozen-preventing power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, mode transferring will not clear it).

**(5) Overload protection function**

Overload protection function at the mode of Cooling and dehumidifying

**1. Starting estimation:**

After the compressor stopped working for 180s, if  $T_{\text{outer pipe}} < [T_{\text{Cooling overload frequency-limited temperature}}]$  (the temperature of hysteresis is 35.6°F ), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the overload protection: Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.

**2. Frequency limited**

If  $[T_{\text{Cooling overload frequency-limited temperature}}] \leq [T_{\text{outer pipe T Cooling overload frequency reducing temperature at normal speed}}]$ , you should limit the frequency raising of compressor.

**3. Reducing frequency at normal speed and power turn-off:**

If  $[T_{\text{Cooling overload frequency reducing temperature at high speed}}] \leq T_{\text{outer pipe}} < [T_{\text{Cooling overload power turn-off temperature}}]$  , you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if  $[T_{\text{Cooling overload frequency reducing temperature at normal speed}}] \leq T_{\text{outer pipe}}$ , then Cooling overload protects machine stopping;

**4. Reducing frequency at high speed and stop machine:**

If  $[T_{\text{Cooling overload frequency reducing temperature at high speed}}] \leq T_{\text{outer pipe}} [T_{\text{Cooling overload power turn-off temperature}}]$ , you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if  $[T_{\text{Cooling overload frequency reducing temperature at normal speed}}] \leq [T_{\text{outer pipe}}]$ , then Cooling overload protects machine stopping;

**5. Power turn-off:**

If the  $[T_{\text{Cooling overload power turn-off temperature}}] \leq T_{\text{outer pipe}}$ , then Cooling overload protects machine stopping; If  $[T_{\text{outer pipe}}] < [T_{\text{Cooling overload frequency-limited temperature}}]$  and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.

6. If the Cooling overload protection power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the t overload protection times zero clearing time , the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble can not be resumed, transferring mode will not clear it).

**Overload protection function at the mode of heating****Starting estimation :**

After the compressor stopped working for 180s, if  $T_{\text{inner pipe}} > T_{\text{heating overload frequency-limited temperature}}$  (the temperature of hysteresis is 35.6°F ), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the overload protection:

Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.



**(6)Voltage sag protection**

After start the compressor, if the time of DC link Voltage sag [ $U_{\text{Sagging protection voltage}}$ ] is measured to be less than t Voltage sag protection time , the machine should be stop at once, hand on the voltage sag trouble, reboot automatically after 30 minutes.

**(7)Communication fault**

When you have not received any correct signal from the inner machine in three minutes, the machine will stop for communication fault. When you have not received any correct signal from driver IC (aim to the controller for the separating of main control IC and driver IC), and the machine will stop for communication fault. If the communication is resumed, the machine will be allowed to operate.

**(8)Module protection**

Testing the module protective signal immediately after started, once the module protective signal is measured, stop the machine with module protection immediately. If the module protection is resumed, the machine will be allowed to operate. If the module protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. If the running time of compressor exceeds the [ $t_{\text{Protection times clearing of module}}$ ] , the module protection is cleared to recount.

**(9)Module overheating protection****1. Starting estimation:**

After the compressor stopped working for 180s, if  $T_{\text{Module}} < [T_{\text{Module frequency limited temperature}}]$  (the temperature of hysteresis is 35.6°F ), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the module overheating protection: The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.

**2. Frequency limited**

If [ $T_{\text{Limited frequency temperature of module}} \leq T_{\text{Module}} < [T_{\text{frequency reducing temperature at normal speed of module}}]$  ], you should limit the frequency raising of compressor.

**3. Reducing frequency at normal speed and power turn-off:**

If [ $T_{\text{frequency reducing temperature at normal speed of module}} \leq T_{\text{Module}} < [T_{\text{frequency reducing temperature at high speed of module}}]$  ], you should adjust the compressor frequency by reducing 8Hz/90s till the lower limit; After it was running 90s at the lower limit, if [ $T_{\text{frequency reducing temperature at normal speed of module}} \leq T_{\text{Module}}$  ], you should stop the machine for module overheating protection;

**4. Reducing frequency at high speed and power turn-off:**

If [ $T_{\text{frequency reducing temperature at high speed of module}} \leq T_{\text{Module}} < [T_{\text{Power turn-off temperature of module}}]$  ] you should adjust the compressor frequency by reducing 30Hz/90s till the lower limit; After it was running 90s at the lower limit, if [ $T_{\text{frequency reducing temperature at normal speed of module}} \leq T_{\text{Module}}$  ], you should stop the machine for module overheating protection;

**5. Power turn-off:**

If the [ $T_{\text{Power turn-off temperature of module}} \leq T_{\text{Module}}$  ], you should stop the machine for module overheating protection; If  $T_{\text{Module}} < [T_{\text{Limited frequency temperature of module}}]$  and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

6. If protection continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [ $t_{\text{Protection times clearing of module}}$ ] , the discharge protection is cleared to recount. Stopped or transferred to supply air mode will clear the trouble times immediately (if the trouble can not be resumed, mode transferring also will not clear it).

**(10)Compressor overloads protection**

If you measure the compressor overload switch action in 3s, the compressor should be stopped for overloading. The machine should be allowed to operate after overload protection was measured to resume. If the overloading protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. The protection times of compressor is allowed to clear after the compressor run [ $t_{\text{Protection times clearing of compressor overloading}}$ ] 30 minutes.

**(11)Phase current overcurrent protection of compressor**

During the running process of compressor, you could measure the phase current of the compressor, and control it according to the following steps:

**1. Frequency limited**

If [ $I_{\text{Limited frequency phase current}} \leq [I_{\text{Phase current T frequency reducing phase current}}]$  ], you should limit the frequency raising of compressor.

**2. Reducing Frequency**

If [ $I_{\text{Frequency Reducing Phase Current}} \leq I_{\text{Phase Current}} < [I_{\text{Power Turn-Off Phase Current}}]$  ], the compressor shall continue to reduce frequency till the lowest frequency limit or out of the condition of reducing frequency;

**3. Power turn-off**

If [ $I_{\text{Phase Current}} \geq [I_{\text{Power Turn-Off Phase Current}}]$  ], the compressor phase current shall stop working for overcurrent protection; if [ $I_{\text{Phase Current}} \leq [I_{\text{Frequency Reducing Phase Current}}]$  ], and the compressor have stopped working for 3 min, the machine shall be allowed to operate;

4. If the overcurrent protection of compressor phase current continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [ $t_{\text{Clearing Time of Compressor Phase Current Times}}$ ] , the overcurrent protection is cleared to recount.

**(12) Starting-up Failure Protection for Compressor**

Stop the compressor after its starting-up fails, restart it after 20s if the fault doesn't shows, and if they are all failing for the successive start 3 times, it shall be reported as Starting-up Failure, and then restart up it after 3 min. When it still not be able to operate through carry out the above process for 5 times, it is available if press ON/OFF. And the compressor should be cleared the times after it run 2 min.

**(13) Out-of-Step Protection for Compressor**

The out-of-step protection signal should be detected immediately after starting-up compressor, and once find the out-of-step protection signal, the out-of-step protection shall be stopped; if it can run for lasting power turn-off 3 min, the machine shall be allowed to operate. If it still can't run automatically when the out-of-step protection for compressor happens to stop working for 6 times in succession, it needs to press ON/OFF to operate. And if the running time is more than 10 min, the power turn-off times for out-of-step protection shall be cleared and recounted.

**(14) Voltage Abnormity Protection for DC Bus**

To detect voltage abnormity protection for dc bus after completing the pre-charge:

**1.Over-High Voltage Protection for DC Bus:**

If it found the DCbus voltage  $U_{DC} > [UDC_{Jiekuangchun Protection}]$ , turn off PFC and stop the compressor at once, and it shall show the DC over-high voltage failure; it should clear out the failure when the voltage dropped to  $U_{DC} < [UDC_{Jiekuangchun Recovery}]$  and the compressor stopped for 3 min.

**2.Over-Low Voltage Protection for DC Bus:**

If it found the DC bus voltage  $U_{DC} < [U_{DC Wantuochun Protection}]$ , turn off PFC and stop the compressor at once, and it shall show the DC over-low voltage; and it should clear out the failure when the voltage raised to  $U_{DC} > [U_{DC Wantuochun Recovery}]$  and the compressor stopped for 3 min.

**3.To detect voltage abnormity protect for DC bus when getting electricity:**

If it found the DC bus voltage  $U_{DC} > [U_{DC} \text{---Over-High Voltage}]$ , turn off the relay at once, and shows voltage abnormity failure for DC Bus. And the failure can't recover except to break off and get the electricity.

**(15)Abnormity Protection for Four-way Valve**

Under the model of heating operation in good condition: the compressor is detected  $[T_{Inner Tube} < (T_{Inner Ring} - T_{Abnormity Temperature Difference For Four-Way Valve Reversion})]$ , during the running, it should be regarded as four-way valve reversion abnormity. And then it can run if stop the reversion abnormity protection for four-way valve 3 min; and if it still can't run when the reversion abnormity protection for four-way valve happens to stop working for 3 times in succession, it is available if presses ON/OFF.

Attention: the protection shall be shielded during the testing mode and defrosting process, and it shall be cleared out the failure and its times immediately when turning off or delivering wind / cooling / dehumidifying mode conversed (the inverted mode don't clear out the failure when it can't recover to operate).

**(16) PFC Protection**

1. After start up the PFC, it should detect the protection signal of PFC immediately; under the condition of PFC protection, it should turn off the PFC and compressor at one time;
2. It shows the failure is cleared out if PFC Protection stopped working 3 min and recovers to run automatically;
3. If it still can't run when it occurs PFC protection for 3 times in succession, it is available if presses ON/OFF; and clear the PFC Protection times when start up PFC for 10min.

**(17) Failure Detection for Sensor**

1. Outdoor Ambient Sensor: detect the failure of sensor at all times.
2. Outdoor Tube Sensor: You should not detect the failure of outdoor tube sensor within 10 minutes heating operation compressor except the defrosting, and you could detect it at other time.
3. Outdoor Exhaust Sensor:
  - (a) The compressor only detect the sensor failure after it start up 3 min in normal mode;
  - (b) It should detect the exhaust sensor failure immediately in the testing mode.
4. Module Temperature Sensor:
  - (a) Short-Circuit Detection: the compressor should be detected immediately when the module temperature sensor occurs short-circuits;
  - (b) Open-Circuit Detection: the compressor should be detected on open-circuit when it runs 3min (it needn't 30s avoiding the module over-heated).
  - (c) Detect the sensor failure at all times in the testing mode.
5. Disposal for Sensor Protection
  - (1) When the short-circuit of sensor is detected within 30s, It is regarded as the temperature of sensor over-high (or infinitely high), and now according to the over-high sensor, the machine should carry out the corresponding protection to stop working, and show the corresponding temperature shutdown protection and sensor failure at the same time (for example: the compressor stops immediately when the outdoor tube sensor short-circuit, and the machine shall show the overload protection and outdoor tube sensor failure).
  - (2) When the open-circuit of sensor is detected within 30s, The protection shall be stopped and it shall show the corresponding sensor failure.

6. Electric Heating Function of Chassis

- (1) When Toutdoor amb.  $\leq 32^{\circ}\text{F}$  , the electric heating of chassis will operate;
- (2) When Toutdoor amb.  $> 35.6^{\circ}\text{F}$  , the electric heating of chassis will stop operation;
- (3) When  $32^{\circ}\text{F} < \text{Toutdoor amb.} \leq 35.6^{\circ}\text{F}$  , the electric heating of chassis will keep original status.

7. Electric Heating Function of Compressor

- (1) When Toutdoor amb.  $\leq 23^{\circ}\text{F}$  , compressor stops operation, while the electric heating of compressor starts operation;
- (2) When Toutdoor amb.  $> 28.4^{\circ}\text{F}$  , the electric heating of compressor stops operation;
- (3) When  $23^{\circ}\text{F} < \text{Toutdoor amb.} \leq 28.4^{\circ}\text{F}$  , the electric heating of compressor will keep original status.

# Part II : Installation and Maintenance

## 7. Notes for Installation and Maintenance

### Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.

The following contents are very important for installation and maintenance.

Please follow the instructions below.

- The installation or maintenance must accord with the instructions.
- Comply with all national electrical codes and local electrical codes.
- Pay attention to the warnings and cautions in this manual.
- All installation and maintenance shall be performed by distributor or qualified person.
- All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
- Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.



### Warnings

#### Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires can't be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.

10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.

11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 1/8 inch.

12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.

13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.

14. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.

15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

#### Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 44.09lb.
3. When installing the indoor unit and outdoor unit, a sufficient fixing bolt must be installed; make sure the installation support is firm.
4. Ware safety belt if the height of working is above 78 3/4 inch.
5. Use equipped components or appointed components during installation.
6. Make sure no foreign objects are left in the unit after finishing installation.

#### Refrigerant Safety Precautions:

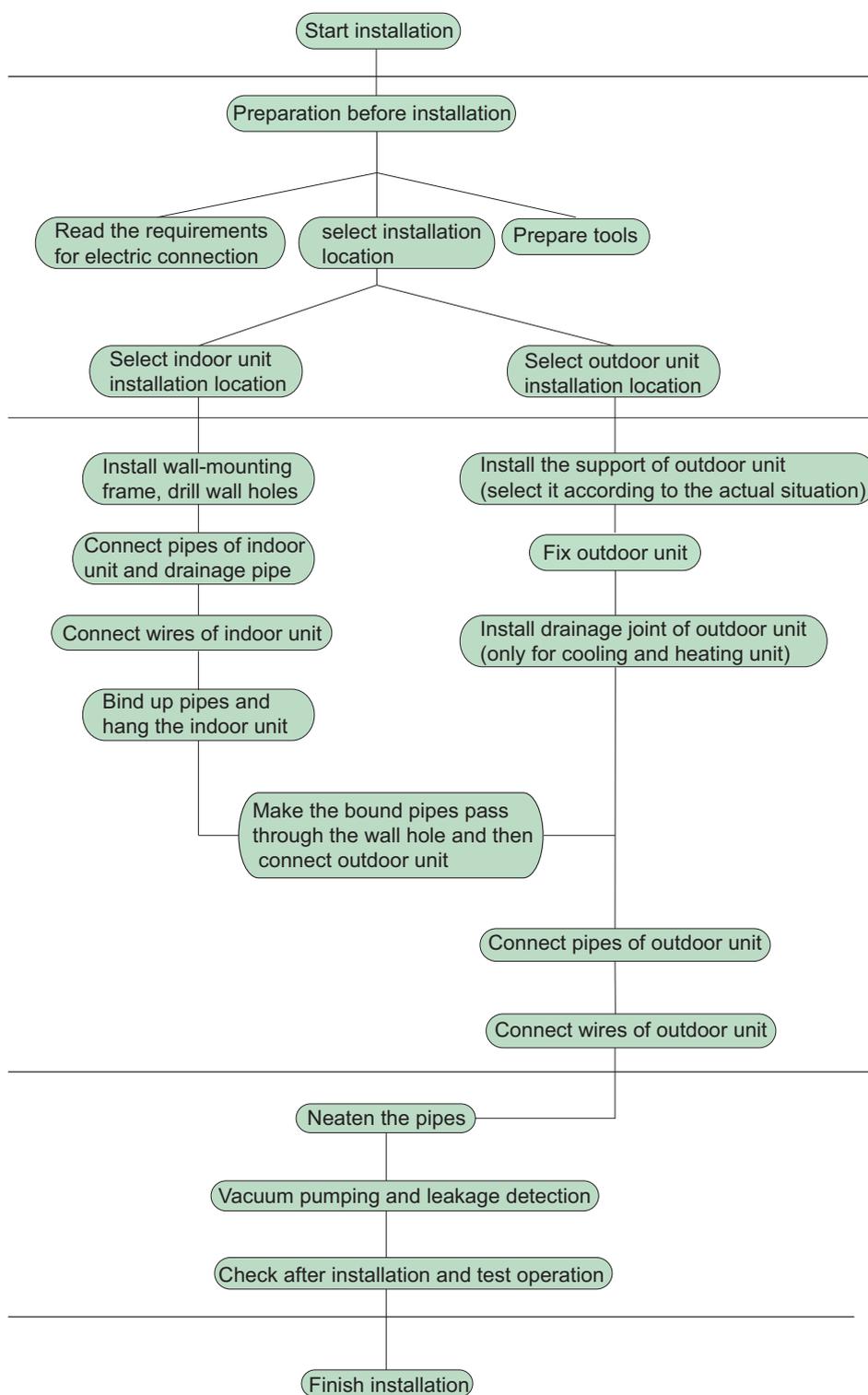
1. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
2. Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture or other hazards.
3. Make sure no refrigerant gas is leaking out when installation is completed.
4. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
5. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

Improper installation may lead to fire hazard, explosion, electric shock or injury.

## Main Tools for Installation and Maintenance

<p>1. Level meter, measuring tape</p> 	<p>2. Screw driver</p> 	<p>3. Impact drill, drill head, electric drill</p> 
<p>4. Electroprobe</p> 	<p>5. Universal meter</p> 	<p>6. Torque wrench, open-end wrench, inner hexagon spanner</p> 
<p>7. Electronic leakage detector</p> 	<p>8. Vacuum pump</p> 	<p>9. Pressure meter</p> 
<p>10. Pipe pliers, pipe cutter</p> 	<p>11. Pipe expander, pipe bender</p> 	<p>12. Soldering appliance, refrigerant container</p> 





Note: this flow is only for reference; please find the more detailed installation steps in this section.

## 8.2 Installation Parts-checking

No.	Name	No.	Name
1	Indoor unit	8	Sealing gum
2	Outdoor unit	9	Wrapping tape
3	Connection pipe	10	Support of outdoor unit
4	Drainage pipe	11	Fixing screw
5	Wall-mounting frame	12	Drainage plug(cooling and heating unit)
6	Connecting cable(power cord)	13	Owner's manual, remote controller
7	Wall pipe		

**⚠ Note:**

- 1.Please contact the local agent for installation.
- 2.Don't use unqualified power cord.

## 8.3 Selection of Installation Location

### 1. Basic Requirement:

Installing the unit in the following places may cause malfunction. If it is unavoidable, please consult the local dealer:

- (1) The place with strong heat sources, vapors, flammable or explosive gas, or volatile objects spread in the air.
- (2) The place with high-frequency devices (such as welding machine, medical equipment).
- (3) The place near coast area.
- (4) The place with oil or fumes in the air.
- (5) The place with sulfureted gas.
- (6) Other places with special circumstances.
- (7) It's not allowed to be installed on the unstable or motive base structure(such as truck) or in the corrosive environment (such as chemical factory).

### 2. Indoor Unit:

- (1) There should be no obstruction near air inlet and air outlet.
- (2) Select a location where the condensation water can be dispersed easily and won't affect other people.
- (3) Select a location which is convenient to connect the outdoor unit and near the power socket.
- (4) Select a location which is out of reach for children.
- (5) The location should be able to withstand the weight of indoor unit and won't increase noise and vibration.
- (6) The appliance must be installed 72inch above floor.
- (7) Don't install the indoor unit right above the electric appliance.
- (8) The appliance shall not be installed in the laundry.

### 3. Outdoor Unit:

- (1) Select a location where the noise and outflow air emitted by the outdoor unit will not affect neighborhood.
- (2) The location should be well ventilated and away from strong wind.
- (3) The location should be able to withstand the weight of outdoor unit.
- (4) Make sure that the installation follows the requirement of installation dimension diagram.
- (5) Select a location which is out of reach for children and far away from animals or plants.If it is unavoidable, please add fence for safety purpose.

## 8.4 Electric Connection Requirement

### 1. Safety Precaution

- (1) Must follow the electric safety regulations when installing the unit.
- (2) According to the local safety regulations, use qualified power supply circuit and air switch.
- (3) Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock,fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.

Air-conditioner	Air switch capacity
09/12K	15A
18k	25A
24K	30A

- (4) Properly connect the live wire, neutral wire and grounding wire of power socket.
- (5) Be sure to cut off the power supply before proceeding any work related to electricity and safety.
- (6) Do not put through the power before finishing installation.
- (7) For appliances with type Y attachment,the instructions shall contain the substance of thefollowing.If the supply cord is damaged,it must be replaced by the manufacturer,its service agent or similarly qualified persons in order to avoid a hazard.
- (8) The temperature of refrigerant circuit will be high, please keep the interconnection cable away from the copper tube.

### 2. Grounding Requirement:

- (1) The air conditioner is first class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
- (2) The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
- (3) The grounding resistance should comply with national electric safety regulations.
- (4) The appliance must be positioned so that the plug is accessible.
- (5) An all-pole disconnection switch having a contact separation of at least 1/8 inch in all poles should be connected in fixed wiring.
- (6) Including an air switch with suitable capacity, please note the following table. Air switch should be included magnet buckle and heating buckle function, it can protect the circuit-short and overload. (Caution: please do not use the fuse only for protect the circuit)

## 8.5 Installation of Indoor Unit

### 1. Choosing Installation location

Recommend the installation location to the client and then confirm it with the client.

### 2. Install Wall-mounting Frame

- (1) Hang the wall-mounting frame on the wall; adjust it in horizontal position with the level meter and then point out the screw fixing holes on the wall.
- (2) Drill the screw fixing holes on the wall with impact drill (the specification of drill head should be the same as the plastic expansion particle) and then fill the plastic expansion particles

in the holes.

