Service Manual

EDS Series

Indoor Units	Outdoor Units
EDS25	GCN9
EDS35	GCN12
EDS52	ONG3-18
EDS73	GCZ22
EDS100	GC10-34
EDS120	GC45
EDS25X2	GC9+9
EDS35X2	GC12+12
EDS52X2	GC17+17
EDS25X2+EDS35	GC9+9+12
EDS25X2+EDS52	GC9+9+17
EDS25+EDS35+EDS52	GC9+12+17
EDS35X3	GC12+12+12

REFRIGERANT	COOLING ONLY COOLING ONLY WITH HEATER HEAT PUMP HEAT PUMP WITH HEATER
R22	

REV: 0	FEB 2009

LIST OF EFFECTIVE PAGES

Note: Changes in the pages are indicated by a “Revision#” in the footer of each effected page (when none indicates no changes in the relevant page). All pages in the following list represent effected/ non effected pages divided by chapters.

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*Due to constant improvements please note that the data on this service manual can be modified with out notice.
**Photos are not contractual

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1. INTRODUCTION

1.1 General

The new EDS ductable pressurized system basic on comapct indoor and outdoor unit, it range comprise the A (cooling only) ,B(cooling only with supplementart heater) ,H (heat pump) ,D(heat pump with supplementare heater),Dual and Trio, models as follows:

- **Cooling Only:**
  EDS25A/GCN9 R22 ST; EDS35A/GCN12 R22 ST;EDS52A/ONG3-17 R22 ST;
  EDS73A/GCZ R22 ST; EDS100A/GC10-34 R22 ST;EDS120A/GC45 R22 ST;
- **Cooling Only with supplementary heater:**
  EDS25A/GCN9 R22 ST; EDS35A/GCN12 R22 ST;EDS52A/ONG3-17 R22 ST;
  EDS73A/GCZ R22 ST; EDS100A/GC10-34 R22 ST;EDS120A/GC45 R22 ST;
- **Heat pump:**
  EDS25H/GCN9 R22 RC; EDS35H/GCN12 R22 RC;EDS52H/ONG3-17 R22 RC;
  EDS73H/GCZ R22 RC; EDS100H/GC10-34 R22 RC;EDS120H/GC45 R22 RC;
- **Heat pump with supplementary heater:**
  EDS25D/GCN9 R22 RC; EDS35D/GCN12 R22 RC;EDS52D/ONG3-17 R22 RC;
  EDS73D/GCZ R22 RC; EDS100D/GC10-34 R22 RC;EDS120D/GC45 R22 RC;
- **Dual:**
  EDS25x2 A(B,D,H)/GC9+9 ST(RC); EDS35x2 A(B,D,H)/GC12+12 ST(RC);
  EDS52x2 A(B,D,H)/GC17+17 ST(RC);
- **Trio:**
  EDS25x2+35A(B,D,H)/GC9+9+12 ST(RC);EDS25x2+52A(B,D,H)/GC9+9+17 ST(RC);
  EDS25+35+52A(B,D,H)/GC9+12+17 ST(RC);EDS35x3A(B,D,H)/GC12+12+12 ST(RC)

1.2 Main Features

The EDS series benefits from the most advanced technological innovations, namely:

- R22 models.
- Microprocessor control.
- Infrared remote control with liquid crystal display.
- Supports Indoor Air Quality features, such as –.
- Indoor large diameter cross flow fan, allowing low noise level operation.
- Bended indoor coil with treated aluminum fins and coating for improved efficiency.
- Easy access to the interconnecting tubing and wiring connections, so that removing the front grill or casing is not necessary.
- Refrigerant pipes can be connected to the indoor unit from 5 different optional directions.
- Low indoor and outdoor noise levels.
- Easy installation and service.
- New package design for indoor unit, it should be based on open sleeve and open sides
- Installation manual to be printed on one page with back and front printing
- One RC simply manual printing on two side as the standard

1.3 Indoor Unit

The indoor unit is ductable pressurized split system, and can be easily fitted to many types of residential and commercials applications.

It includes:

- Casing with air inlet and outlet grills.
- A large-diameter tangential fan.
- Bended coil with treated aluminum fins.
- Motorized flaps
- Multi-speed motor with internal protection
- Advanced electronic control box assembly
- Interconnecting wiring terminal block
- Mounting plate

1.4 Filtration

The **EDS** series presents only one type of air filters:

- Easily accessible, and re-usable pre-filters (mesh)

1.5 Control

The microprocessor indoor controller, and wire controller with remote controller, supplied as standard, provide complete operating function and programming. For further details please refer to the Operation Manual, Appendix A.

1.6 Outdoor Unit

The **EDS** outdoor units can be installed as floor or wall mounted units by using a wall supporting bracket. The metal sheets are protected by anti- corrosion paint work allowing long life resistance. All outdoor units are pre-charged. For further information please refer to the Product Data Sheet, Chapter 2.

It includes :

- Compressor mounted in a soundproofed compartment :

Rotary –for GCN9 R22 ST(RC);GCN12 R22 ST(RC);ONG3-17 R22 ST(RC);GCZ22 R22 ST(RC);

Scroll –for GC10-34 R22 ST(RC);GC45 R22 ST(RC)

- Axial fan.
- Outdoor coil with hydrophilic louver fins for RC units.
- Outlet air fan grill.
- Interconnecting wiring terminal block.

1.7 Tubing Connections

Flare type interconnecting tubing to be produced on site.
For further details please refer to the Installation Manual, Outdoor Chapter 3.

1.8 Inbox Documentation

Each unit is supplied with its own installation and operation manuals, one simply remote control manual Matching Table

1.9 Matching Table

1.9.1 R22

Type	Outdoor unit	Indoor unit								
		Unit 1	Unit 2	Unit 3	EDS 25	EDS 35	EDS 52	EDS73	EDS100	EDS120
Single	GCN 9	EDS25			A/B					
	GCN 12	EDS35				A/C				
	ONG 3-18	EDS52					A/C			
	GCZ 22	EDS73						A/C		
	GC 10-34	EDS100							B/D	
	GC 45	EDS120								B/E
Dual	GC9+9	EDS25	EDS25		A/B					
	GC12+12	EDS35	EDS35			A/C				
	GC17+17	EDS52	EDS52				A/C			
Trio	GC9+9+12	EDS25	EDS25	EDS35	A/B	A/C				
	GC9+9+17	EDS25	EDS25	EDS52	A/B		A/C			
	GC9+12+17	EDS25	EDS35	EDS52	A/B	A/C	A/C			
	GC12+12+12	EDS35	EDS35	EDS35		A/C				

A-1/4'' B-3/8'' C-1/2'' D-5/8'' E-3/4'' Liquid / Suction

2. PRODUCT DATA SHEET

Model Indoor Unit				**EDS 25**		
Model Outdoor Unit				**GCN 9**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling only**	**Cooling**	**Heating**
Capacity (4)			Btu/hr	9380	9380	9550
			kW	2.75	2.75	2.80
Power input (4)			kW	0.932	0.932	0.80
EER (Cooling) or COP(Heating) (4)			W/W	2.95	2.95	3.50
Energy efficiency class				C	C	B
Power supply			V	220-240		
			Ph	1		
			Hz	50		
Rated current			A	4.3	4.3	3.7
Power factor				0.95	0.95	0.95
Prated (IDU)			W	80		
Prated (IDU+ODU)			W	1370		
Starting current			A	18.2		
Circuit breaker rating			A	10		
INDOOR	Fan type & quantity			DirectX1		
	Fan speeds	H/M/L	RPM	1210/1020/860		
	Air flow (1)	H/M/L	m3/hr	588/409/-		
	External static pressure	Min	Pa	30Pa		
	Sound power level (2)	H/M/L	dB(A)	59/54/50		
	Sound pressure level(3)	H/M/L	dB(A)	46/41/37		
	Moisture removal		l/hr	0.58		
	Condenstate drain tube I.D		mm	19.05		
	Dimensions	WxHxD	mm	690x250x611		
	Net Weight		kg	20		
	Package dimensions	WxHxD	mm	820x280x628		
	Packaged weight		kg	23		
	Units per pallet		units	10		
	Stacking height		units	5 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type,model			Rotary,Meizhi PH170G1C-4DZDE1		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H	RPM	750		
	Air flow	H	m3/hr	1370		
	Sound power level	H	dB(A)	60	61	
	Sound pressure level(3)	H	dB(A)	50.5	51.1	
	Dimensions	WxHxD	mm	760x545x245		
	Net Weight		kg	30	30.5	
	Package dimensions	WxHxD	mm	880x310x610		
	Packaged weight		kg	33	33.5	
	Units per pallet		Units	9		
	Stacking height		units	3 Levels		
	Refrigerant type			R22		
	Standard charge		kg(4m)	0.83		
	Additional charge			4m≤Lin≤10m:0g/m; 10m<Lin≤15m:+130g		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	3/8"(9.52)		
		Max.tubing length	m.	Max.15		
		Max.height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements (Option)			kW			
Others						