(3) Fix the wall-mounting frame on the wall with tapping screws (ST4.2X25TA) and then check if the frame is firmly installed by pulling the frame. If the plastic expansion particle is loose, please drill another fixing hole nearby.

### 3. Install Wall-mounting Frame

(1) Choose the position of piping hole according to the direction of outlet pipe. The position of piping hole should be a little lower than the wall-mounted frame.(As show in Fig.1)

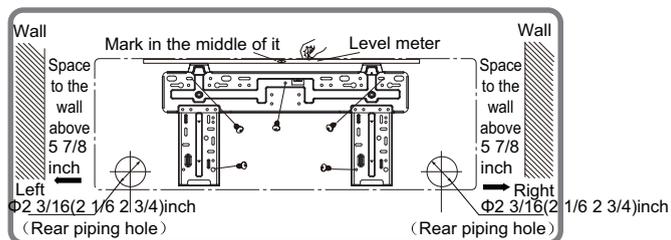


Fig.1

(2) Open a piping hole with the diameter of 2 3/16,2 1/6,2 3/4inch on the selected outlet pipe position.In order to drain smoothly, slant the piping hole on the wall slightly downward to the outdoor side with the gradient of 5-10°.(As show in Fig.2)

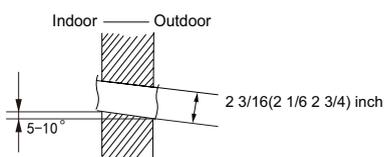


Fig.2

#### ⚠ Note:

- (1) Pay attention to dust prevention and take relevant safety measures when opening the hole.
- (2) The plastic expansion particles are not provided and should be bought locally.

### 4. Outlet Pipe

- (1) The pipe can be led out in the direction of right, rear right, left or rear left.(As show in Fig.3)
- (2) When selecting leading out the pipe from left or right, please cut off the corresponding hole on the bottom case.(As show in Fig.4)

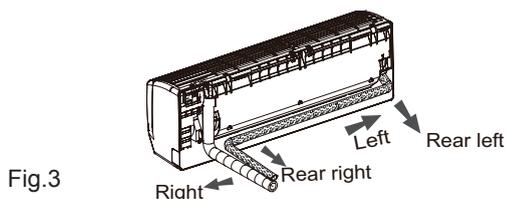


Fig.3

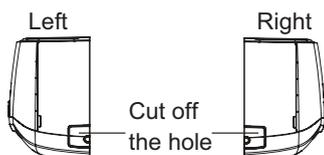
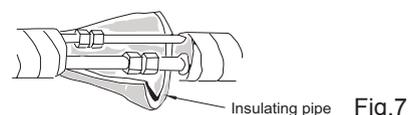
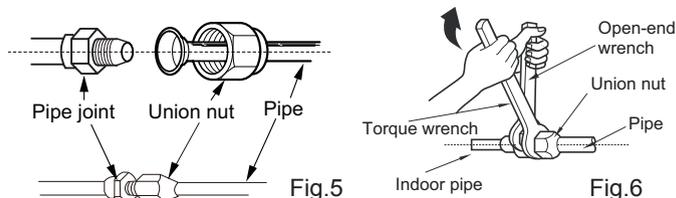


Fig.4

### 5. Connect the Pipe of Indoor Unit

- (1) Aim the pipe joint at the corresponding bellmouth.(As show in Fig.5)
- (2) Pretightening the union nut with hand.
- (3) Adjust the torque force by referring to the following sheet. Place the open-end wrench on the pipe joint and place the torque wrench on the union nut. Tighten the union nut with torque wrench.(As show in Fig.6)
- (4) Wrap the indoor pipe and joint of connection pipe with insulating pipe, and then wrap it with tape.(As show in Fig.7)



Refer to the following table for wrench moment of force:

Hex nut diameter(inch)	Tightening torque(ft.lbf)
Φ1/4	11.10~14.75
Φ3/8	22.12~29.50
Φ1/2	33.19~40.56
Φ5/8	44.24~47.94
Φ3/4	51.32~55.31

### 6. Install Drain Hose

- (1) Connect the drain hose to the outlet pipe of indoor unit.(As show in Fig.8)
- (2) Bind the joint with tape.(As show in Fig.9)

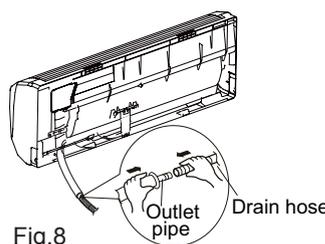


Fig.8

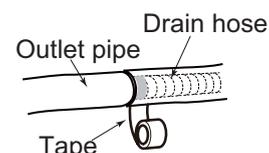


Fig.9

#### ⚠ Note:

- (1) Add insulating pipe in the indoor drain hose in order to prevent condensation.
- (2) The plastic expansion particles are not provided. (As show in Fig.10)

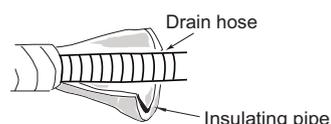
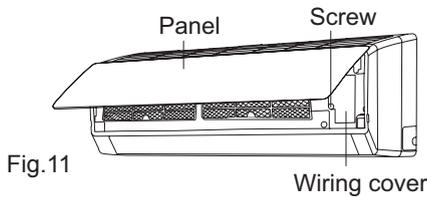


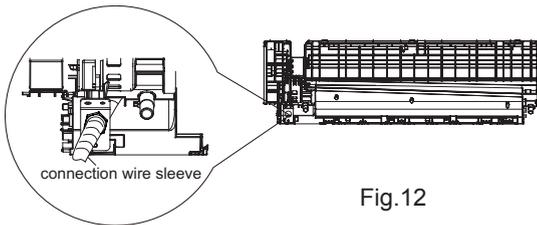
Fig.10

### 7. Connect Wire of Indoor Unit

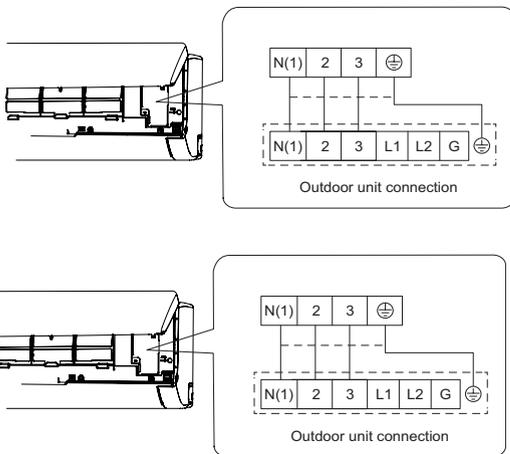
(1) Open the panel, remove the screw on the wiring cover and then take down the cover.(As show in Fig.11)



(2) Fix the wire crossing board on connection wire sleeve at the bottom case; let the connection wire sleeve go through the wire crossing hole at the back of indoor unit, and then pull it out from the front.(As show in Fig.12)



(3) Remove the wire clip; connect the power connection wire to the wiring terminal; tighten the screw and then fix the power connection wire with wire clip.(As show in Fig.13)



Note: the wiring board is for reference only, please refer to the actual one.

Fig.13

(4) Put wiring cover back and then tighten the screw.  
 (5) Close the panel.

**⚠ Note:**

- (1) All wires of indoor unit and outdoor unit should be connected by a professional.
- (2) If the length of power connection wire is insufficient, please contact the supplier for a new one. Avoid extending the wire by yourself.
- (3) For the air conditioner with plug, the plug should be reachable after finishing installation.
- (4) For the air conditioner without plug, an air switch must be installed in the line. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.

### 8. Bind up Pipe

(1) Bind up the connection pipe, power cord and drain hose with the band.(As show in Fig.14)

(2) Reserve a certain length of drain hose and power cord for installation when binding to a certain degree, separate the indoor power and then separate the drain hose.(As show in Fig.15)

(3) Bind them evenly.

(4) The liquid pipe and gas pipe should be bound separately at the end.

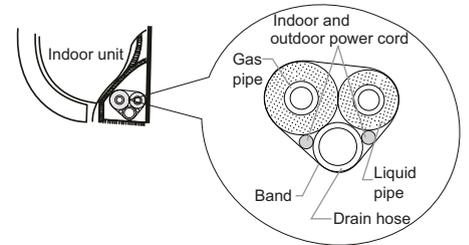


Fig.14

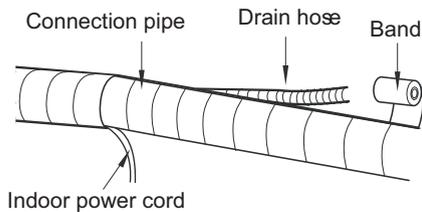


Fig.15

**⚠ Note:**

- (1) The power cord and control wire can't be crossed or winding.
- (2) The drain hose should be bound at the bottom.

### 9. Hang the Indoor Unit

(1) Put the bound pipes in the wall pipe and then make them pass through the wall hole.

(2) Hang the indoor unit on the wall-mounting frame.

(3) Stuff the gap between pipes and wall hole with sealing gum.

(4) Fix the wall pipe.(As show in Fig.16)

(5) Check if the indoor unit is installed firmly and closed to the wall.(As show in Fig.17)

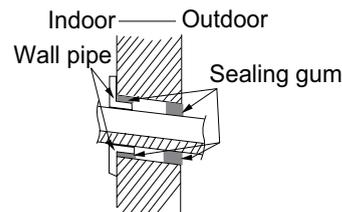


Fig.16

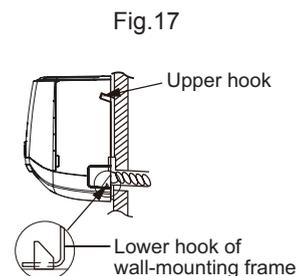


Fig.17

**⚠ Note:**

Do not bend the drain hose too excessively in order to prevent blocking.

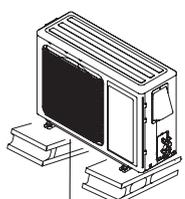
## 8.6 Installation of Outdoor Unit

### 1. Fix the Support of Outdoor Unit(Select it according to the actual installation situation)

- (1) Select installation location according to the house structure.
- (2) Fix the support of outdoor unit on the selected location with expansion screws.

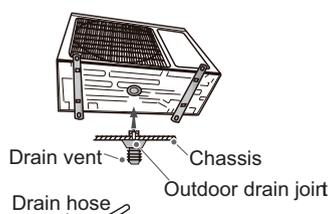
**⚠ Note:**

- (1) Take sufficient protective measures when installing the outdoor unit.
- (2) Make sure the support can withstand at least four times the unit weight.
- (3) The outdoor unit should be installed at least 1 3/16 inch above the floor in order to install drain joint.(As show in Fig.18)
- (4) For the unit with cooling capacity of 2300W~5000W, 6 expansion screws are needed; for the unit with cooling capacity of 6000W~8000W, 8 expansion screws are needed; for the unit with cooling capacity of 10000W~16000W, 10 expansion screws are needed.



At least 1 1/16 inch above the floor

Fig.18



Drain vent Chassis Outdoor drain joint  
Drain hose

Fig.19

### 2. Install Drain Joint(only for cooling and heating unit)

- (1) Connect the outdoor drain joint into the hole on the chassis.
  - (2) Connect the drain hose into the drain vent.
- (As show in Fig.19)

### 3. Fix Outdoor Unit

- (1) Place the outdoor unit on the support.
  - (2) Fix the foot holes of outdoor unit with bolts.
- (As show in Fig.20)

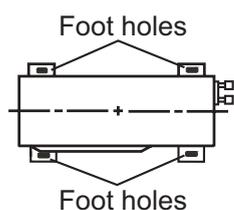


Fig.20

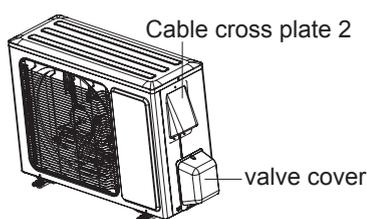


Fig.21

### 4. Connect Indoor and Outdoor Pipes

- (1) Remove the screw on the Cable cross plate 2 and valve cover of outdoor unit and then remove the Cable cross plate 2 and valve cover.(As show in Fig.21)
- (2) Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.(As show in Fig.22)

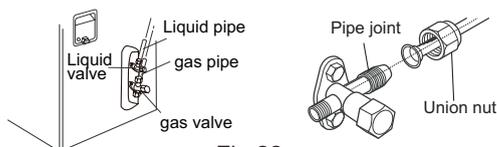


Fig.22

- (3) Pretightening the union nut with hand.
- (4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force :

Hex nut diameter(inch)	Tightening torque(ft-lbf)
Φ1/4	11.10~14.75
Φ3/8	22.12~29.50
Φ1/2	33.19~40.56
Φ5/8	44.24~47.94
Φ3/4	51.32~55.31

### 5. Connect Outdoor Electric Wire

- (1) Let the connection wire sleeve go through the two holes of baffle; tighten the connection joint of sleeve and baffle; remove the wire clip; connect the power connection wire and power cord to the wiring terminal according to the color; fix them with screws.(As show in Fig.23)

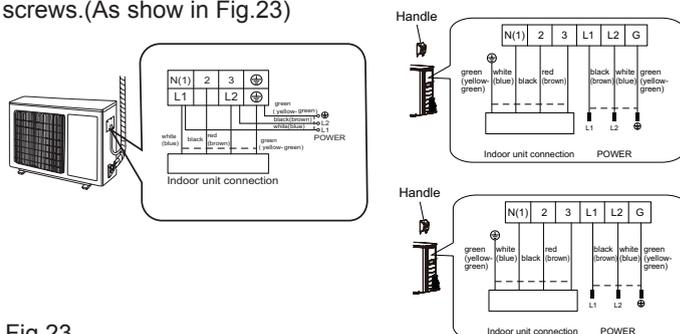


Fig.23

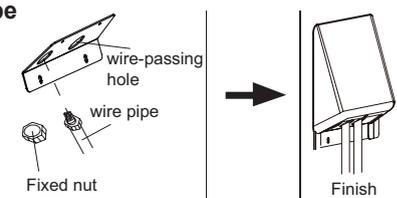
Note: the wiring board is for reference only, please refer to the actual one.

- (2) Fix the power connection wire and power cord with wire clip.
- (3) Fix the stopper on handle with screw.

**⚠ Note:**

- (1) After tightening the screw, pull the power cord slightly to check if it is firm.
- (2) Never cut the power connection wire to prolong or shorten the distance.
- (3)The connecting wire and connection pipe cannot touch each other,
- (4)Top cover of outdoor unit and electric box assembly should be fixed by the screw.Otherwise,it can cause a fire,or short circuit caused by water or dust.

### Install the over line pipe



### 6. Neaten the Pipes

- (1) The pipes should be placed along the wall, bent reasonably and hidden possibly. Min. semidiameter of bending the pipe is 3 15/16inch.
- (2) If the outdoor unit is higher than the wall hole, you must set a U-shaped curve in the pipe before pipe goes into the room, in order to prevent rain from getting into the room.(As show in Fig.24)

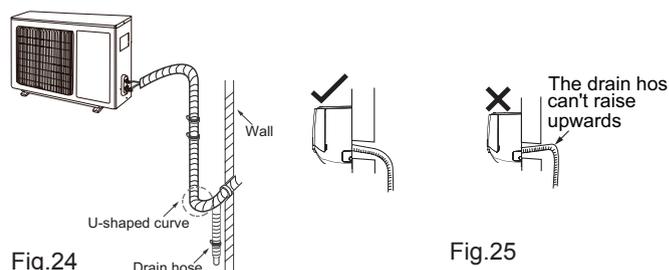


Fig.24

Fig.25



## 9. Maintenance

### 9.1 Error Code List

Name of malfunction	Display of indoor unit	Display of lamp (the times of blinking)					
		Indoor			Outdoor		
		R	C	H	Y	R	G
Anti-freezing protection	E2	2			3		
Block or Low pressure of refrigerant system	E3	3				9	
Compressor exhaust high temperature protection	E4	4			7		
AC over-current protection	E5	5			5		
Communication failure between indoor unit and outdoor unit	E6	6					O/U
Anti-high temperature protection	E8	8			6		
	H4			4	6		
No feedback of indoor fan motor	H6	11					
Jumper cap malfunction protection	C5	15					
Indoor unit and outdoor unit doesn't match	LP	19			16		
Outdoor DC fan motor malfunction	L3	23				14	
Power protection	L9	20			9		
Gathering refrigerant	Fo	1	1				
Indoor ambient sensor open or short circuit	F1		1				
Indoor tube sensor open or short circuit	F2		2				
Outdoor ambient sensor open or short circuit	F3		3			6	
Outdoor tube sensor open or short circuit	F4		4			5	
Exhaust sensor open or short circuit	F5		5			7	
Overload limit / drop frequency	F6		6			3	
Over current limit / drop frequency	F8		8			1	
High exhaust temperature limit / drop frequency	F9		9			2	
Refrigerant leakage protection	F0		10			9	
Anti-freezing limit / drop frequency	FH		2	2		4	
Defrosting	H1			1	2		
Compressor overload protection	H3			3	8		
IPM protection	H5			5	4		
Module temperature is too high	H5			5	10		
PFC protection	HC			6	14		
Loading EEPROM malfunction	EE			15	11		
High PN voltage protection	PH		11		13		
Low PN voltage protection	PL			21	12		
4-way valve reversal abnormal	U7		20				
DRED1 / DRED2 / DRED3	d1/d2/d3						
Compressor Min frequency in test state	P0						
Compressor rated frequency in test state	P1						
Compressor maximum frequency in test state	P2						
Compressor intermediate frequency in test state	P3						
Compressor is running(normal)					1		
The temperature for turning on the unit is reached(normal)						8	
Frequency limiting (module temperature )	EU		6	6		11	
Frequency limiting (power)	LU		24			13	

Notes: R(Indoor)--Running C--Cooling H--Heating Y--Yellow R(Outdoor)--Red G--Green  
O/U--OFF or Unblink      The display difference between Fo and F0 is 'o' is the bottom part of figure 8

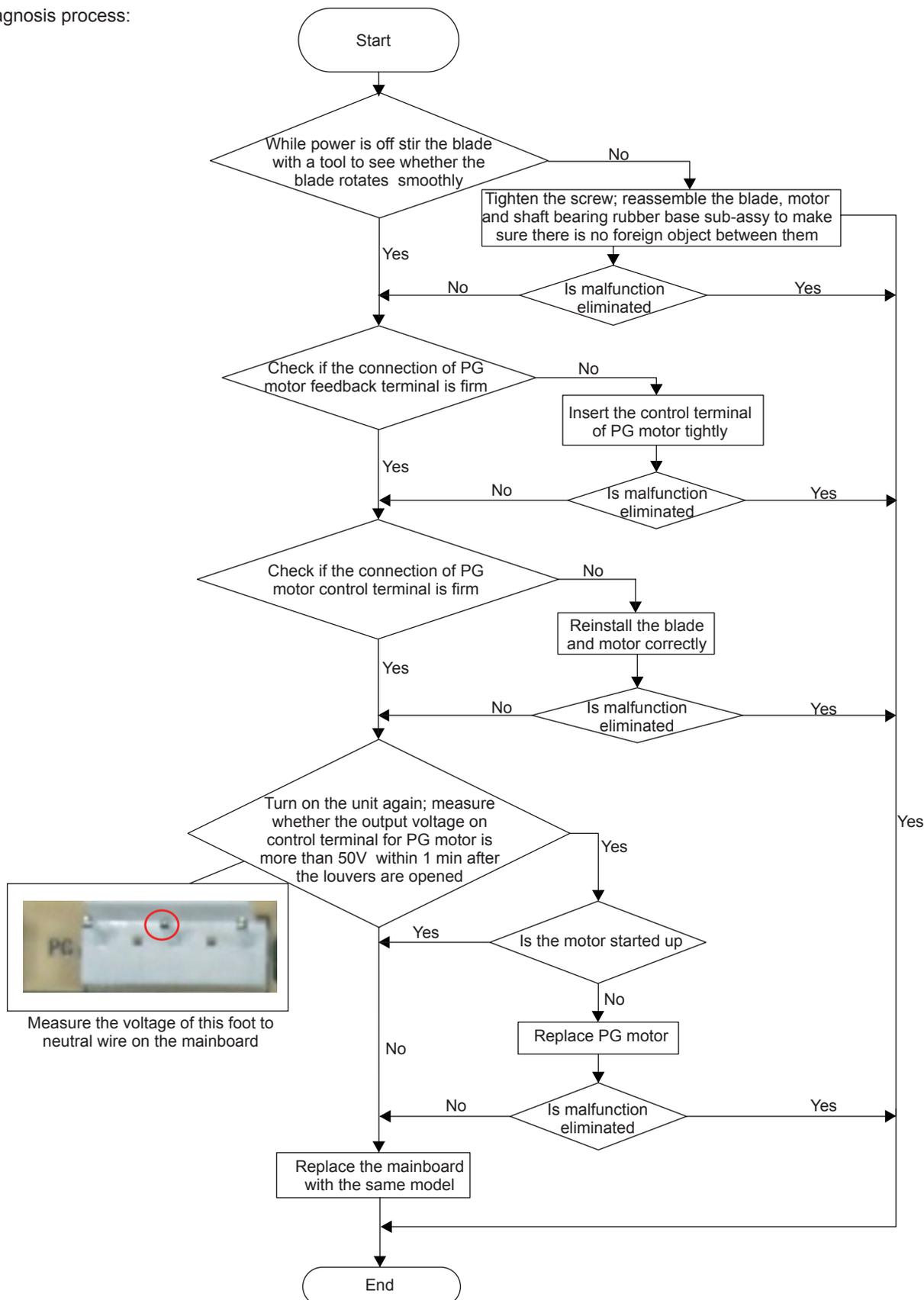


## 2. Malfunction of Blocked Protection of IDU Fan Motor H6

Main detection points:

- Smoothly Is the control terminal of PG motor connected tightly?
- Smoothly Is the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:



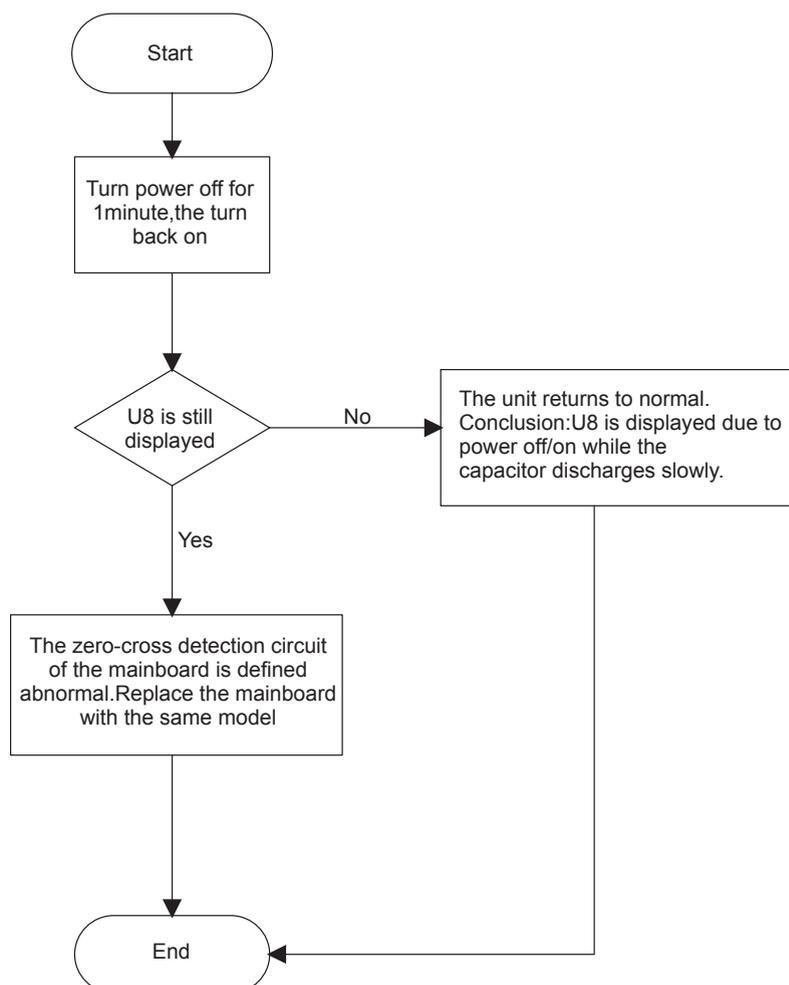


#### 4. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor U8

Main detection points:

- Instant energization after de-energization while the capacitor discharges slowly?
- The zero-cross detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:



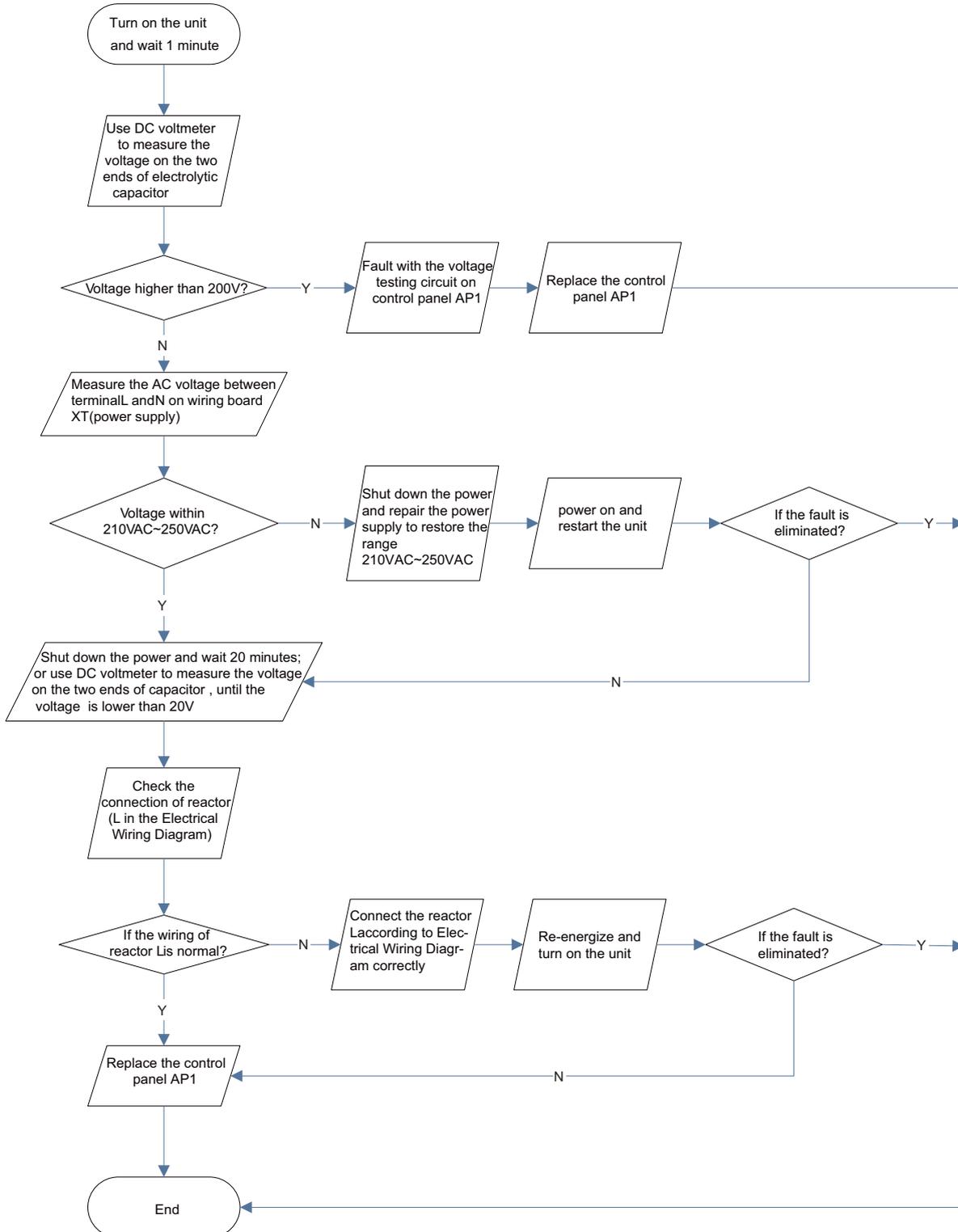
●Outdoor unit:

**(1) Capacitor charge fault (Fault with outdoor unit) (AP1 below refers to the outdoor control panel)**

Main Check Points:

- Use AC voltmeter to check if the voltage between terminal L and N on the wiring board is within 210VAC~240VAC.
- Is the reactor (L) correctly connected? Is the connection loose or fallen? Is the reactor (L) damaged?

Fault diagnosis process:

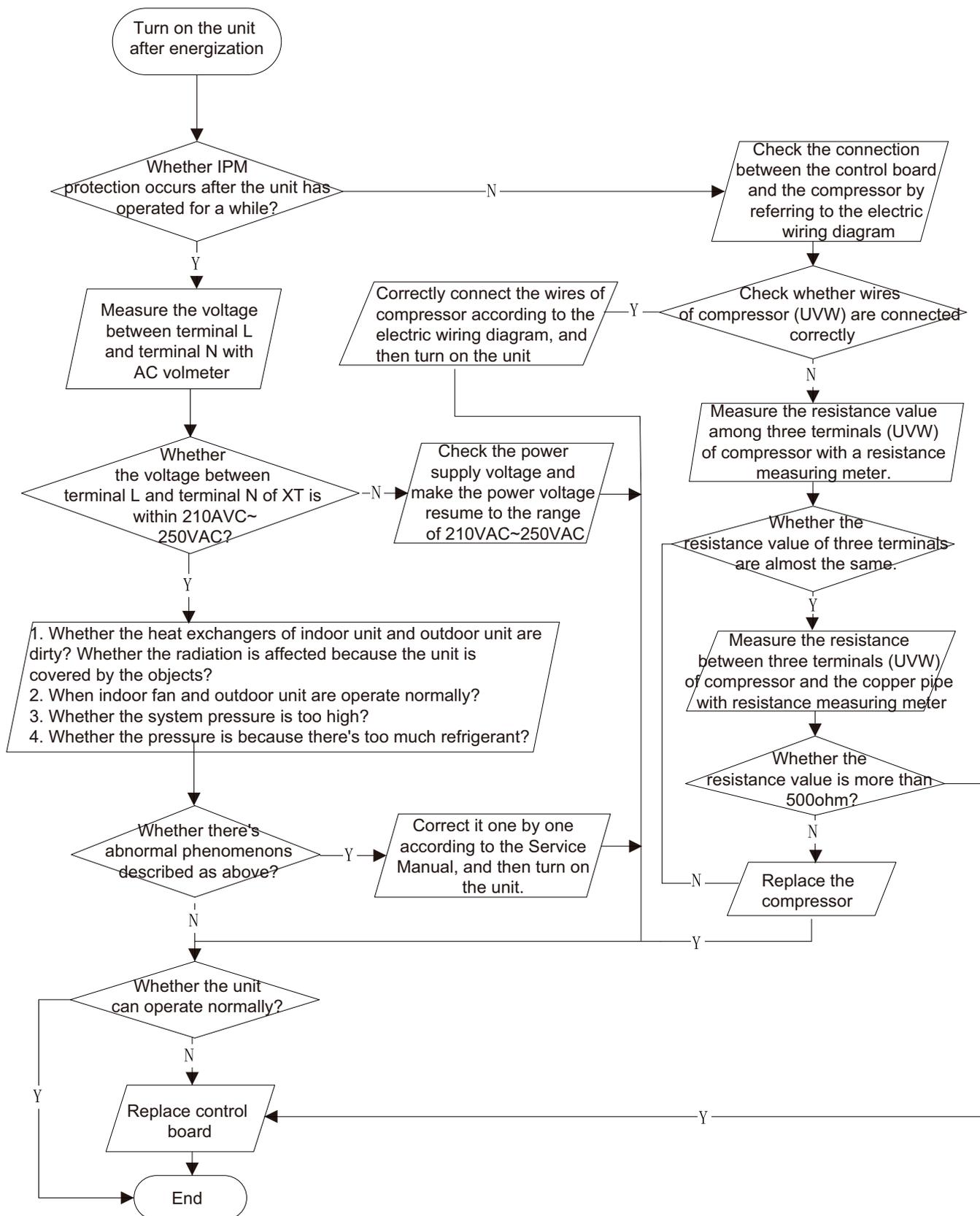


(2) IPM protection, phase current overcurrent (the control board as below indicates the control board of outdoor unit) H5/P5

Mainly detect:

- (1) Compressor COMP terminal (2) voltage of power supply (3) compressor
- (4) Refrigerant-charging volume (5) air outlet and air inlet of outdoor/indoor unit

Troubleshooting:

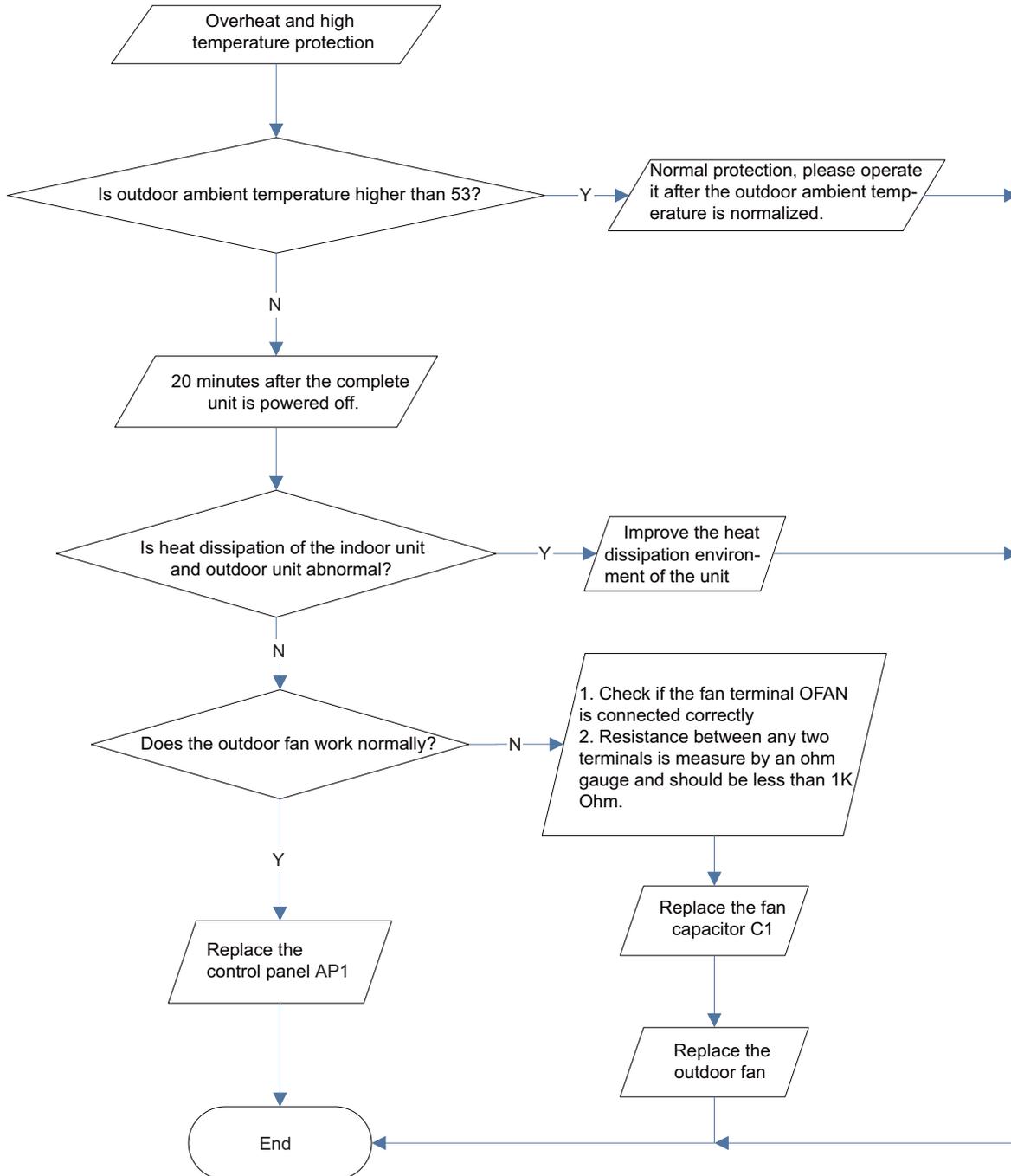


**(3) High temperature and overload protection diagnosis (AP1 hereinafter refers to the control board of the outdoor unit)**

Mainly detect:

- Is outdoor ambient temperature in normal range?
- Are the outdoor and indoor fans operating normally?
- Is the heat dissipation environment inside and outside the unit good?

Fault diagnosis process:

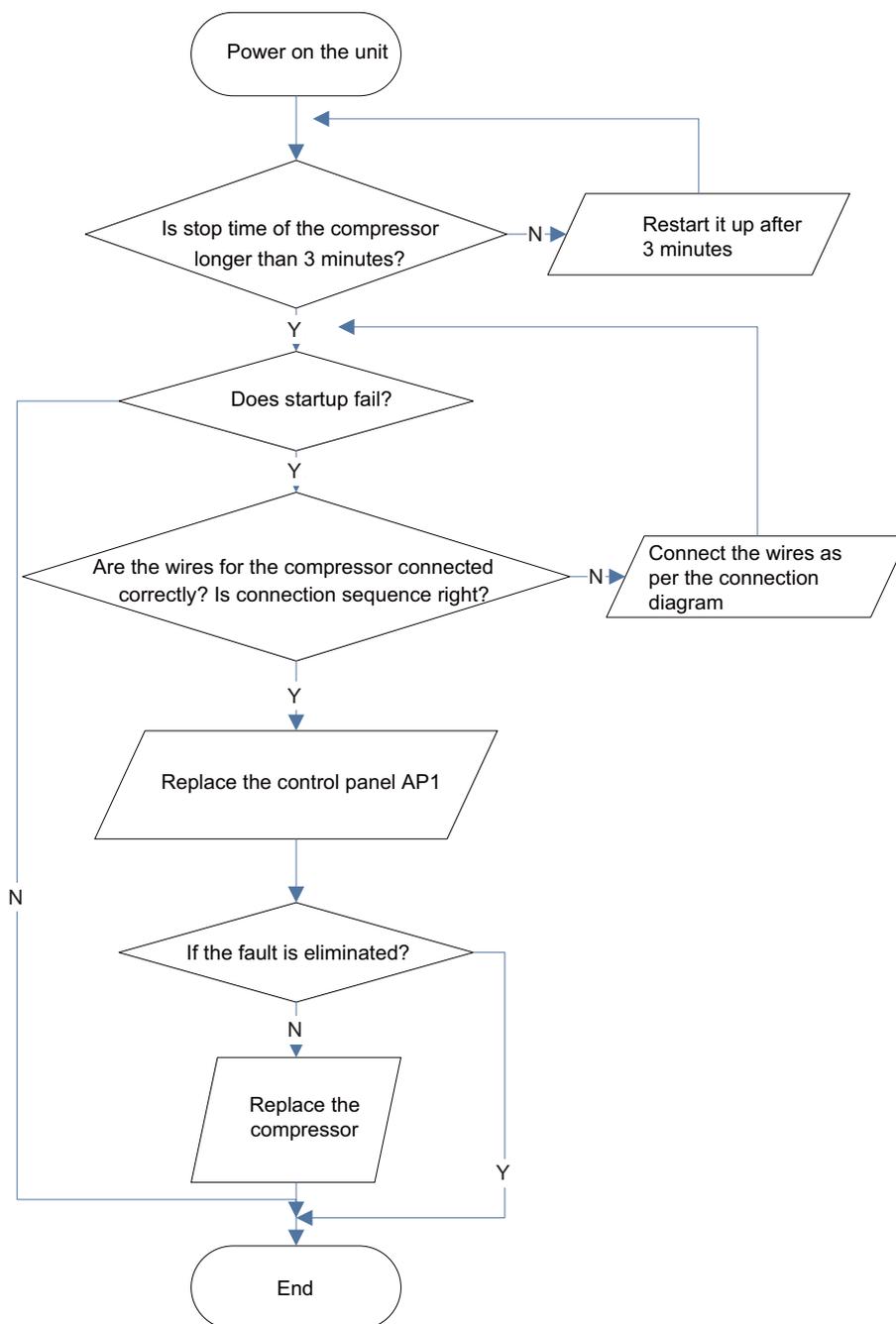


**(4) Start-up failure (following AP1 for outdoor unit control board)**

Mainly detect:

- Whether the compressor wiring is connected correct?
- Is compressor broken?
- Is time for compressor stopping enough?