(1)Airflow in ducted units;at nominal external static pressure 30Pa.

(2)Sound power in ducted units is measured at air discharge.

(3)Sound pressure level measured at 1-meter distance from unit.

(4)Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).

(5)The declared value's tolerance is in accordance with EN14511.

Model Indoor Unit				**EDS 35**		
Model Outdoor Unit				**GCN12**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling only**	**Cooling**	**Heating**
Capacity (4)			Btu/hr	12620	12620	12110
			kW	3.70	3.70	3.55
Power input (4)			kW	1.175	1.175	0.98
EER (Cooling) or COP(Heating) (4)			W/W	3.15	3.15	3.62
Energy efficiency class				B	B	A
Power supply			V	220-240		
			Ph	1		
			Hz	50		
Rated current			A	5.4	5.4	4.5
Power factor				0.95	0.95	0.95
Prated (IDU)			W	90		
Prated (IDU+ODU)			W	1660		
Starting current			A	25		
Circuit breaker rating			A	15		
INDOOR	Fan type & quantity			DirectX1		
	Fan speeds	H/M/L	RPM	900/730/660		
	Air flow (1)	H/M/L	m3/hr	830/500/-		
	External static pressure	Min	Pa	30		
	Sound power level (2)	H/M/L	dB(A)	59/55/51		
	Sound pressure level(3)	H/M/L	dB(A)	46/42/38		
	Moisture removal		l/hr	0.6		
	Condenstate drain tube I.D		mm	19.05		
	Dimensions	WxHxD	mm	945x250x611		
	Net Weight		kg	27		
	Package dimensions	WxHxD	mm	1095x280x628		
	Packaged weight		kg	30		
	Units per pallet		units	5		
	Stacking height		units	5 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type,model			Rotary,Sanyo C-RV212HC2CB		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H	RPM	830		
	Air flow	H	m3/hr	1500		
	Sound power level	H	dB(A)	64	64.5	
	Sound pressure level(3)	H	dB(A)	55	56	
	Dimensions	WxHxD	mm	760x545x245		
	Net Weight		kg	33	33.5	
	Package dimensions	WxHxD	mm	880x310x610		
	Packaged weight		kg	35.5	36	
	Units per pallet		Units	9		
	Stacking height		units	3 Levels		
	Refrigerant type			R22		
	Standard charge		kg(4m)	0.99		
	Additional charge			4m≤Lin≤10m:0g/m; 10m<Lin≤15m:+170g		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	1/2"(12.7)		
		Max.tubing length	m.	Max.15		
		Max.height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements (Option)			kW			
Others						

(1)Airflow in ducted units;at nominal external static pressure 30Pa.

(2)Sound power in ducted units is measured at air discharge.

(3)Sound pressure level measured at 1-meter distance from unit.

(4)Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).

(5)The declared value's tolerance is in accordance with EN14511.