Fault diagnosis process:

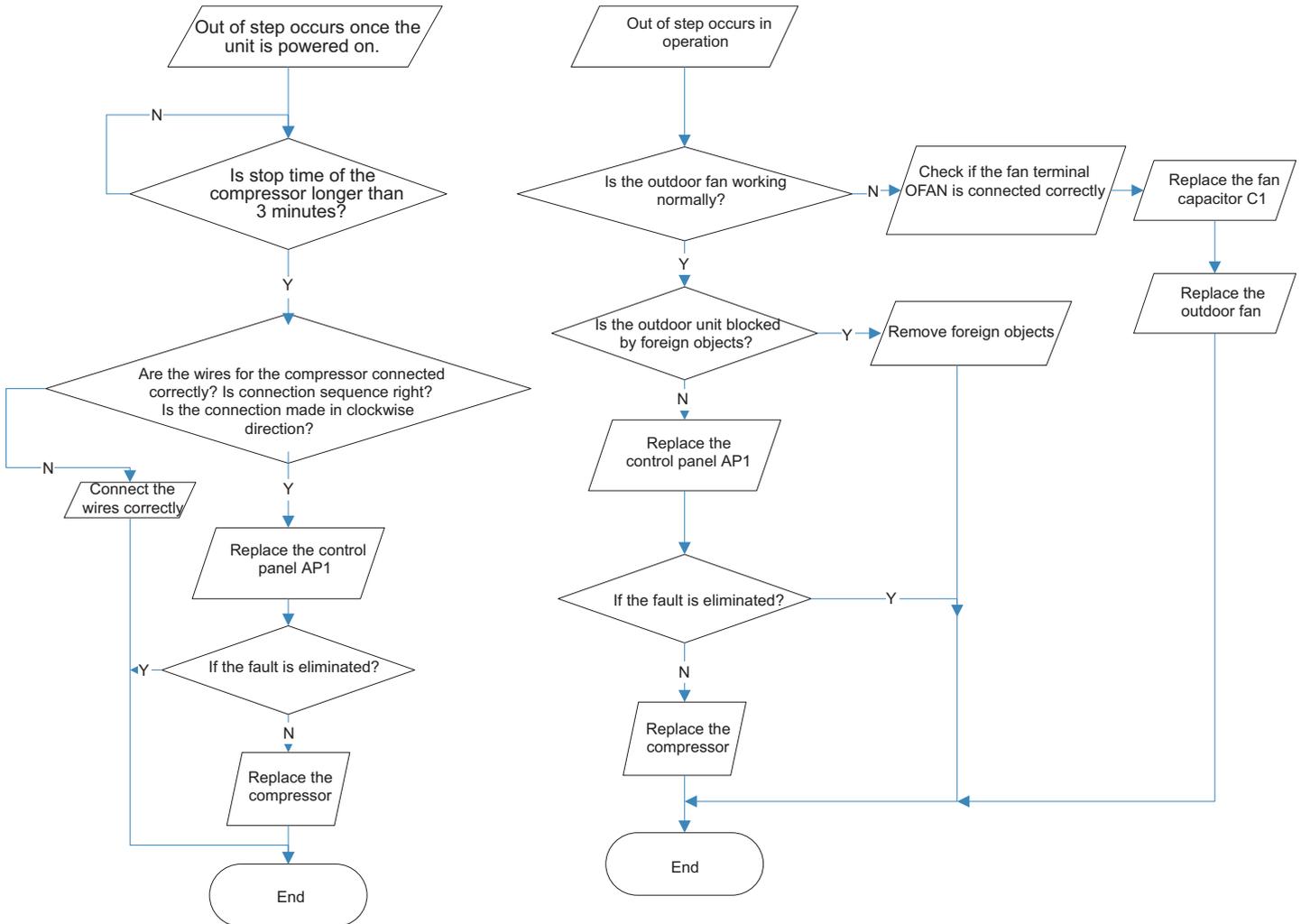


**(5) Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)**

Mainly detect:

- Is the system pressure too high?
- Is the input voltage too low?

Fault diagnosis process:

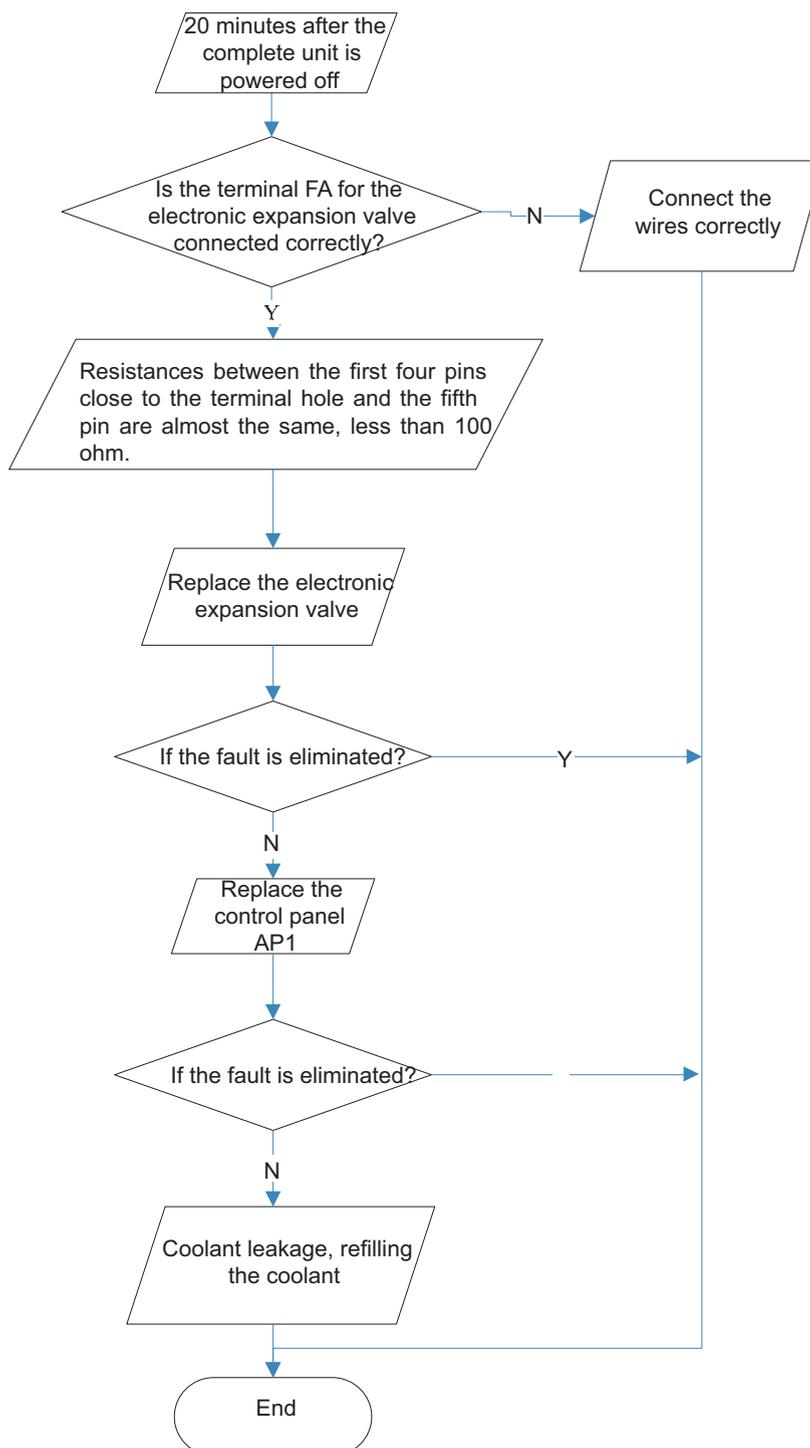


**(6) Overload and air exhaust malfunction diagnosis (following AP1 for outdoor unit control board)**

Mainly detect:

- Is the PMV connected well or not? Is PMV damaged?
- Is refrigerant leaked?

Fault diagnosis process:



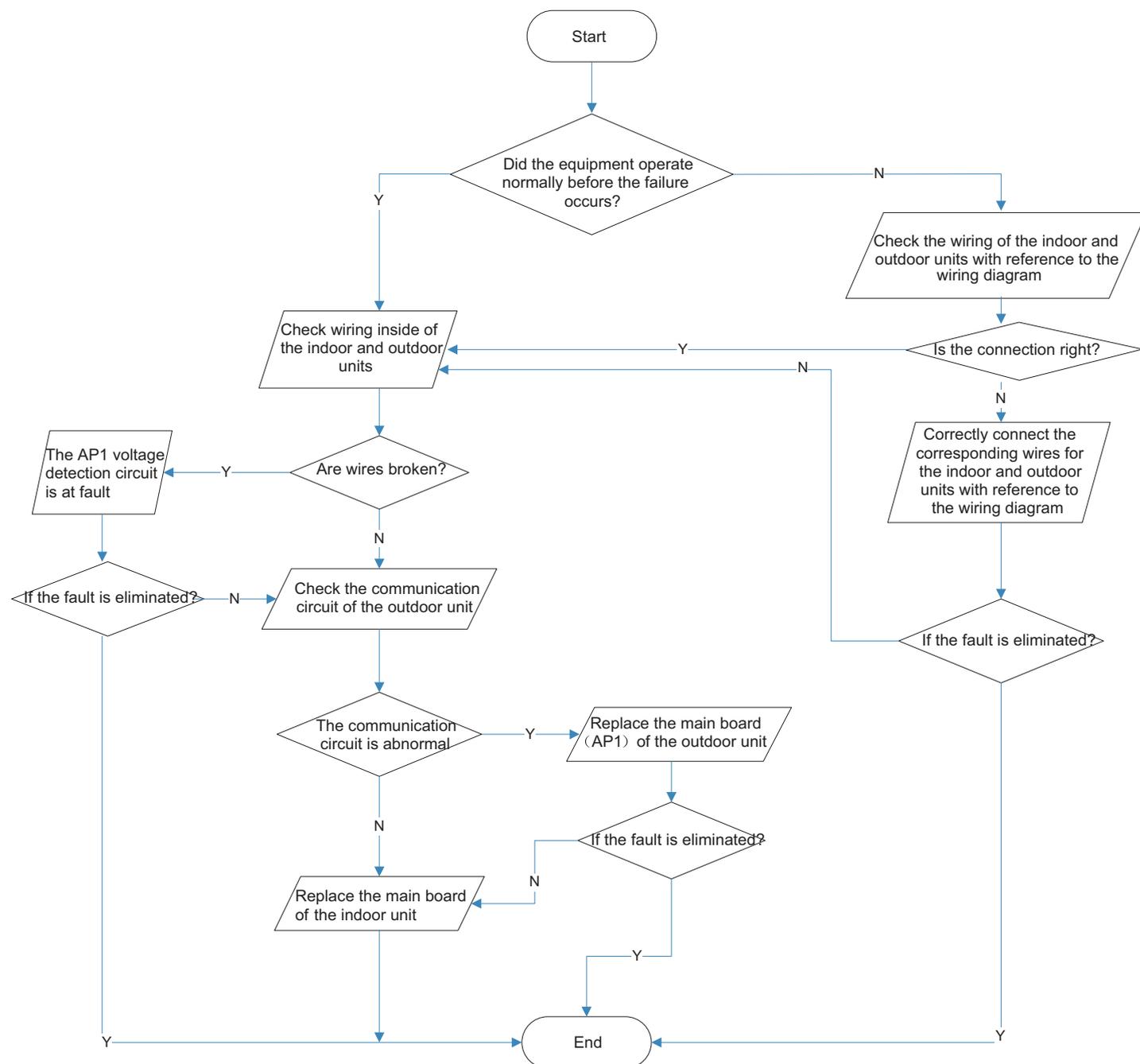


**(8) Communication malfunction: (following AP1 for outdoor unit control board)**

Mainly detect:

- Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?
- Detect the indoor and outdoor units connection wire and indoor and outdoor units inside wiring is connect well or not, if is there any damage?

Fault diagnosis process:



## 9.3 Troubleshooting for Normal Malfunction

### 1. Air Conditioner Can't be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't bright and the buzzer can't give out sound	Confirm whether it's due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals	Under normal power supply circumstances, operation indicator isn't bright after energization	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly
Electric leakage for air conditioner	After energization, room circuit breaker trips off at once	Make sure the air conditioner is grounded reliably Make sure wires of air conditioner is connected correctly Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, place the power cord.
Model selection for air switch is improper	After energization, air switch trips off	Select proper air switch
Malfunction of remote controller	After energization, operation indicator is bright, while no display on remote controller or buttons have no action.	Replace batteries for remote controller Repair or replace remote controller

### 2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see it's blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation position is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	Blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver can't swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 5 of maintenance method for details

### 3. Horizontal Louver Can't Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver can't operate	Replace the main board with the same model

**4. ODU Fan Motor Can't Operate**

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of the ODU fan motor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the capacity of fan
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Motor of outdoor unit is damaged	When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat.	Change compressor oil and refrigerant. If no better, replace the compressor with a new one

**5. Compressor Can't Operate**

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and it's 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor

**6. Air Conditioner is Leaking**

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe connection place of indoor unit	Wrap it again and bundle it tightly

**7. Abnormal Sound and Vibration**

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and there's abnormal sound	There's the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, there's abnormal sound due to flow of refrigerant inside air conditioner	Water-running sound can be heard	Normal phenomenon. Abnormal sound will disappear after a few minutes.
Foreign objects inside the indoor unit or there're parts touching together inside the indoor unit	There's abnormal sound fro indoor unit	Remove foreign objects. Adjust all parts' position of indoor unit, tighten screws and stick damping plaster between connected parts
Foreign objects inside the outdoor unit or there're parts touching together inside the outdoor unit	There's abnormal sound fro outdoor unit	Remove foreign objects. Adjust all parts' position of outdoor unit, tighten screws and stick damping plaster between connected parts
Short circuit inside the magnetic coil	During heating, the way valve has abnormal electromagnetic sound	Replace magnetic coil
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts
Abnormal sound inside the compressor	Abnormal sound inside the compressor	If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.



NO.	Description	Part Code	Qty
		TW09HQ1C8D/I	
	Product Code	CB456N00400_L59684	
1	Front Panel	27230007569	1
2	Display Board	30565281	1
3	Front Case Assy	00000200040	1
4	Helicoid Tongue	26112508	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100066	1
7	Drainage Hose	0523001408	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	7651205102	1
10	Evaporator Support	24212180	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	0100200004407	1
13	Wall Mounting Frame	01252043	1
14	Cross Flow Fan	10352059	1
15	Fan Motor	1501208905	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	Stepping Motor	1521212901	1
19	Crank	73012005	1
20	Electric Box Assy	10000203235	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021911	1
24	Main Board	30138000659	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	30510475_TOSOT	1

Above data is subject to change without notice.



NO.	Description	Part Code	Qty
		TW12HQ1C8D/I	
		Product Code CB456N00900_L59684	
1	Front Panel	27230007570	1
2	Display Board	30565281	1
3	Front Case Assy	00000200045	1
4	Helicoid Tongue	26112436	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100093	1
7	Drainage Hose	05230014	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	7651205102	1
10	Evaporator support	24212179	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	0100297601	1
13	Wall Mounting Frame	01252484	1
14	Cross Flow Fan	10352056	1
15	Fan Motor	1501214607	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	SteppingMotor	1521210710	1
19	Crank	73012005	1
20	Electric Box Assy	10000203188	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021917	1
24	Main Board	30138000656	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	30510475_TOSOT	1

Above data is subject to change without notice.



NO.	Description	Part Code	Qty
		TW18HQ1C8D/I	
		Product Code CB456N00300_L59684	
1	Decorative Strip(Convex)	/	0
2	Front Panel	27230007571	1
3	Display Board	30565278	1
4	Filter Sub-Assy	11122089	2
5	Decorative Board (Left)	/	0
6	Front Case	2002248401	1
7	Guide Louver	1051276501	1
8	Axile Bush	10542036	2
9	Air Louver(Manual)	10512732	3
10	Helicoid Tongue	26112512	1
11	Left Axile Bush	10512037	1
12	Rear Case assy	22202571	1
13	Rubber Plug (Water Tray)	76712012	1
14	O-Gasket sub-assy of Bearing	7651205102	1
15	Ring of Bearing	26152025	1
16	Evaporator Support	24212177	1
17	Evaporator Assy	0100200001401	1
18	Cross Flow Fan	10352060	1
19	Fan Motor	1501214503	1
20	Motor Press Plate	26112511	1
21	Wall Mounting Frame	01362026	1
22	Connecting pipe clamp	2611218801	1
23	Crank	73012005	1
24	Stepping Motor	1521240212	1
25	Drainage Hose	05230014	1
26	Electric Box Assy	10000203192	1
27	Lower Shield of Electric Box	01592139	1
28	Electric Box	2011221102	1
29	Jumper	4202021919	1
30	Main Board	30138000662	1
31	Shield Cover of Electric Box	01592176	1
32	Electric Box Cover	2011220901	1
33	Terminal Board	42011233	1
34	Decorative Board (Left and Right)	20192662	0
35	Screw Cover	2425201726	3
36	Electric Box Cover2	2011221001	1
37	Power Cord	/	0
38	Connecting Cable	/	0
39	Connecting Cable	/	0
40	Remote Controller	30510475_TOSOT	1
41	Cold Plasma Generator	/	0

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NO.	Description	Part Code	Qty
		TW24HQ1C8D/I	
		Product Code CB456N00200_L59684	
1	Front Panel	27230007572	1
2	Filter Sub-Assy	11012007	2
3	Screw Cover	2425245301	3
4	Front Case Assy	00000200057	1
5	Air Louver(Manual)	10512737	3
6	Helicoid Tongue sub-assy	26112382	1
7	Left Axile Bush	10512037	1
8	Rear Case assy	22202570	1
9	Rubber Plug (Water Tray)	76712012	1
10	Ring of Bearing	26152025	1
11	O-Gasket sub-assy of Bearing	7651205102	1
12	Cross Flow Fan	10352057	1
13	Evaporator Support	24212178	1
14	Evaporator Assy	01100100029	1
15	Cold Plasma Generator	/	0
16	Wall Mounting Frame	01252229	1
17	Motor Press Plate	26112515	1
18	Fan Motor	1501214501	1
19	Connecting pipe clamp	26112514	1
20	Drainage Hose	0523001405	1
21	Stepping Motor	1521240212	1
22	Crank	73012005	1
23	Guide Louver	1051232001	1
24	Axile Bush	10542036	2
25	Electric Box	2011221102	1
26	Terminal Board	42011233	1
27	Electric Box Cover2	2011221001	1
28	Main Board	30138000658	1
29	Display Board	30565278	1
30	Shield Cover of Electric Box	01592176	1
31	Electric Box Cover	2011220901	1
32	Jumper	4202021926	1
33	Lower Shield of Electric Box	01592139	1
34	Electric Box Assy	10000203247	1
35	Power Cord	/	0
36	Connecting Cable	/	0
37	Connecting Cable	/	0
38	Temperature Sensor	3900031302	1
39	Remote Controller	30510475_TOSOT	1

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NO.	Description	Part Code	Qty
		TW09HQ1B8A/I	
		Product Code CB438N03702_L59684	
1	Front Panel Assy	27230012601	1
2	Display Board	30565260	1
3	Front Case Assy	00000200040	1
4	Helicoid Tongue	26112508	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100066	1
7	Drainage Hose	0523001408	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	76512051	1
10	Evaporator Support	24212180	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	0100200004407	1
13	Wall Mounting Frame	01252043	1
14	Cross Flow Fan	10352059	1
15	Fan Motor	1501208902	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	Stepping Motor	1521212901	1
19	Crank	73012005	1
20	Electric Box Assy	100002001620	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021911	1
24	Main Board	300002000307	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	305001000085_TOSOT	1
32	Checking Panel Assy	/	0
33	Guide Louver	1051276301	1
34	Swing Louver	10512721	1

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NO.	Description	TW12HQ1B8A/I	Qty
		Product Code CB438N03902_L59684	
1	Front Panel	27230012600	1
2	Display Board	30565260	1
3	Front Case Assy	00000200045	1
4	Helicoid Tongue	26112436	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100093	1
7	Drainage Hose	05230014	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	76512051	1
10	Evaporator support	24212179	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	0100297601	1
13	Wall Mounting Frame	01252484	1
14	Cross Flow Fan	10352056	1
15	Fan Motor	1501214605	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	SteppingMotor	1521210710	1
19	Crank	73012005	1
20	Electric Box Assy	100002001623	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021917	1
24	Main Board	300002000307	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	305001000085_TOSOT	1
32	Test Board Assy	/	0
33	Guide Louver	1051293101	1
34	Air Louver 1	10512723	1

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NO.	Description	Part Code	Qty
		TW09CQ2B8DI	
		Product Code CB438N00300_L91250	
1	Front Panel	27230010137	1
2	Display Board	30565260	1
3	Front Case Assy	00000200045	1
4	Helicoid Tongue	26112436	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100093	1
7	Drainage Hose	05230014	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	76512051	1
10	Evaporator Support	24212174	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	01002000030	1
13	Wall Mounting Frame	01252484	1
14	Cross Flow Fan	10352056	1
15	Fan Motor	1501246601	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	SteppingMotor	1521210710	1
19	Crank	73012005	1
20	Electric Box Assy	10000201781	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021909	1
24	Main Board	30138000317	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	30510475_TOSOT	1
32	Test Board Assy	/	0
33	Guide Louver	1051293101	1
34	Air Louver 1	10512723	1

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NO.	Description	TW12CQ2B8DI	Qty
		Product Code CB438N00200_L91250	
1	Front Panel	27230010137	1
2	Display Board	30565260	1
3	Front Case Assy	00000200045	1
4	Helicoid Tongue	26112436	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100093	1
7	Drainage Hose	05230014	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	76512051	1
10	Evaporator Support	24212174	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	0100200003001	1
13	Wall Mounting Frame	01252484	1
14	Cross Flow Fan	10352056	1
15	Fan Motor	1501246601	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	SteppingMotor	1521210710	1
19	Crank	73012005	1
20	Electric Box Assy	10000201784	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021920	1
24	Main Board	30138000317	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	30510475_TOSOT	1
32	Test Board Assy	/	0
33	Guide Louver	1051293101	1
34	Air Louver 1	10512723	1

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NO.	Description	Part Code	Qty
		TW09HQ2C2DI	
		Product Code CB439N05801_X18545	
1	Front Panel	27230006884	1
2	Display Board	30565281	1
3	Front Case Assy	00000200045	1
4	Helicoid Tongue	26112436	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100093	1
7	Drainage Hose	05230014	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	76512051	1
10	Evaporator Support	24212174	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	01002000030	1
13	Wall Mounting Frame	01252484	1
14	Cross Flow Fan	10352056	1
15	Fan Motor	150104060029	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	SteppingMotor	1521210710	1
19	Crank	73012005	1
20	Electric Box Assy	100002003835	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021909	1
24	Main Board	30138001018	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	305001000085_TOSOT	1
32	Test Board Assy	/	0
33	Guide Louver	1051293101	1
34	Air Louver 1	10512723	1

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NO.	Description	TW12HQ2C2DI	Qty
		Product Code CB439N05601_X18545	
1	Front Panel	27230006884	1
2	Display Board	30565281	1
3	Front Case Assy	00000200045	1
4	Helicoid Tongue	26112436	1
5	Left Axile Bush	10512037	1
6	Rear Case assy	00000100093	1
7	Drainage Hose	05230014	1
8	Ring of Bearing	26152022	1
9	O-Gasket sub-assy of Bearing	76512051	1
10	Evaporator Support	24212174	1
11	Cold Plasma Generator	/	0
12	Evaporator Assy	0100200003001	1
13	Wall Mounting Frame	01252484	1
14	Cross Flow Fan	10352056	1
15	Fan Motor	150104060029	1
16	Connecting pipe clamp	2611216401	1
17	Rubber Plug (Water Tray)	76712012	1
18	SteppingMotor	1521210710	1
19	Crank	73012005	1
20	Electric Box Assy	100002003834	1
21	Axile Bush	10542036	1
22	Terminal Board	42011233	1
23	Jumper	4202021920	1
24	Main Board	30138001018	1
25	Electric Box Cover Sub-Assy	0140206501	1
26	Shield Cover of Electric Box Cover	01592150	1
27	Electric Box Cover	2011220701	1
28	Power Cord	/	0
29	Connecting Cable	/	0
30	Connecting Cable	/	0
31	Remote Controller	305001000085_TOSOT	1
32	Test Board Assy	/	0
33	Guide Louver	1051293101	1
34	Air Louver 1	10512723	1

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NO.	Description	Part Code	Qty
		TW18HQ2C2DI	
		Product Code CB439N05901_X18545	
1	Decorative Strip(Left)	/	0
2	Front Panel	27230006886	1
3	Display Board	30565278	1
4	Filter Sub-Assy	1112208904	2
5	Decorative Board (Left and Right)	20192662	1
6	Front Case Assy	00000200042	1
7	Guide Louver	1051276501	1
8	Axile Bush	10542036	2
9	Air Louver(Manual)	10512732	3
10	Helicoid Tongue	26112512	1
11	Left Axile Bush	10512037	1
12	Rear Case assy	22202571	1
13	Rubber Plug (Water Tray)	76712012	1
14	O-Gasket sub-assy of Bearing	76512051	1
15	Ring of Bearing	26152025	1
16	Evaporator Support	24212177	1
17	Evaporator Assy	01100100085	1
18	Cross Flow Fan	10352060	1
19	Fan Motor	15012136	1
20	Motor Press Plate	26112511	1
21	Wall Mounting Frame	01362026	1
22	Connecting pipe clamp	2611218801	1
23	Crank	73012005	1
24	Stepping Motor	1521240212	1
25	Drainage Hose	05230014	1
26	Electric Box Assy	100002003815	1
27	Lower Shield of Electric Box	01592139	1
28	Electric Box	2011221105	1
29	Jumper	4202021924	1
30	Main Board	30138001018	1
31	Shield Cover of Electric Box	01592176	1
32	Electric Box Cover	2011220901	1
33	Terminal Board	42011233	1
34	Decorative Board (Right)	/	0
35	Screw Cover	2425201726	3
36	Electric Box Cover2	2011221001	1
37	Power Cord	/	0
38	Connecting Cable	/	0
39	Connecting Cable	/	0
40	Remote Controller	305001000085_TOSOT	1
41	Cold Plasma Generator	/	0

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NO.	Description	Part Code	Qty
		TW24HQ2C2DI	
		Product Code	
		CB439N05701_X18545	
1	Front Panel	27230006887	1
2	Filter Sub-Assy	11012007	2
3	Screw Cover	2425245301	3
4	Front Case Assy	00000200057	1
5	Air Louver(Manual)	10512737	3
6	Helicoid Tongue sub-assy	26112382	1
7	Left Axile Bush	10512037	1
8	Rear Case assy	22202570	1
9	Rubber Plug (Water Tray)	76712012	1
10	Ring of Bearing	26152025	1
11	O-Gasket sub-assy of Bearing	76512051	1
12	Cross Flow Fan	10352057	1
13	Evaporator Support	24212178	1
14	Evaporator Assy	01100100029	1
15	Cold Plasma Generator	/	0
16	Wall Mounting Frame	01252229	1
17	Motor Press Plate	26112515	1
18	Fan Motor	15012136	1
19	Connecting pipe clamp	26112514	1
20	Drainage Hose	0523001405	1
21	Stepping Motor	1521240212	1
22	Crank	73012005	1
23	Guide Louver	1051232001	1
24	Axile Bush	10542036	2
25	Electric Box	2011221105	1
26	Terminal Board	42011233	1
27	Electric Box Cover2	2011221001	1
28	Main Board	30138001018	1
29	Display Board	30565278	1
30	Shield Cover of Electric Box	01592176	1
31	Electric Box Cover	2011220901	1
32	Jumper	4202021926	1
33	Lower Shield of Electric Box	01592139	1
34	Electric Box Assy	100002003844	1
35	Power Cord	/	0
36	Connecting Cable	/	0
37	Connecting Cable	/	0
38	Temperature Sensor	3900031302	1
39	Remote Controller	305001000085_TOSOT	1

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NO.	Description	Part Code	Qty
		TW09HQ1C8D/O	
		Product Code CB427W02200_L59684	
1	Front Grill	01473012	1
2	Front Panel Assy	0153304804	1
3	Axial Flow Fan	10333004	1
4	Chassis Sub-assy	01700000095P	1
5	Clapboard Sub-Assy	0123338502	1
6	Drainage Connector	06123401	1
7	Compressor Gasket	76713027	3
8	4-Way Valve Assy	03073369	1
9	Valve Support	0171314201P	1
10	Cut off Valve	071302391	1
11	Valve	07100003	1
12	Valve Support Block	26113017	2
13	Right Side Plate Assy	013030713	1
14	Big Handle	/	0
15	Magnet Coil	4300040050	1
16	Electric Expand Valve Fitting	/	0
17	Rear Grill	01473009	1
18	Electric Box Sub-Assy	10000500131	1
19	Filter Board	/	0
20	Main Board	30138000679	1
21	Reactor	43130184	1
22	Electric Box Assy	10000100292	1
23	Terminal Board	422000060016	1
24	Wire Clamp	71010003	2
25	Top Cover Sub-Assy	000051060006	1
26	Condenser Assy	01100200349	1
27	Motor Support	01703104	1
28	Fan Motor	1501306723	1
29	Compressor Overload Protector(External)	00183111	1
30	Compressor and Fittings	00103892	1
31	Small Handle	26233100	1
32	Temperature Sensor	3900030805	1

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NO.	Description	Part Code	Qty
		TW12HQ1C8D/O	
		Product Code CB427W05900_L59684	
1	Front Grill	01473012	1
2	Front Panel Assy	0000030001504	1
3	Axial Flow Fan	10333004	1
4	Chassis Sub-assy	017000000126P	1
5	Clapboard Sub-Assy	0123338502	1
6	Drainage Connector	/	0
7	Compressor Gasket	76710287	3
8	4-Way Valve Assy	030152000094	1
9	Valve Support	0171314201P	1
10	Cut off Valve	071302391	1
11	Cut off Valve	07133082	1
12	Valve Support Block	26113017	2
13	Right Side Plate Assy	013030713	1
14	Big Handle	/	0
15	Magnet Coil	4300040050	1
16	Electric Expand Valve Fitting	/	0
17	Rear Grill	01473009	1
18	Electric Box Sub-Assy	10000500540	1
19	Filter Board	/	0
20	Main Board	30138001268	1
21	Reactor	43130184	1
22	Electric Box Assy	10000100885	1
23	Terminal Board	422000060016	1
24	Wire Clamp	71010003	2
25	Top Cover Sub-Assy	01253073	1
26	Condenser Assy	011002000134	1
27	Motor Support	0170310401	1
28	Fan Motor	1501306723	1
29	Compressor Overload Protector(External)	/	0
30	Compressor and Fittings	00103364	1
31	Small Handle	26233100	1
32	Temperature Sensor	3900030805	1

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NO.	Description	Part Code	Qty
		TW18HQ1C8D/O	
		Product Code	
		CB427W02000_L59684	
1	Front Grill	01473049	1
2	Front Panel Assy	0000030002401	1
3	Axial Flow Fan	10335008	1
4	Chassis Sub-assy	01700000093P	1
5	Drainage Connector	06123401	1
6	Compressor and Fittings	00105249G	1
7	4-Way Valve Assy	030152000291	1
8	Valve Support Assy	01715010P	1
9	Cut off Valve	071302392	1
10	Cut off Valve	0713506803	1
11	Valve Cover	22245002	1
12	Handle	26233053	1
13	Right Side Plate Assy	0130329202	1
14	Magnet Coil	4300040045	1
15	Wiring Clamp	26115004	1
16	Temperature Sensor	3900030901	1
17	Rear Grill	01473043	1
18	Condenser Assy	01100200339	1
19	Clapboard Assy	01233153	1
20	Coping Sub-Assy	000051000017	1
21	Motor Support Sub-Assy	01703154	1
22	Fan Motor	1501506402	1
23	Condenser Support Plate	01173127	1
24	Left Side Plate	01305093P	1
25	Electric Box Assy	10000100288	1
26	Electric Box	20113027	1
27	Terminal Board	42010255	1
28	Radiator	49010252	1
29	Main Board	30138000685	1

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NO.	Description	TW24HQ1C8D/O	Qty
		Product Code CB427W02400_L59684	
1	Rear Grill	01473043	1
2	Front Panel Assy	0000030002401	1
3	Axial Flow Fan	10335008	1
4	Fan Motor	1501506402	1
5	Chassis Sub-assy	0280336702P	1
6	Drainage Connector	/	0
7	Gas-liquid Separator	07223048	1
8	Compressor and Fittings	00105249G	1
9	4-Way Valve Assy	03073324	1
10	Electric Expansion Valve Sub-Assy	/	0
11	Valve Support Sub-Assy	01713098P	1
12	Cut off Valve	07130239	1
13	Valve Cover	22245002	1
14	Retaining Plate	02115006P	1
15	Handle Assy	02113109	1
16	Right Side Plate Assy	0130329202	1
17	Cut off Valve	07133157	1
18	Magnet Coil	4300040045	1
19	Clapboard Assy	0123315301	1
20	Condenser Assy	01100200347	1
21	Front Grill	01473049	1
22	Wiring Clamp	26115004	1
23	Coping Sub-Assy	000051000017	1
24	Motor Support Sub-Assy	0170512001	1
25	Drainage Plug	/	0
26	Condenser Support Plate	01173415	1
27	Left Side Plate	01305093P	1
28	Left Handle	/	0
29	Electric Box Assy	10000100294	1
30	Main Board	30138000673	1
31	Radiator	49010252	1
32	Electric Box	20113027	1
33	Wire Clamp	71010003	1
34	Wire Clamp	71010003	1
35	Terminal Board	42010255	1
36	Temperature Sensor	3900030901	1
37	Temperature Sensor	/	0
38	Insulated Board (Cover of Electric Box)	20113003	1

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NO.	Description	Part Code	Qty
		TW09HQ1B8A/O	
		Product Code CB427W03900_L59684	
1	Front Grill	01473012	1
2	Front Panel Assy	0153304901	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308507	1
5	Chassis Sub-assy	0120388105P	1
6	Drainage Connector	06123401	1
7	Compressor Gasket	76710302	3
8	Compressor and Fittings	00103862	1
9	Electric Expansion Valve Sub-Assy	/	0
10	Valve Cover	2012300101	1
11	Valve	07100003	1
12	Valve	07100005	1
13	Valve Support	01713041	1
14	Cable Cross Plate 2	02123014P	1
15	Cable Cross Plate 1	02123013P	1
16	Right Side Plate Assy	013030713	1
17	Cover of Pass Wire	01413069	1
18	Electric Expand Valve Fitting	/	0
19	Temperature Sensor	39000310	1
20	4-Way Valve Assy	03073403	1
21	Magnet Coil	4300040021	1
22	Compressor Overload Protector(External)	00180030	1
23	Rear Grill	01473057	1
24	Condenser Assy	01100200497	1
25	Clapboard Sub-Assy	01233034	1
26	Top Cover Sub-Assy	00005106001201	1
27	Motor suport spot welding sub-assy	/	0
28	Electric Box Cover Sub-Assy	0260309601	1
29	Main Board	30138000865	1
30	Electric Box Assy	100002061837	1
31	Terminal Board	422000060016	1

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NO.	Description	Part Code	Qty
		TW12HQ1B8A/O	
		Product Code CB427W03700_L59684	
1	Front Grill	01473012	1
2	Front Panel Assy	0153304901	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308507	1
5	Chassis Sub-assy	0120388103P	1
6	Drainage Connector	06123401	1
7	Compressor Gasket	76710302	3
8	Compressor and Fittings	00103862	1
9	Electric Expansion Valve Sub-Assy	/	0
10	Valve Cover	2012300101	1
11	Cut off Valve	07130239	1
12	Valve	07100005	1
13	Valve Support	01713041	1
14	Cable Cross Plate 2	02123014P	1
15	Cable Cross Plate 1	02123013P	1
16	Right Side Plate Assy	013030713	1
17	Cover of Pass Wire	01413069	1
18	Electric Expand Valve Fitting	/	0
19	Temperature Sensor	39000310	1
20	4-Way Valve Assy	03073403	1
21	Magnet Coil	4300040021	1
22	Compressor Overload Protector(External)	00180030	1
23	Rear Grill	01473057	1
24	Condenser Assy	01100200482	1
25	Clapboard Sub-Assy	01233034	1
26	Top Cover Sub-Assy	00005106001201	1
27	Motor Suport Spot Welding Sub-assy	/	0
28	Electric Box Cover Sub-Assy	0260309601	1
29	Main Board	30138000863	1
30	Electric Box Assy	100002061850	1
31	Terminal Board	422000060016	1

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NO.	Description	Part Code	Qty
		TW09CQ2B8DO	
		Product Code CB419W04200_L91250	
1	Front Grill	01473012	1
2	Front Panel Assy	0153304901	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308507	1
5	Chassis Sub-assy	017000000181P	1
6	Compressor Gasket	76713027	3
7	Compressor and Fittings	00103892	1
8	Electric Expansion Valve Sub-Assy	07133769	1
9	Valve	07100003	1
10	Valve	07100005	1
11	Valve Support	01713041	1
12	Cable Cross Plate 1	02123013P	1
13	Right Side Plate	0130306903	1
14	Cover of Pass Wire	01413069	1
15	Electric Expand Valve Fitting	07200200001204	0
16	Discharge sensor	/	0
17	Tube Sensor	/	0
18	Discharge Tube	03813963	1
19	Inhalation Tube Sub-assy	03001000286	1
20	Compressor Overload Protector(External)	00183111	1
21	Temperature Sensor	3900030903	1
22	Rear Grill	01473057	1
23	Condenser Assy	01163412	1
24	Clapboard Sub-Assy	01233034	1
25	Top Cover Sub-Assy	00005106001201	1
26	Motor suport spot welding sub-assy	/	0
27	Cover of Reactor Box	01413029	1
28	Reactor	43130185	1
29	Reactor Box	01413092	1
30	Electric Box Cover Sub-Assy	0260309601	1
31	Main Board	30138000522	1
32	Electric Box Assy	10000100187	1
33	Terminal Board	422000060016	1

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NO.	Description	TW12CQ2B8DO	Qty
		Product Code CB419W04400_L91250	
1	Front Grill	01473012	1
2	Front Panel Assy	0153501604	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308507	1
5	Chassis Sub-assy	017000000181P	1
6	Electrical Heater(Compressor)	76513004	1
7	Compressor and Fittings	00103892	1
8	Compressor Gasket	76713027	3
9	Reactor	43130185	1
10	Valve Support	01713041	1
11	Valve	07100006	1
12	Valve	07100003	1
13	Valve Cover	22243010	1
14	Cable Cross Plate 1	02123013P	1
15	Cable Cross Plate 2	02123014P	1
16	Right Side Plate Sub-Assy	00013000001002	1
17	4-Way Valve Assy	/	0
18	Magnet Coil	/	0
19	Electric Expansion Valve Sub-Assy	030026000070	1
20	Electric Expand Valve Fitting	07200200001205	1
21	Rear Grill	01475014	1
22	Condenser Assy	011002000140	1
23	Compressor Overload Protector(External)	00183111	1
24	Clapboard Sub-Assy	01233090	1
25	Top Cover Sub-Assy	00005106001201	1
26	Motor Suport Spot Welding Sub-assy	/	0
27	Electric Box Cover Sub-Assy	0260309601	1
28	Magnetic Ring	49010104	1
29	Main Board	30138000520	1
30	Radiator	49013026	1
31	Electric Box 1	20113005	1
32	Terminal Board	422000060016	1
33	Wire Clamp	71010003	2
34	Electric Box Assy	10000100189	1
35	Temperature Sensor	39000310	1

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NO.	Description	Part Code	Qty
		TW09HQ2C2DO	
		Product Code CB419W04300_X18545	
1	Front Grill	01473012	1
2	Front Panel Assy	0153304901	1
3	Axial Flow Fan	10333004	1
4	Electrical Heater (Chassis)	76510004	1
5	Chassis Sub-assy	01700000053P	1
6	Drainage Connector	06123401	1
7	Electrical Heater(Compressor)	76513004	1
8	Compressor and Fittings	00103892	1
9	Compressor Gasket	76713027	3
10	Magnet Coil	4300040047	1
11	Valve Support	01713041	1
12	Valve	07100005	1
13	Valve	07100003	1
14	Big Handle	/	0
15	Right Side Plate	0130306903	1
16	4-Way Valve Assy	03073083	1
17	4-Way Valve	430004032	1
18	Electric Expansion Valve Sub-Assy	07133769	1
19	Electric Expand Valve Fitting	07200200001204	1
20	Rear Grill	01473057	1
21	Condenser Assy	01163565	1
22	Compressor Overload Protector(External)	00183111	1
23	Clapboard Sub-Assy	01233034	1
24	Top Cover Sub-Assy	00005106001201	1
25	Motor Support	0170310201	1
26	Fan Motor	1501308507	1
27	Electric Box Cover Sub-Assy	0260309601	1
28	Main Board	30138000521	1
29	Radiator	49013026	1
30	Electric Box 1	20113005	1
31	Terminal Board	422000060016	1
32	Wire Clamp	71010003	2
33	Electric Box Assy	10000100188	1
34	Temperature Sensor	3900030903	1
35	Drainage hole Cap	76713018	1
36	Drainage hole Cap	7671301804	1

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NO.	Description		Qty
		TW12HQ2C2DO	
	Product Code	CB419W04500_X18545	
1	Front Grill	01473012	1
2	Front Panel Assy	0153501604	1
3	Axial Flow Fan	10333004	1
4	Fan Motor	1501308507	1
5	Chassis Sub-assy	01700000053P	1
6	Electrical Heater(Compressor)	76513004	1
7	Compressor and Fittings	00103892	1
8	Compressor Gasket	76713027	3
9	Reactor	43130185	1
10	Valve Support	01713041	1
11	Valve	07100006	1
12	Valve	07100003	1
13	Valve Cover	22243010	1
14	Cable Cross Plate 1	02123013P	1
15	Cable Cross Plate 2	02123014P	1
16	Right Side Plate Sub-Assy	00013000001002	1
17	4-Way Valve Assy	03015200098	1
18	Magnet Coil	4300040047	1
19	Electric Expansion Valve Sub-Assy	030026000070	1
20	Electric Expand Valve Fitting	07200200001205	1
21	Rear Grill	01475014	1
22	Condenser Assy	011002000137	1
23	Compressor Overload Protector(External)	00183111	1
24	Clapboard Sub-Assy	01233090	1
25	Top Cover Sub-Assy	00005106001201	1
26	Motor Suport Spot Welding Sub-assy	/	0
27	Electric Box Cover Sub-Assy	0260309601	1
28	Magnetic Ring	49010104	1
29	Main Board	30138000519	1
30	Radiator	49013026	1
31	Electric Box 1	20113005	1
32	Terminal Board	422000060016	1
33	Wire Clamp	71010003	2
34	Electric Box Assy	10000100190	1
35	Temperature Sensor	39000310	1

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NO.	Description	Part Code	Qty
		TW18HQ2C2DO	
		Product Code CB419W06700_X18545	
1	Front Grill	016004000006	1
2	Front Panel Assy	000003060055	1
3	Axial Flow Fan	10335008	1
4	Drainage Plug	/	0
5	Chassis Sub-assy	01700000161P	1
6	Drainage Connector	06123401	1
7	Compressor and Fittings	00105249G	1
8	4-Way Valve	430004032	1
9	4-Way Valve Assy	03073411	1
10	Capillary Tube	03015737	1
11	Cut off Valve	07130239	1
12	Right Side Plate Assy	0130329208	1
13	Valve Support Sub-Assy	01705046P	1
14	Cut off Valve	07133844	1
15	Handle	26233053	1
16	Capacitor CBB65	/	0
17	Temperature Sensor	3900030902	1
18	Wiring clamp	/	0
19	Rear Grill	01475020	1
20	Condenser Assy	01103000090	1
21	Clapboard Sub-Assy	01235081	1
22	Condenser Support Plate	01795031	1
23	Motor Support Sub-Assy	01705067	1
24	Coping Sub-Assy	000051000017	1
25	Left Side Plate	01305093P	1
26	left handle	/	0
27	Terminal Board	42200006001401	1
28	Electric Box Assy	10000100632	1
29	Electric Box Cover	20125002	1
30	Main Board	30138000873	1
31	Radiator	4901521502	1
32	Electric Box	20115003	1
33	Capacitor CBB61	/	0
34	Electric box (fireproofing)	/	0
35	Fan Motor	1501506402	1