Model Indoor Unit				**EDS 52**		
Model Outdoor Unit				**ONG3-17**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling only**	**Cooling**	**Heating**
Capacity (4)			Btu/hr	19790	19790	18940
			kW	5.80	5.80	5.55
Power input (4)			kW	1.92	1.92	1.61
EER (Cooling) or COP(Heating) (4)			W/W	3.02	3.02	3.45
Energy efficiency class				B	B	B
Power supply			V	220-240		
			Ph	1		
			Hz	50		
Rated current			A	8.8	8.8	7.4
Power factor				0.95	0.95	0.95
Prated (IDU)			W	154		
Prated (IDU+ODU)			W	2460		
Starting current			A	46.8		
Circuit breaker rating			A	15		
INDOOR	Fan type & quantity			DirectX1		
	Fan speeds	H/M/L	RPM	1210/1038/986		
	Air flow (1)	H/M/L	m3/hr	1100/805/706		
	External static pressure	Min	Pa	30		
	Sound power level (2)	H/M/L	dB(A)	64/60/58		
	Sound pressure level(3)	H/M/L	dB(A)	51/47/45		
	Moisture removal		l/hr	1.32		
	Condenstate drain tube I.D		mm	19.05		
	Dimensions	WxHxD	mm	1080X611X250		
	Net Weight		kg	29		
	Package dimensions	WxHxD	mm	1165X628X280		
	Packaged weight		kg	33		
	Units per pallet		units	5		
	Stacking height		units	5 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type,model			Rotary,Panasonic 2V34S225BUC		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H	RPM	920		
	Air flow	H	m3/hr	2160		
	Sound power level	H	dB(A)	65	65	
	Sound pressure level(3)	H	dB(A)	54	55	
	Dimensions	WxHxD	mm	795x610x290		
	Net Weight		kg	43	44	
	Package dimensions	WxHxD	mm	970x650x394		
	Packaged weight		kg	46	47	
	Units per pallet		Units	9		
	Stacking height		units	3 Levels		
	Refrigerant type			R22		
	Standard charge		kg(7.5m)	1.45		
	Additional charge			4m≤Lin≤10m:0g; 10m<Lin≤15m:+100g		
	Connections between units	Liquid line	In.(mm)	1/4"(6.35)		
		Suction line	In.(mm)	1/2"(12.7)		
		Max.tubing length	m.	Max.15		
		Max.height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements (Option)			kW			
Others						

(1)Airflow in ducted units;at nominal external static pressure 30Pa.

(2)Sound power in ducted units is measured at air discharge.

(3)Sound pressure level measured at 1-meter distance from unit.

(4)Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).

(5)The declared value's tolerance is in accordance with EN14511.

Model Indoor Unit				**EDS 73**		
Model Outdoor Unit				**GC-22**		
Installation Method of Pipe				Flared		
Characteristics			**Units**	**Cooling only**	**Cooling**	**Heating**
Capacity (4)			Btu/hr	23710	23710	25250
			kW	6.95	6.95	7.40
Power input (4)			kW	2.31	2.31	2.05
EER (Cooling) or COP(Heating) (4)			W/W	3.01	3.01	3.61
Energy efficiency class				B	B	A
Power supply			V	220-240		
			Ph	1		
			Hz	50		
Rated current			A	10.6	10.6	9.4
Power factor				0.95	0.95	0.95
Prated (IDU)			W	242		
Prated (IDU+ODU)			W	3250		
Starting current			A	52		
Circuit breaker rating			A	20		
INDOOR	Fan type & quantity			DirectX1		
	Fan speeds	H/M/L	RPM	1206/1079/967		
	Air flow (1)	H/M/L	m3/hr	1350/1134/909		
	External static pressure	Min	Pa	30		
	Sound power level (2)	H/M/L	dB(A)	64/61/59		
	Sound pressure level(3)	H/M/L	dB(A)	51/48/46		
	Moisture removal		l/hr	1.45		
	Condenstate drain tube I.D		mm	19.05		
	Dimensions	WxHxD	mm	1365X611X250		
	Net Weight		kg	35		
	Package dimensions	WxHxD	mm	1515X628X280		
	Packaged weight		kg	39		
	Units per pallet		units	5		
	Stacking height		units	5 levels		
OUTDOOR	Refrigerant control			Capillary tube		
	Compressor type,model			Rotary,Panasonic,2V40S225AUA		
	Fan type & quantity			Propeller(direct) x 1		
	Fan speeds	H	RPM	850		
	Air flow	H	m3/hr	2480		
	Sound power level	H	dB(A)	70		
	Sound pressure level(3)	H	dB(A)	59		
	Dimensions	WxHxD	mm	846x690x302		
	Net Weight		kg	53	55.5	
	Package dimensions	WxHxD	mm	990x770x430		
	Packaged weight		kg	56.5	59	
	Units per pallet		Units	6		
	Stacking height		units	2 levels		
	Refrigerant type			R22		
	Standard charge		kg(7.5m)	2.05		
	Additional charge			4m≤L≤10m:+0g 10m<L≤15m:+280g		
	Connections between units	Liquid line	In.(mm)	Φ9.53(3/8")		
		Suction line	In.(mm)	Φ15.88(5/8")		
		Max.tubing length	m.	Max.15		
		Max.height difference	m.	Max.7		
Operation control type				Remote control		
Heating elements (Option)			kW			
Others						