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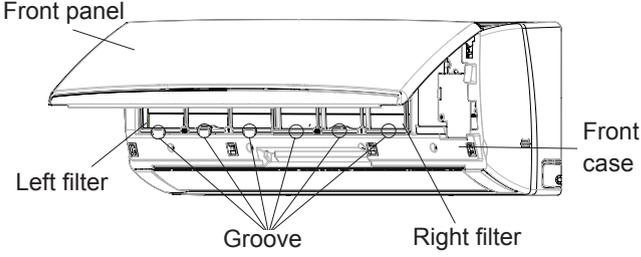
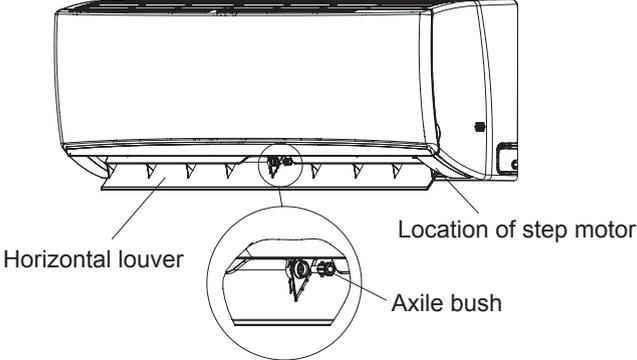
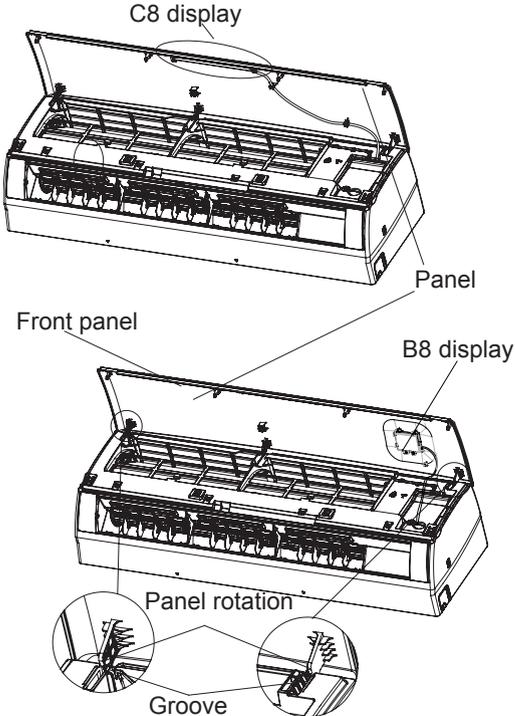
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		TW24HQ2C2DO	
		Product Code CB419W03600_X18545	
1	Front Grill	016004060005	1
2	Brushless DC Motor	15010400000102	1
3	Electric Box (Fireproofing)	01413426	1
4	Radiator	49015215	1
5	Main Board	30138000504	1
6	Electric Box Assy	10000100164	1
7	Terminal Board Support sub-assy	01703209	1
8	Terminal Board	42200006001401	1
9	Left Handle	/	0
10	Left Side Plate	01305043P	1
11	Coping	01255020P	1
12	Motor Support Sub-Assy	017012000017	1
13	Condenser Support Plate	01175092	1
14	Clapboard Sub-Assy	01235040	1
15	Condenser Assy	01100200162	1
16	Rear Grill	01475013	1
17	Wiring Clamp	26115004	1
18	Temperature Sensor	3900030901	1
19	Capacitor CBB65	/	0
20	Right Side Plate	0130504402P	1
21	Big Handle	02115005	1
22	Cut off Valve	07133157	1
23	Valve Support Sub-Assy	0171501201P	1
24	Baffle (valve support)	/	0
25	Capillary Tube	03015737	1
26	4-Way Valve Assy	03015200087	1
27	Magnet Coil	4300040045	1
28	Compressor Gasket	76713066	3
29	Compressor and Fittings	0010505701	1
30	Drainage Connector	06123401	1
31	Chassis Sub-assy	0280319604P	1
32	Drainage Plug	/	0
33	Axial Flow Fan	10335014	1
34	Front Side Plate Sub-Assy	01303249P	1
35	Front Panel Assy	0153501405	1

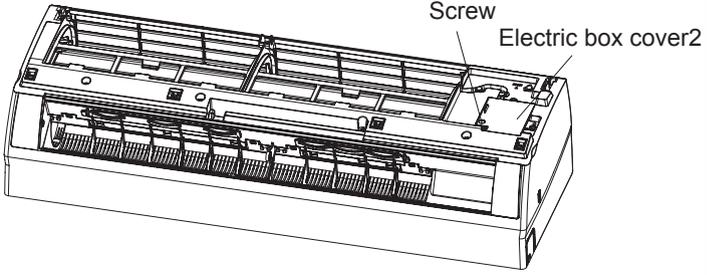
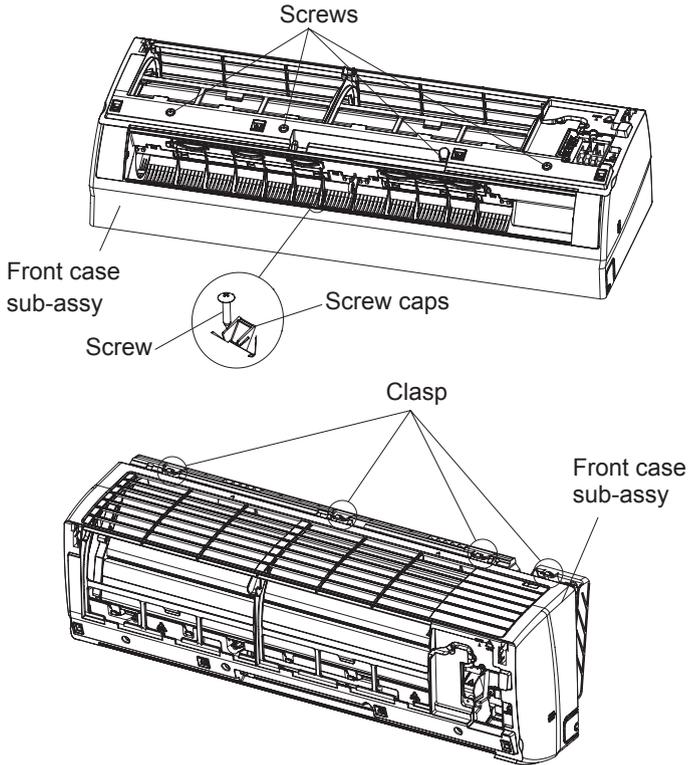
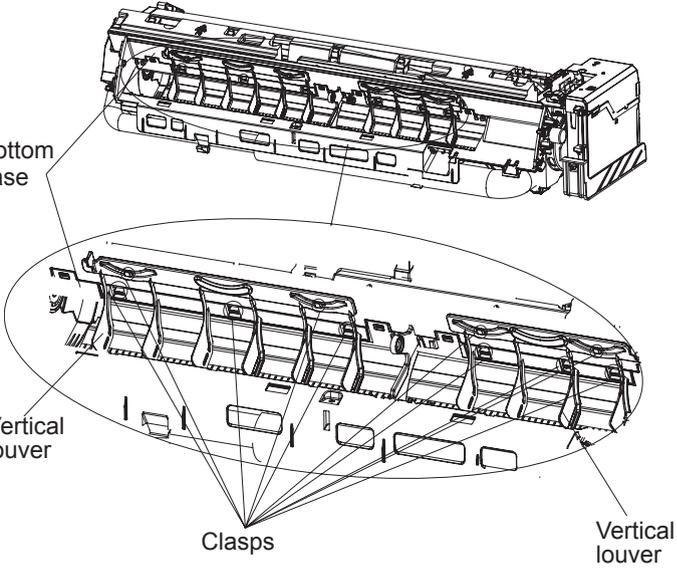
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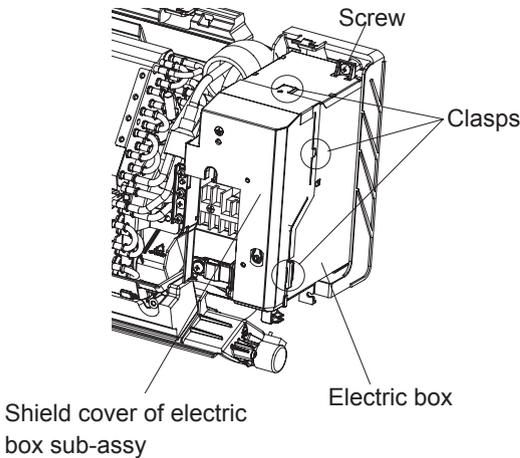
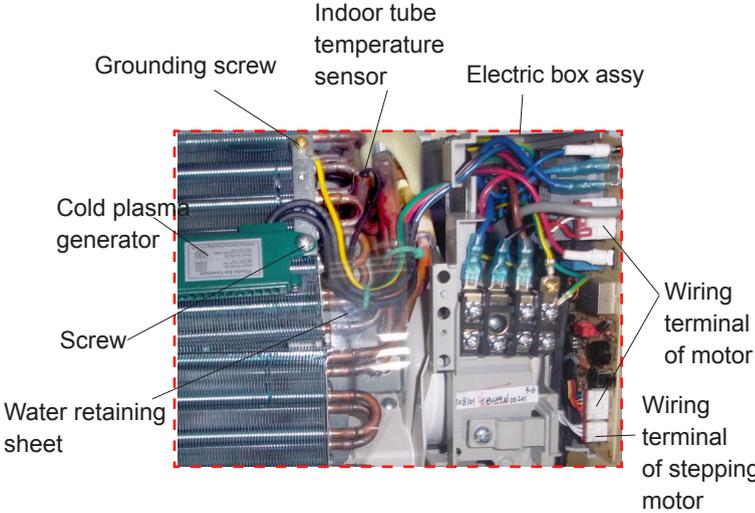
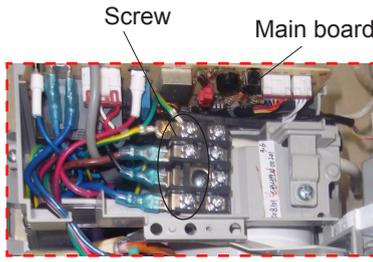
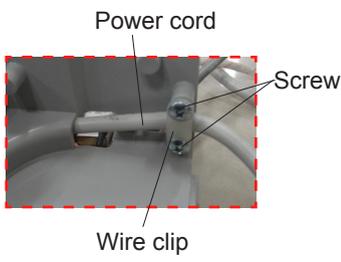
# 11. Removal Procedure

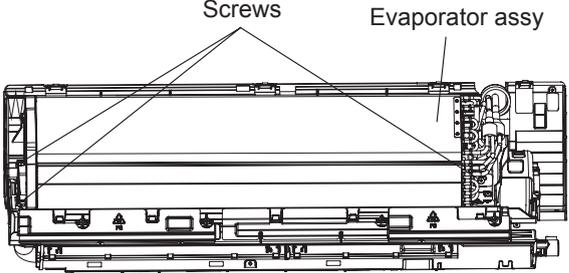
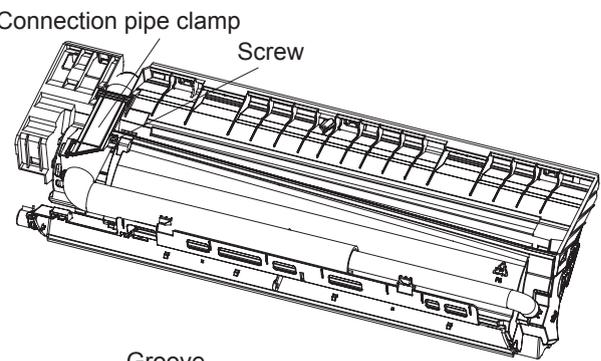
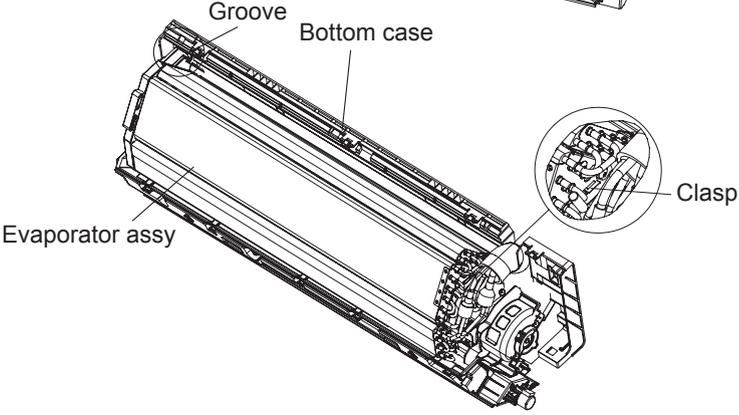
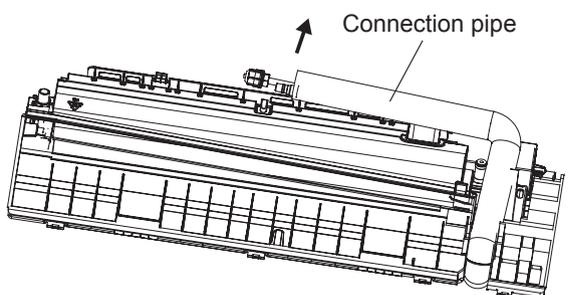
**⚠ Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.**

## 11.1 Removal Procedure of Indoor Unit

Step	Procedure	Diagram
1. Remove filter assembly	<p>Open the front panel. Push the left filter and right filter until they are separate from the groove on the front panel. Remove the left filter and right filter respectively.</p>	
2. Remove horizontal louver	<p>Push out the axle bush on horizontal louver. Bend the horizontal louver with hand and then separate the horizontal louver from the crankshaft of step motor to remove it.</p>	
3. Remove panel	<p>a (1)C8 panel display: Screw off the 2 screws that are locking the display board. Separate the display board from the front panel.</p> <p>(2)B8 panel display: Screw off the 2 screws that are locking the display board.</p> <p>b Separate the panel rotation shaft from the groove fixing the front panel and then removes the front panel.</p>	

Step	Procedure
4. Remove electric box cover2	<p>Remove the screws on the electric box cover 2 to remove the electric box cover.</p> 
<p>5. Remove front case sub-assy</p> <p>a Remove the screws fixing front case.</p> <p>Note: 1.Open the screw caps before removing the screws around the air outlet. 2.The quantity of screws fixing the front case sub-assy is different for different models.</p> <p>b Loosen the connection clasps between front case sub-assy and bottom case. Lift up the front case sub-assy and take it out.</p>	
6. Remove vertical louver	<p>Loosen the connection clasps between vertical louver and bottom case to remove vertical louver.</p> 

Step	Procedure
7. Remove electric box assy	
a	<p>Loosen the connection clasps between shield cover of electric box sub-assy and electric box, and then remove the shield cover of electric box sub-assy. Remove the screw fixing electric box assy .</p> 
b	<p>① Take off the water retaining sheet. Remove the cold plasma generator by screwing off the locking screw on the generator. ② Take off the indoor tube temperature sensor. ③ Screw off 1 grounding screw. ④ Remove the wiring terminals of motor and stepping motor. ⑤ Remove the electric box assy.</p> 
c	<p>Twist off the screws that are locking each lead wire and rotate the electric box assy. Twist off the screws that are locking the wire clip. Loosen the power cord and remove its wiring terminal. Lift up the main board and take it off.</p>  

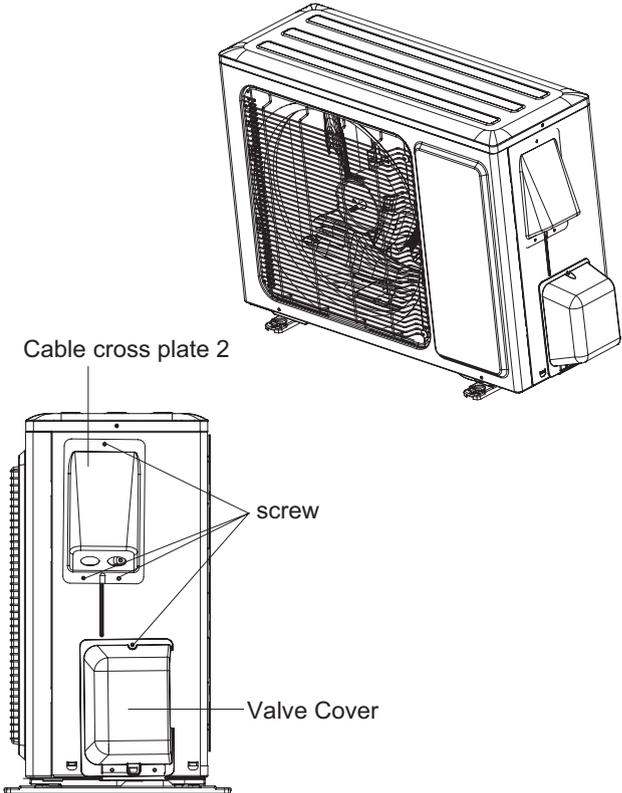
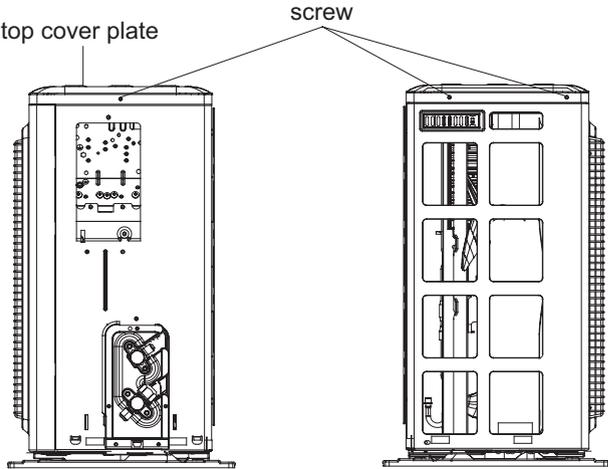
Step	Procedure	
	<p>Instruction: Some wiring terminal of this product is with lock catch and other devices. The pulling method is as below:</p> <p>1.Remove the soft sheath for some terminals at first, hold the circlip and then pull out the terminals.</p> <p>2.Pull out the holder for some terminals at first (holder is not available for some wiring terminal), hold the connector and then pull the terminal.</p>	 <p>Labels: circlip, soft sheath, holder, connector</p>
8. Remove evaporator assy		
a	Remove 3 screws fixing evaporator assy.	 <p>Labels: Screws, Evaporator assy</p>
b	At the back of the unit, remove the screw fixing connection pipe clamp and then remove the connection pipe clamp.	 <p>Labels: Connection pipe clamp, Screw</p>
c	First remove the left side of the evaporator from the groove of bottom case and then remove the right side from the clasp on the bottom case.	 <p>Labels: Groove, Bottom case, Evaporator assy, Clasp</p>
d	Adjust the position of connection pipe on evaporator slightly and then lift the evaporator upwards to remove it.	 <p>Labels: Connection pipe</p>



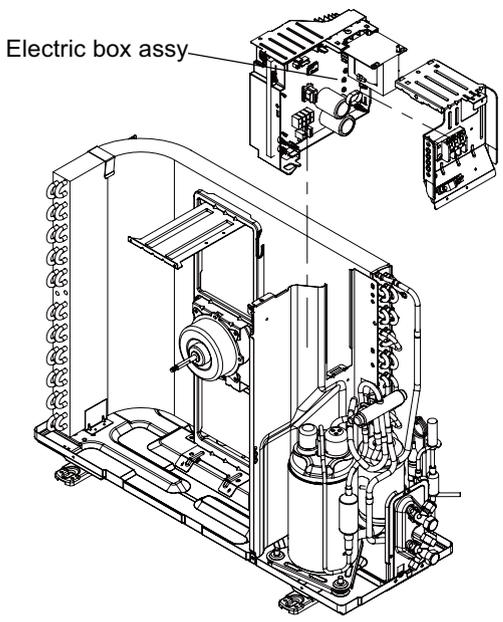
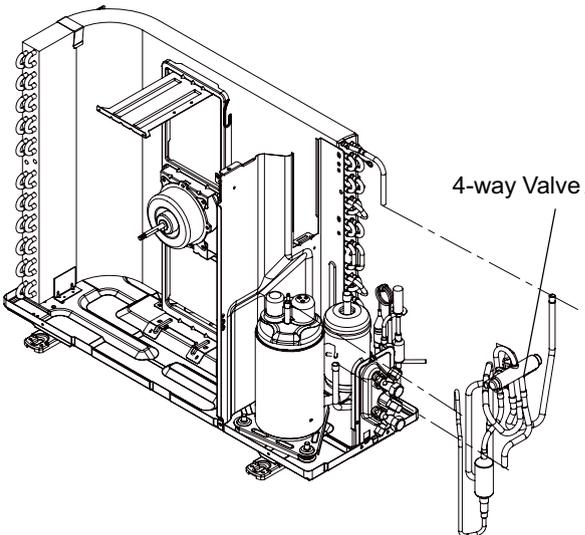
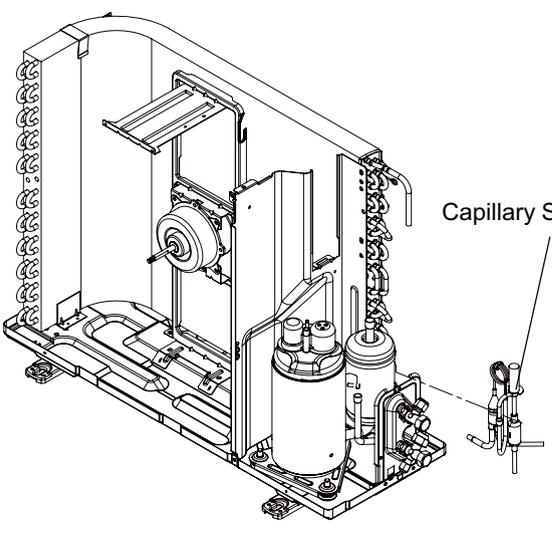
## 11.2 Removal Procedure of Outdoor Unit

**⚠ Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.**

TW09HQ1C8D/O TW09CQ2B8DO  
 TW12HQ1C8D/O TW12CQ2B8DO  
 TW09HQ1B8A/O TW09HQ2C2DO  
 TW12HQ1B8A/O TW12HQ2C2DO

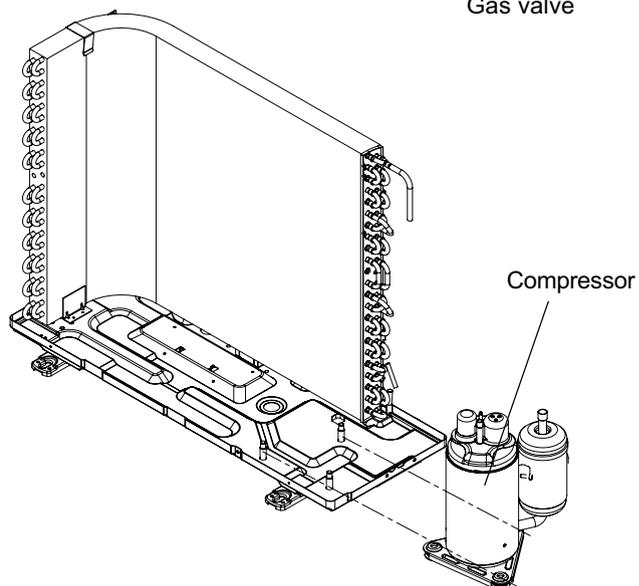
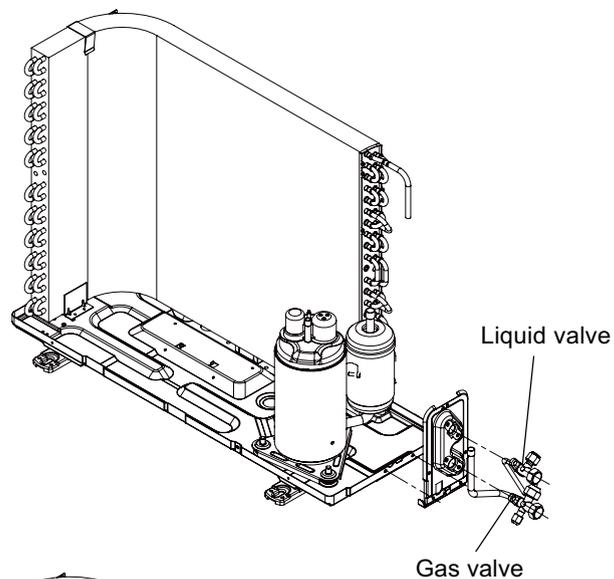
Steps	Procedure
<p><b>1.Remove cable cross plate 2</b></p>	<p>Before disassamble.</p> <p>Remove 3 connection screw fixing cable cross plate 2 and then remove the cable cross plate 2.</p> <p>Remove 1 connection screw fixing valve cover and then remove the valve cover.</p> 
<p><b>2. Remove top cover</b></p>	<p>Remove 3 connection screws among top cover plate, front panel and right side plate. Then remove top cover plate.</p> 



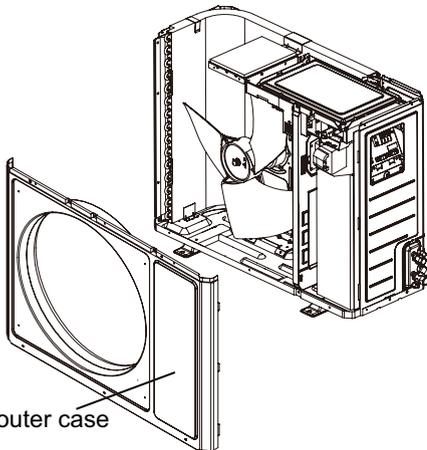
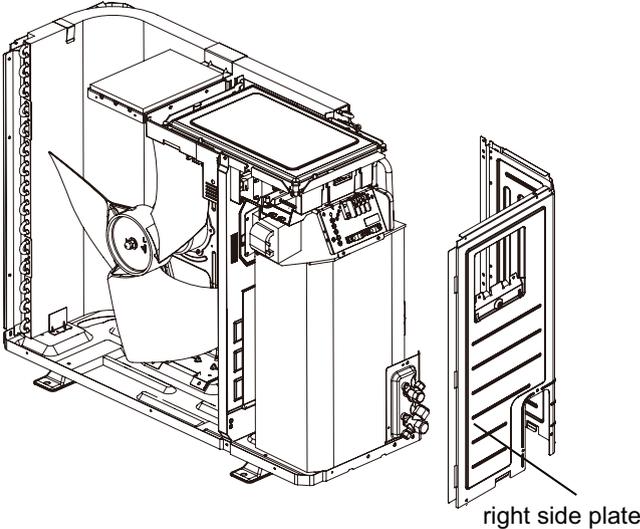
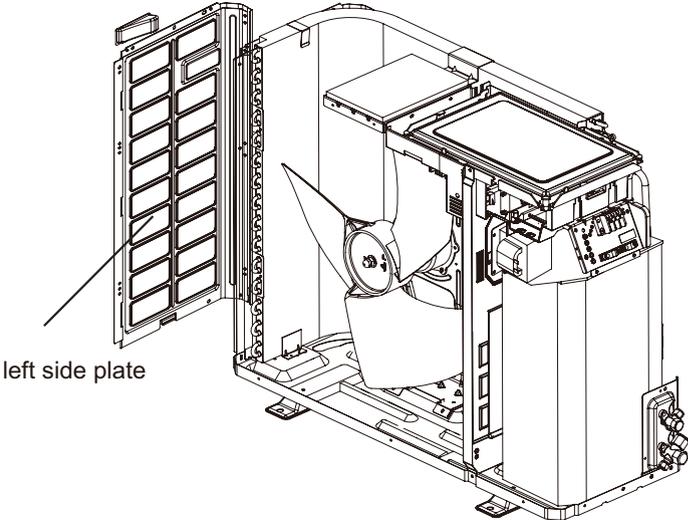
Steps	Procedure
<p><b>6.Remove electric box assy</b></p>	<p>Remove the 2 screws fixing the cover of electric box. Lift to remove the cover. Loosen the wire and disconnect the terminal. Lift to remove the electric box assy.</p> 
<p><b>7.Remove 4-way valve assy</b></p>	<p>Unscrew the fastening nut of the 4-way Valve Assy coil and remove the coil. Wrap the 4-way Valve Assy with wet cotton and unsolder the 4 weld spots connecting the 4-way Valve Assy to take it out.(Note: Refrigerant should be discharged firstly.) Welding process should be as quickly as possible and keep wrapping cotton wet all the time. Be sure not to burn out the lead-out wire of compressor.</p> 
<p><b>8.Remove capillary sub-assy</b></p>	<p>Unsolder weld point of capillary Sub-assy, valve and outlet pipe of condensator. Then remove the capillary Sub-assy. Do not block the capillary when unsoldering it. (Note: before unsoldering, discharge refrigerants completely)</p> 



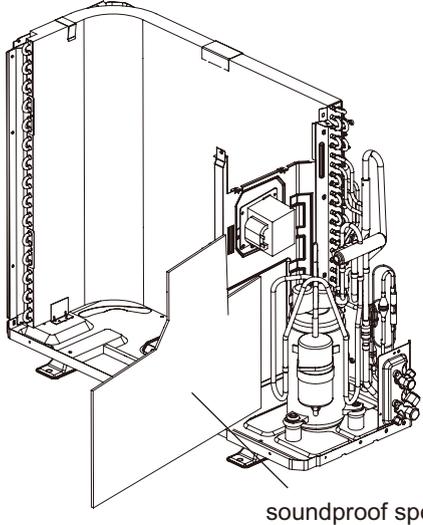
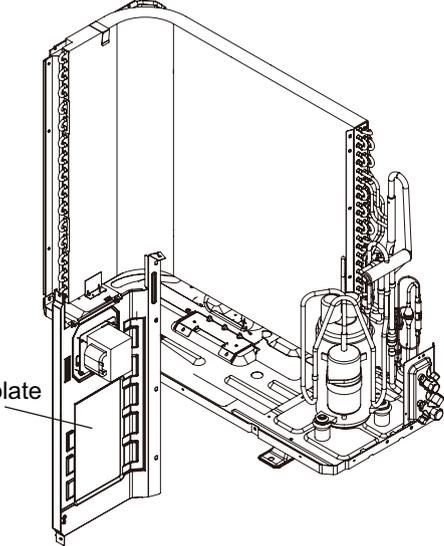
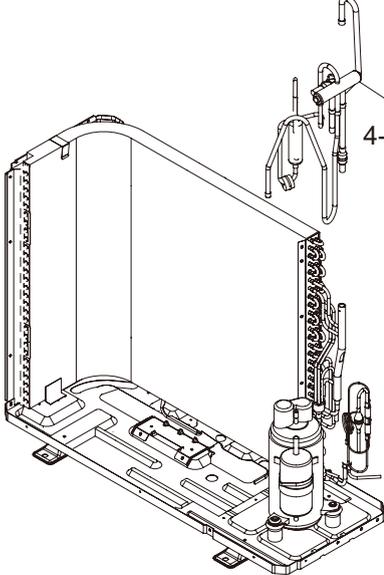
Steps	Procedure
<b>11.Remove Compressor</b>	
a	<p>Remove the 2 screws fixing the gas valve. Unsolder the welding spot connecting gas valve and air return pipe and remove the gas valve. (Note: it is necessary to warp the gas valve when unsoldering the welding spot.) Remove the 2 screws fixing liquid valve. Unsolder the welding spot connecting liquid valve and remove the liquid valve.</p>
b	<p>Remove the 3 footing screws of the compressor and remove the compressor.</p>





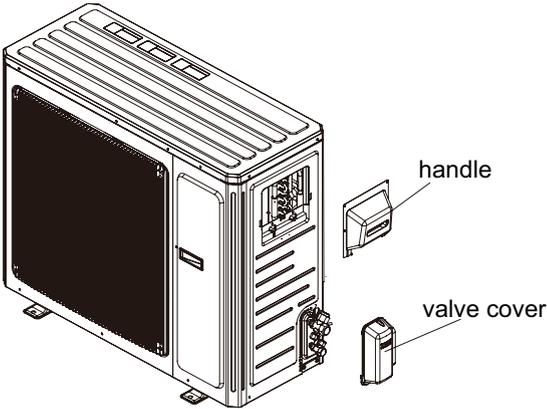
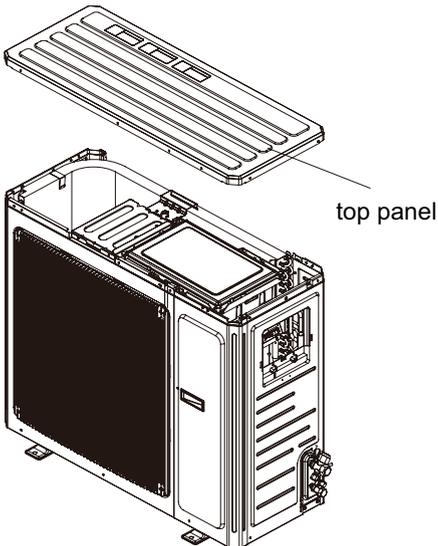
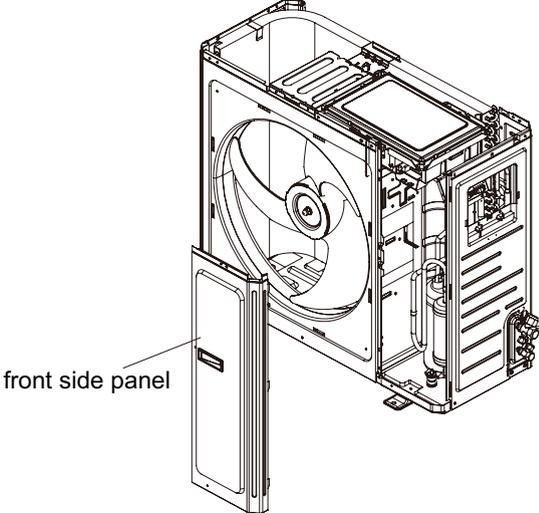
Steps	Procedure	
	<p>Remove the screws connecting the outer case with motor support, isolation plate and chassis; lift the outer case upwards; loosen the clasps of outer case with right side plate and left side plate, and then remove the outer case.</p>	 <p>outer case</p>
<p>3. Remove right&amp;left side plate</p>		
<p>a</p>	<p>Remove the screws connecting the right side plate with electric box assy, valve support, chassis and condenser side plate, and then remove the right side plate.</p>	 <p>right side plate</p>
<p>b</p>	<p>Remove the screws connecting the left side plate with chassis, and then remove the left side plate.</p>	 <p>left side plate</p>



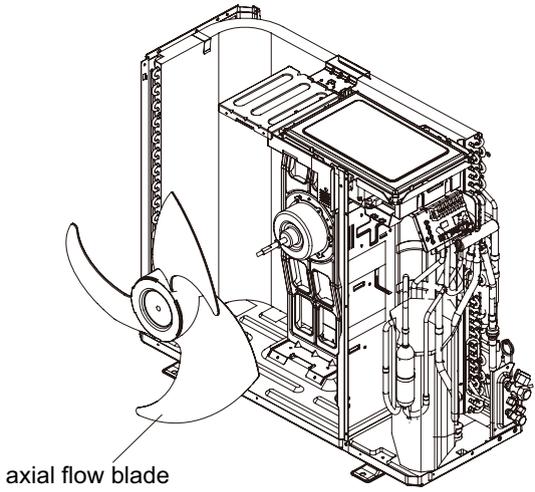
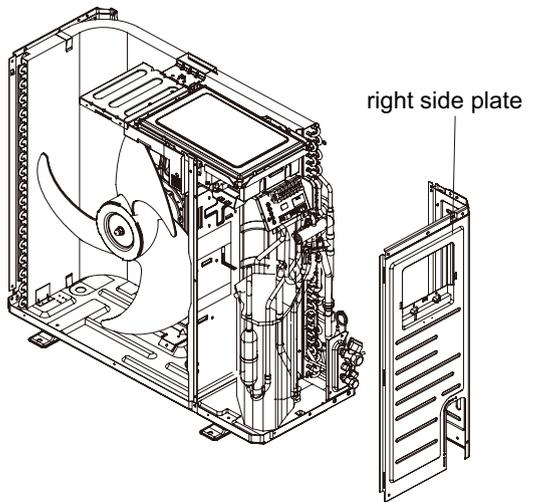
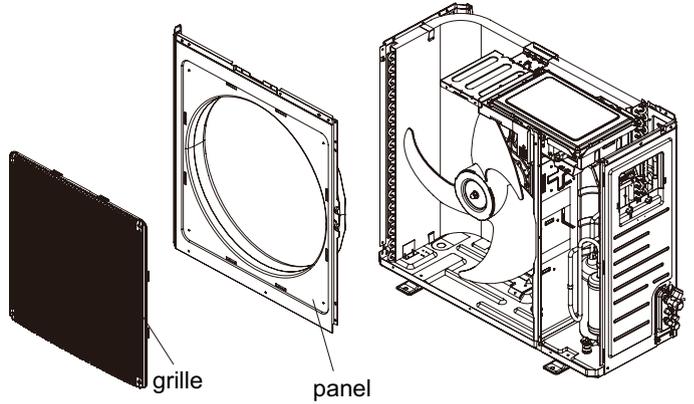
Steps	Procedure
6. Remove the soundproof sponge	<p data-bbox="196 366 708 423">Tear off the sticking stripe and then remove the soundproof sponge.</p>  <p data-bbox="1214 733 1430 760">soundproof sponge</p>
7. Remove isolation plate	<p data-bbox="196 1033 760 1153">Remove the 2 screws connecting the isolation plate and condenser side plate; remove the 3 screws connecting the isolation plate and chassis, and then remove the isolation plate.</p>  <p data-bbox="846 1225 997 1251">isolation plate</p>
8. Remove 4-way valve assy	<p data-bbox="196 1541 753 1633">Unsolder the welding joints connecting the 4-way valve assy with capillary sub-assy, compressor and condenser; remove the 4-way valve.</p> <p data-bbox="196 1640 769 1760"><b>Note:</b> Before unsoldering the welding joint, wrap the 4-way valve with a wet cloth completely to avoid damage to the valve caused by high temperature.</p>  <p data-bbox="1317 1541 1523 1568">4-way valve assy</p>

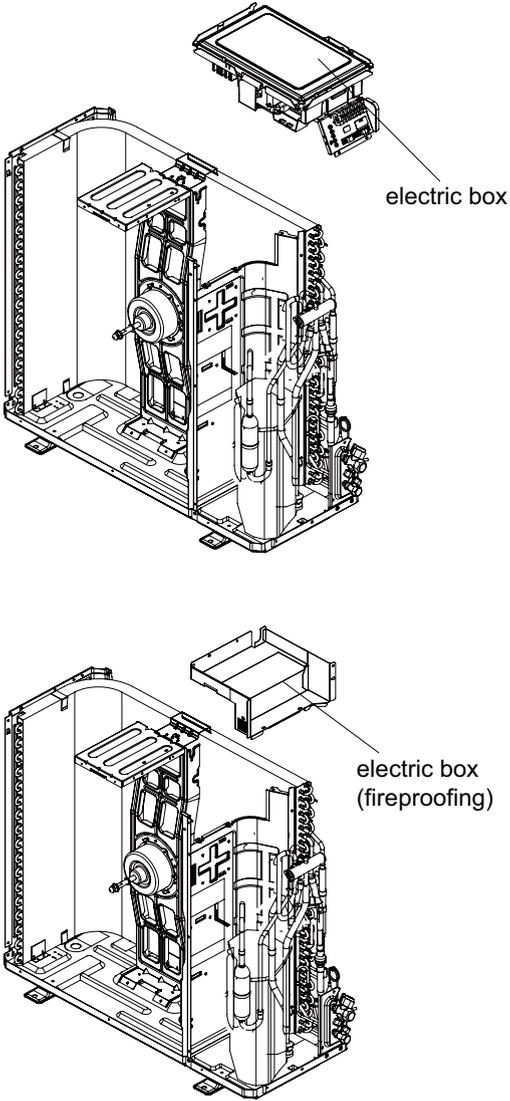
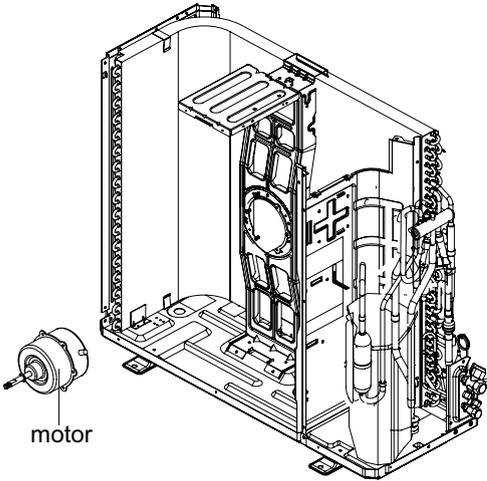