(1)Airflow in ducted units;at nominal external static pressure 30Pa.
(2)Sound power in ducted units is measured at air discharge.
(3)Sound pressure level measured at 1-meter distance from unit.
(4)Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).
(5)The declared value's tolerance is in accordance with EN14511.

Model Indoor Unit				**EDS 100**	
Model Outdoor Unit				**GC 10-34**	
Installation Method of Pipe				Flared	
Characteristics			**Units**	**Cooling**	**Heating**
Capacity (4)			Btu/hr	33440	37530
			kW	9.80	11.00
Power input (4)			kW	3.9	3.50
EER (Cooling) or COP(Heating) (4)			W/W	2.51	3.14
Energy efficiency class				5	N/A
Power supply			V	380-415	
			Ph	3	
			Hz	50	
Rated current			A	8.7	7.8
Power factor				0.85	0.85
Prated (IDU)			W	308	
Prated (IDU+ODU)			W	6500	
Starting current			A	45	
Circuit breaker rating			A	15	
INDOOR	Fan type & quantity			DirectX2	
	Fan speeds	H/M/L	RPM	1100/960/880	
	Air flow (1)	H/M/L	m3/hr	1750/1515/1193	
	External static pressure	Min	Pa	30	
	Sound power level (2)	H/M/L	dB(A)	62/59/57	
	Sound pressure level(3)	H/M/L	dB(A)	49/46/44	
	Moisture removal		l/hr	3.08	
	Condenstate drain tube I.D		mm	19.05	
	Dimensions	WxHxD	mm	1535x250x611	
	Net Weight		kg	43	
	Package dimensions	WxHxD	mm	1682x280x628	
	Packaged weight		kg	47	
	Units per pallet		units	5	
	Stacking height		units	5	
OUTDOOR	Refrigerant control			Capillary Tube	
	Compressor type,model			Srcoll C-SB303H8A	
	Fan type & quantity			Propeller (direct) * 2	
	Fan speeds	H	RPM	780	
	Air flow	H	m3/hr	4680	
	Sound power level	H	dB(A)	64	
	Sound pressure level(3)	H	dB(A)	56	
	Dimensions	WxHxD	mm	950X1270X340	
	Net Weight		kg	115	
	Package dimensions	WxHxD	mm	1108X1286X473	
	Packaged weight		kg	134	
	Units per pallet		Units	1	
	Stacking height		units	1	
	Refrigerant type			R22	
	Standard charge		kg(7.5m)	2.77	
	Additional charge			7.5m＜Lin ≤ 50m: +35g/m	
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)	
		Suction line	In.(mm)	3/4"(19.05)	
		Max.tubing length	m.	Max. 50m	
		Max.height difference	m.	Max. 10m	
Operation control type				Remote control	
Heating elements (Option)			kW		
Others					

(1)Airflow in ducted units;at nominal external static pressure 30Pa.
(2)Sound power in ducted units is measured at air discharge.
(3)Sound pressure level measured at 1-meter distance from unit.
(4)Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).
(5)The declared value's tolerance is in accordance with EN14511.