TW24HQ2C2DO

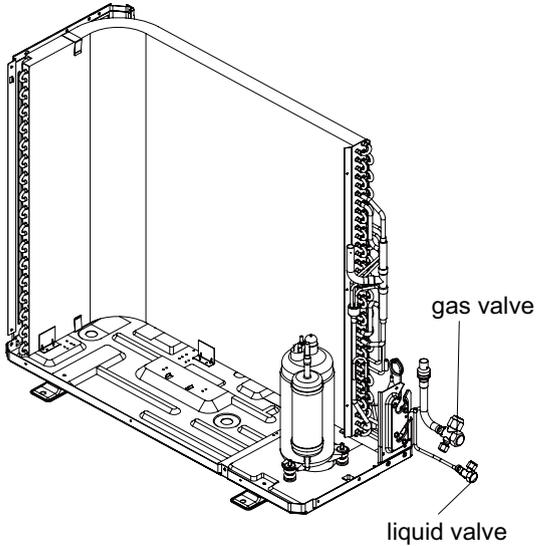
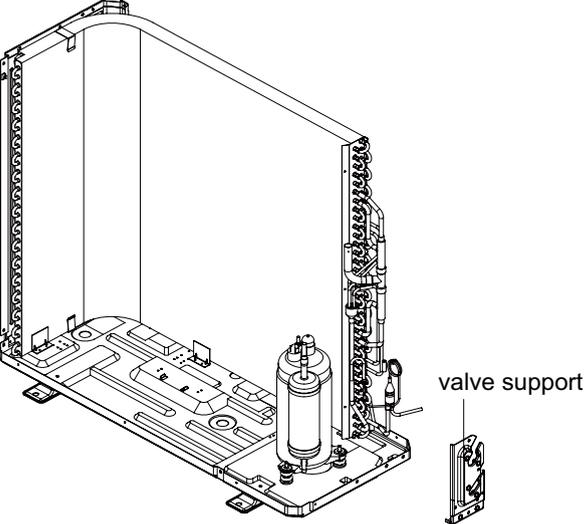
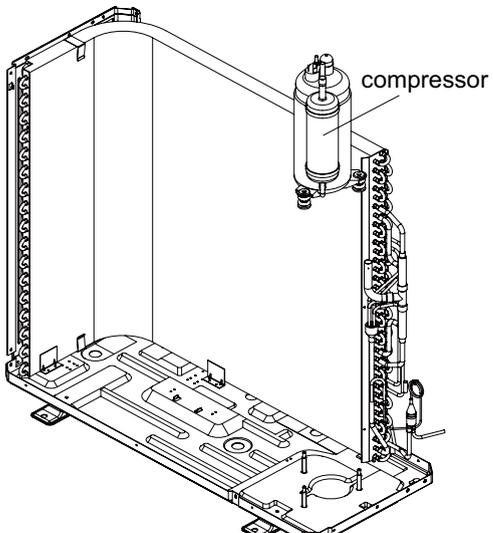
Steps	Procedure	
1. Remove big handle, valve cover and top cover	<p>Remove the screw connecting the big handle and right side plate, and then remove the big handle. Remove the screw connecting the valve cover and right side plate, and then remove the valve cover.</p>	 <p>The diagram shows a three-quarter view of the unit. A callout labeled 'handle' points to a small rectangular component being removed from the right side. Another callout labeled 'valve cover' points to a small rectangular component being removed from the bottom right side.</p>
2. Remove top panel	<p>Remove the screws connecting the top panel with the front panel and left&amp;right side plate, and then remove the top panel.</p>	 <p>The diagram shows the top panel being lifted away from the unit. A callout labeled 'top panel' points to the rectangular panel being removed.</p>
3. Remove front side panel	<p>Loosen the screws connecting the front side panel and chassis. Remove the front side panel.</p>	 <p>The diagram shows the front side panel being swung open to the left. A callout labeled 'front side panel' points to the panel being removed.</p>

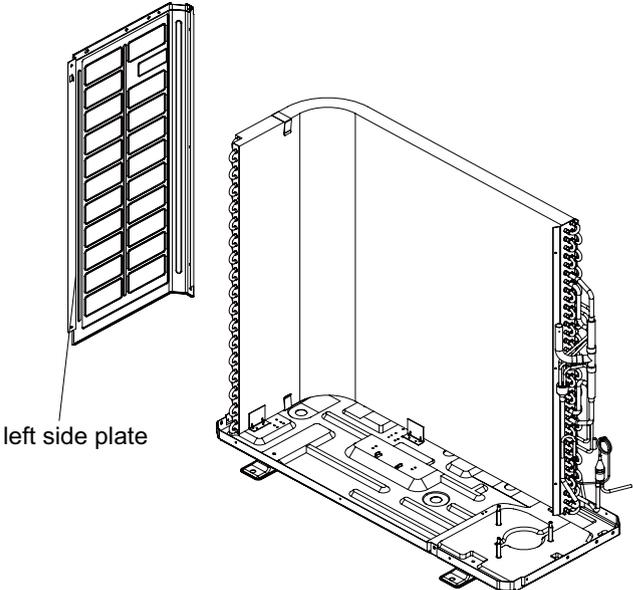
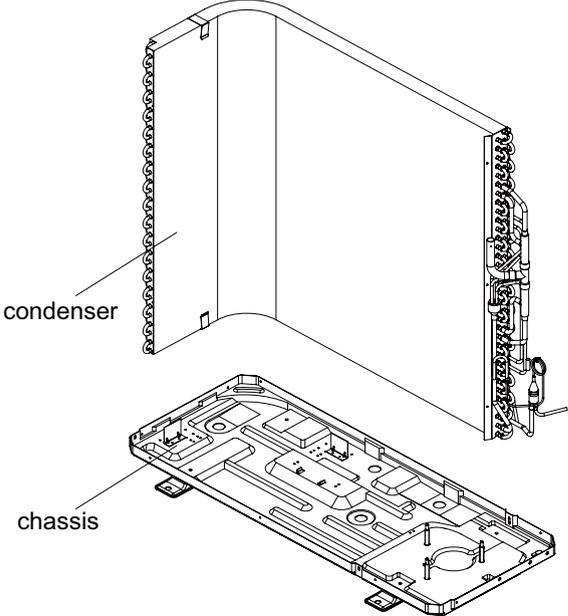
Steps	Procedure
4.Remove grille and panel	
<p>a</p> <p>b</p>	<p>Twist off the screws connecting the grille and panel, and then remove the grille.</p> <p>Twist off the screws connecting the panel, chassis and motor support with screwdriver, and then remove the panel.</p>
5.Remove right side plate	
	<p>Twist off the screws connecting the right side plate and chassis, valve support and condenser, and then remove the right side plate.</p>
6.Remove axial flow blade	
	<p>Twist off the nuts on blade with wrench and then remove the axial flow blade.</p>



Steps	Procedure
<p>7.Remove electric box</p> <p>a</p> <p>b</p>	<p>Twist off the screws on electric box, cut off the tieline with scissors or pliers, pull out the wiring terminal, pull it upwards to remove the electric box.</p> <p>Twist off the screws on electric box (fireproofing) with screwdriver, and then remove the electric box (fireproofing).</p>  <p>The diagram illustrates the removal of the electric box and fireproofing box. The top part shows the main chassis with the electric box being removed, labeled 'electric box'. The bottom part shows the chassis with the fireproofing box being removed, labeled 'electric box (fireproofing)'.</p>
<p>8.Remove motor</p>	<p>Twist off the tapping screws fixing the motor, pull out the pin of leading wire for motor and then remove the motor.</p>  <p>The diagram shows the motor being removed from the chassis. The motor is shown separately, labeled 'motor', with a line pointing to its location on the chassis.</p>



Steps	Procedure	
12.Remove gas valve and liquid valve	<p>Twist off the 2 bolts fixing the valve sub-assy. Unsolder the soldering joint between gas valve and air-return pipe and then remove the gas valve.(note: when unsoldering the soldering joint, wrap the gas valve with wet cloth completely to avoid the damage to valve, and release all refrigerant completely at first). Unsolder the soldering joint between liquid valve and connection pipe of liquid valve, and then remove the liquid valve.</p>	 <p>The diagram shows a perspective view of the unit's chassis with the gas valve and liquid valve assembly highlighted. Labels 'gas valve' and 'liquid valve' point to their respective components. The gas valve is a vertical cylindrical component, and the liquid valve is a smaller component connected to it.</p>
13.Remove valve support	<p>Twist off the screws connecting valve support and chassis, and then remove the valve support.</p>	 <p>The diagram shows the unit chassis with the valve support assembly highlighted. A label 'valve support' points to a small rectangular component that is being removed from the chassis. The gas valve and liquid valve are still present in the assembly.</p>
14.Remove compressor	<p>Twist off the 3 foot nuts on compressor and then remove the compressor.</p>	 <p>The diagram shows the unit chassis with the compressor assembly highlighted. A label 'compressor' points to a vertical cylindrical component mounted on the chassis. The gas valve and liquid valve are still present in the assembly.</p>

Steps	Procedure
<p>15.Remove left side plate</p>	<p>Twist off the screws connecting the left side plate and chassis with screwdriver, and then remove the left side plate.</p>  <p>left side plate</p>
<p>16.Remove chassis and condenser</p>	<p>Pull it upwards to separate the chassis and condenser.</p>  <p>condenser</p> <p>chassis</p>

## Appendix:

### Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree:  $T_f = T_c \times 1.8 + 32$

Set temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
61	60.8	16	69/70	69.8	21	78/79	78.8	26
62/63	62.6	17	71/72	71.6	22	80/81	80.6	27
64/65	64.4	18	73/74	73.4	23	82/83	82.4	28
66/67	66.2	19	75/76	75.2	24	84/85	84.2	29
68	68	20	77	77	25	86	86	30

Ambient temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius (°C)
32/33	32	0	55/56	55.4	13	79/80	78.8	26
34/35	33.8	1	57/58	57.2	14	81	80.6	27
36	35.6	2	59/60	59	15	82/83	82.4	28
37/38	37.4	3	61/62	60.8	16	84/85	84.2	29
39/40	39.2	4	63	62.6	17	86/87	86	30
41/42	41	5	64/65	64.4	18	88/89	87.8	31
43/44	42.8	6	66/67	66.2	19	90	89.6	32
45	44.6	7	68/69	68	20	91/92	91.4	33
46/47	46.4	8	70/71	69.8	21	93/94	93.2	34
48/49	48.2	9	72	71.6	22	95/96	95	35
50/51	50	10	73/74	73.4	23	97/98	96.8	36
52/53	51.8	11	75/76	75.2	24	99	98.6	37
54	53.6	12	77/78	77	25			

### Appendix 2: Configuration of Connection Pipe

- Standard length of connection pipe. (More details please refer to the specifications.)
- Min. length of connection pipe is 9.84ft.
- Max. length of connection pipe and max. high difference. (More details please refer to the specifications.)
- The additional refrigerant oil and refrigerant charging required after prolonging connection pipe
  - After the length of connection pipe is prolonged for 32.81ft at the basis of standard length, you should add 5ml of refrigerant oil for each additional 16.40ft of connection pipe.
    - The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):
    - Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See the following sheet.
    - Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

Additional refrigerant charging amount for R22, R407C, R410A and R134a			
Diameter of connection pipe		Outdoor unit throttle	
Liquid pipe(inch)	Gas pipe(inch)	Cooling only(oz/ft.)	Cooling and heating(oz/ft.)
Φ1/4	Φ3/8 or Φ1/2	0.2	0.2
Φ1/4 or Φ3/8	Φ5/8 or Φ3/4	0.2	0.2
Φ1/2	Φ3/4 or Φ7/8	0.3	1.3
Φ5/8	Φ1 or Φ1 1/4	0.7	1.3
Φ3/4	/	2.7	2.7
Φ7/8	/	3.8	3.8

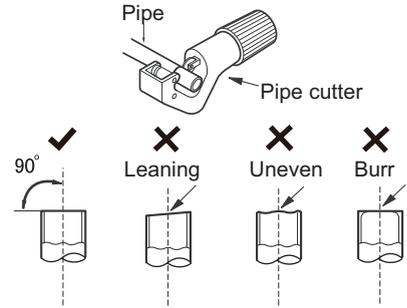
## Appendix 3: Pipe Expanding Method

**⚠ Note:**

**Improper pipe expanding is the main cause of refrigerant leakage. Please expand the pipe according to the following steps:**

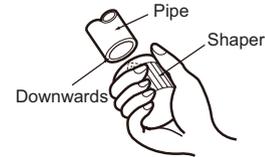
**A: Cut the pipe**

- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



**B: Remove the burrs**

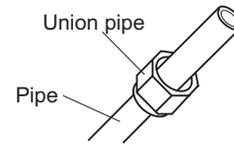
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



**C: Put on suitable insulating pipe**

**D: Put on the union nut**

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



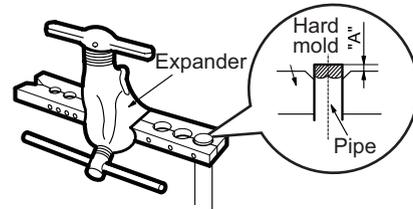
**E: Expand the port**

- Expand the port with expander.

**⚠ Note:**

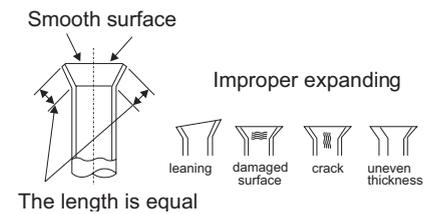
- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter(inch)	A(inch)	
	Max	Min
Φ0.24 - 0.25 (1/4")	0.05	0.03
Φ0.37 (3/8")	0.06	0.04
Φ0.47 - 0.50 (1/2")	0.07	0.04
Φ0.63 - 0.625 (5/8")	0.09	0.09



**F: Inspection**

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



## Appendix 4: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor(15K)

Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)
-2.2	138.1	68	18.75	138.2	3.848	208.4	1.071
-0.4	128.6	69.8	17.93	140	3.711	210.2	1.039
1.4	121.6	71.6	17.14	141.8	3.579	212	1.009
3.2	115	73.4	16.39	143.6	3.454	213.8	0.98
5	108.7	75.2	15.68	145.4	3.333	215.6	0.952
6.8	102.9	77	15	147.2	3.217	217.4	0.925
8.6	97.4	78.8	14.36	149	3.105	219.2	0.898
10.4	92.22	80.6	13.74	150.8	2.998	221	0.873
12.2	87.35	82.4	13.16	152.6	2.896	222.8	0.848
14	82.75	84.2	12.6	154.4	2.797	224.6	0.825
15.8	78.43	86	12.07	156.2	2.702	226.4	0.802
17.6	74.35	87.8	11.57	158	2.611	228.2	0.779
19.4	70.5	89.6	11.09	159.8	2.523	230	0.758
21.2	66.88	91.4	10.63	161.6	2.439	231.8	0.737
23	63.46	93.2	10.2	163.4	2.358	233.6	0.717
24.8	60.23	95	9.779	165.2	2.28	235.4	0.697
26.6	57.18	96.8	9.382	167	2.206	237.2	0.678
28.4	54.31	98.6	9.003	168.8	2.133	239	0.66
30.2	51.59	100.4	8.642	170.6	2.064	240.8	0.642
32	49.02	102.2	8.297	172.4	1.997	242.6	0.625
33.8	46.6	104	7.967	174.2	1.933	244.4	0.608
35.6	44.31	105.8	7.653	176	1.871	246.2	0.592
37.4	42.14	107.6	7.352	177.8	1.811	248	0.577
39.2	40.09	109.4	7.065	179.6	1.754	249.8	0.561
41	38.15	111.2	6.791	181.4	1.699	251.6	0.547
42.8	36.32	113	6.529	183.2	1.645	253.4	0.532
44.6	34.58	114.8	6.278	185	1.594	255.2	0.519
46.4	32.94	116.6	6.038	186.8	1.544	257	0.505
48.2	31.38	118.4	5.809	188.6	1.497	258.8	0.492
50	29.9	120.2	5.589	190.4	1.451	260.6	0.48
51.8	28.51	122	5.379	192.2	1.408	262.4	0.467
53.6	27.18	123.8	5.197	194	1.363	264.2	0.456
55.4	25.92	125.6	4.986	195.8	1.322	266	0.444
57.2	24.73	127.4	4.802	197.6	1.282	267.8	0.433
59	23.6	129.2	4.625	199.4	1.244	269.6	0.422
60.8	22.53	131	4.456	201.2	1.207	271.4	0.412
62.6	21.51	132.8	4.294	203	1.171	273.2	0.401
64.4	20.54	134.6	4.139	204.8	1.136	275	0.391
66.2	19.63	136.4	3.99	206.6	1.103	276.8	0.382

Resistance Table of Tube Temperature Sensors for Indoor and Outdoor (20K)

Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)
-2.2	181.4	68	25.01	138.2	5.13	208.4	1.427
-0.4	171.4	69.8	23.9	140	4.948	210.2	1.386
1.4	162.1	71.6	22.85	141.8	4.773	212	1.346
3.2	153.3	73.4	21.85	143.6	4.605	213.8	1.307
5	145	75.2	20.9	145.4	4.443	215.6	1.269
6.8	137.2	77	20	147.2	4.289	217.4	1.233
8.6	129.9	78.8	19.14	149	4.14	219.2	1.198
10.4	123	80.6	18.13	150.8	3.998	221	1.164
12.2	116.5	82.4	17.55	152.6	3.861	222.8	1.131
14	110.3	84.2	16.8	154.4	3.729	224.6	1.099
15.8	104.6	86	16.1	156.2	3.603	226.4	1.069
17.6	99.13	87.8	15.43	158	3.481	228.2	1.039
19.4	94	89.6	14.79	159.8	3.364	230	1.01
21.2	89.17	91.4	14.18	161.6	3.252	231.8	0.983
23	84.61	93.2	13.59	163.4	3.144	233.6	0.956
24.8	80.31	95	13.04	165.2	3.04	235.4	0.93
26.6	76.24	96.8	12.51	167	2.94	237.2	0.904
28.4	72.41	98.6	12	168.8	2.844	239	0.88
30.2	68.79	100.4	11.52	170.6	2.752	240.8	0.856
32	65.37	102.2	11.06	172.4	2.663	242.6	0.833
33.8	62.13	104	10.62	174.2	2.577	244.4	0.811
35.6	59.08	105.8	10.2	176	2.495	246.2	0.77
37.4	56.19	107.6	9.803	177.8	2.415	248	0.769
39.2	53.46	109.4	9.42	179.6	2.339	249.8	0.746
41	50.87	111.2	9.054	181.4	2.265	251.6	0.729
42.8	48.42	113	8.705	183.2	2.194	253.4	0.71
44.6	46.11	114.8	8.37	185	2.125	255.2	0.692
46.4	43.92	116.6	8.051	186.8	2.059	257	0.674
48.2	41.84	118.4	7.745	188.6	1.996	258.8	0.658
50	39.87	120.2	7.453	190.4	1.934	260.6	0.64
51.8	38.01	122	7.173	192.2	1.875	262.4	0.623
53.6	36.24	123.8	6.905	194	1.818	264.2	0.607
55.4	34.57	125.6	6.648	195.8	1.736	266	0.592
57.2	32.98	127.4	6.403	197.6	1.71	267.8	0.577
59	31.47	129.2	6.167	199.4	1.658	269.6	0.563
60.8	30.04	131	5.942	201.2	1.609	271.4	0.549
62.6	28.68	132.8	5.726	203	1.561	273.2	0.535
64.4	27.39	134.6	5.519	204.8	1.515	275	0.521
66.2	26.17	136.4	5.32	206.6	1.47	276.8	0.509

Resistance Table of Discharge Temperature Sensor for Outdoor(50K)

Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)	Temp.(°F)	Resistance(kΩ)
-20.2	853.5	50	98	120.2	18.34	190.4	4.754
-18.4	799.8	51.8	93.42	122	17.65	192.2	4.609
-16.6	750	53.6	89.07	123.8	16.99	194	4.469
-14.8	703.8	55.4	84.95	125.6	16.36	195.8	4.334
-13	660.8	57.2	81.05	127.4	15.75	197.6	4.204
-11.2	620.8	59	77.35	129.2	15.17	199.4	4.079
-9.4	580.6	60.8	73.83	131	14.62	201.2	3.958
-7.6	548.9	62.6	70.5	132.8	14.09	203	3.841
-5.8	516.6	64.4	67.34	134.6	13.58	204.8	3.728
-4	486.5	66.2	64.33	136.4	13.09	206.6	3.619
-2.2	458.3	68	61.48	138.2	12.62	208.4	3.514
-0.4	432	69.8	58.77	140	12.17	210.2	3.413
1.4	407.4	71.6	56.19	141.8	11.74	212	3.315
3.2	384.5	73.4	53.74	143.6	11.32	213.8	3.22
5	362.9	75.2	51.41	145.4	10.93	215.6	3.129
6.8	342.8	77	49.19	147.2	10.54	217.4	3.04
8.6	323.9	78.8	47.08	149	10.18	219.2	2.955
10.4	306.2	80.6	45.07	150.8	9.827	221	2.872
12.2	289.6	82.4	43.16	152.6	9.489	222.8	2.792
14	274	84.2	41.34	154.4	9.165	224.6	2.715
15.8	259.3	86	39.61	156.2	8.854	226.4	2.64
17.6	245.6	87.8	37.96	158	8.555	228.2	2.568
19.4	232.6	89.6	36.38	159.8	8.268	230	2.498
21.2	220.5	91.4	34.88	161.6	7.991	231.8	2.431
23	209	93.2	33.45	163.4	7.726	233.6	2.365
24.8	198.3	95	32.09	165.2	7.47	235.4	2.302
26.6	199.1	96.8	30.79	167	7.224	237.2	2.241
28.4	178.5	98.6	29.54	168.8	6.998	239	2.182
30.2	169.5	100.4	28.36	170.6	6.761	240.8	2.124
32	161	102.2	27.23	172.4	6.542	242.6	2.069
33.8	153	104	26.15	174.2	6.331	244.4	2.015
35.6	145.4	105.8	25.11	176	6.129	246.2	1.963
37.4	138.3	107.6	24.13	177.8	5.933	248	1.912
39.2	131.5	109.4	23.19	179.6	5.746	249.8	1.863
41	125.1	111.2	22.29	181.4	5.565	251.6	1.816
42.8	119.1	113	21.43	183.2	5.39	253.4	1.77
44.6	113.4	114.8	20.6	185	5.222	255.2	1.725
46.4	108	116.6	19.81	186.8	5.06	257	1.682
48.2	102.8	118.4	19.06	188.6	4.904	258.8	1.64



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