Model Indoor Unit				**EDS 120**	
Model Outdoor Unit				**GC 45**	
Installation Method of Pipe				Flared	
Characteristics			**Units**	**Cooling**	**Heating**
Capacity (4)			Btu/hr	43670	54590
			kW	12.80	16.00
Power input (4)			kW	4.56	4.98
EER (Cooling) or COP(Heating) (4)			W/W	2.81	3.21
Energy efficiency class				C	C
Power supply			V	380-415	
			Ph	3	
			Hz	50	
Rated current			A	9.2	8.7
Power factor				0.85	0.85
Prated (IDU)			W	308	
Prated (IDU+ODU)			W	5800	
Starting current			A	65.8	
Circuit breaker rating			A	15	
INDOOR	Fan type & quantity			DirectX2	
	Fan speeds	H/M/L	RPM	1257/1056/1021	
	Air flow (1)	H/M/L	m3/hr	2000/1692/1452	
	External static pressure	Min	Pa	0	
	Sound power level (2)	H/M/L	dB(A)	64/61/59	
	Sound pressure level(3)	H/M/L	dB(A)	51/48/46	
	Moisture removal		l/hr	3.7	
	Condenstate drain tube I.D		mm	19.05	
	Dimensions	WxHxD	mm	1785X611X250	
	Net Weight		kg	50	
	Package dimensions	WxHxD	mm	1935X628X280	
	Packaged weight		kg	55	
	Units per pallet		units	5	
	Stacking height		units	5	
OUTDOOR	Refrigerant control			Capillary Tube	
	Compressor type,model			Srcoll JT160BCBY1L	
	Fan type & quantity			Propeller (direct) * 2	
	Fan speeds	H	RPM	780	
	Air flow	H	m3/hr	4680	
	Sound power level	H	dB(A)	64	
	Sound pressure level(3)	H	dB(A)	56	
	Dimensions	WxHxD	mm	950X1270X340	
	Net Weight		kg	120	
	Package dimensions	WxHxD	mm	1108X1286X473	
	Packaged weight		kg	139	
	Units per pallet		Units	1	
	Stacking height		units	1	
	Refrigerant type			R22	
	Standard charge		kg(7.5m)	3.97	
	Additional charge			7.5m＜Lin ≤ 50m: +35g/m	
	Connections between units	Liquid line	In.(mm)	3/8"(9.53)	
		Suction line	In.(mm)	3/4"(19.05)	
		Max.tubing length	m.	Max. 50m	
		Max.height difference	m.	Max. 10m	
Operation control type				Remote control	
Heating elements (Option)			kW		
Others					

(1)Airflow in ducted units;at nominal external static pressure 30Pa.
(2)Sound power in ducted units is measured at air discharge.
(3)Sound pressure level measured at 1-meter distance from unit.
(4)Rating conditions in accordance to ISO 5151 and ISO 13253 (for ducted units).
(5)The declared value's tolerance is in accordance with EN14511.

(5)The declared value's tolerance is in accordance with EN14511.

3. RATING CONDITIONS

Standard conditions in accordance with ISO 5151, ISO 13253 (for ducted units) and EN 14511.

Cooling:
Indoor: 27°C DB 19°C WB
Outdoor: 35 °C DB

Heating:
Indoor: 20°C DB
Outdoor: 7°C DB 6°C WB

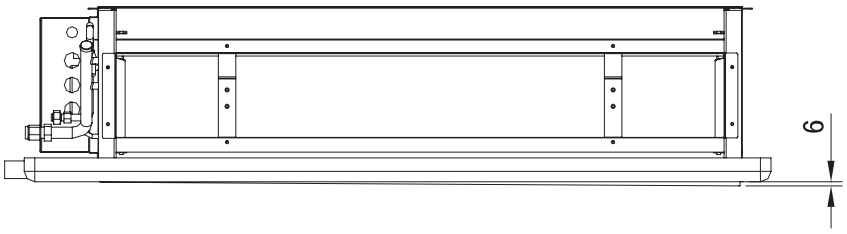
3.1 Operating Limits

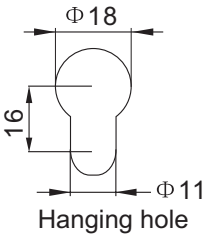
3.1.1 R22

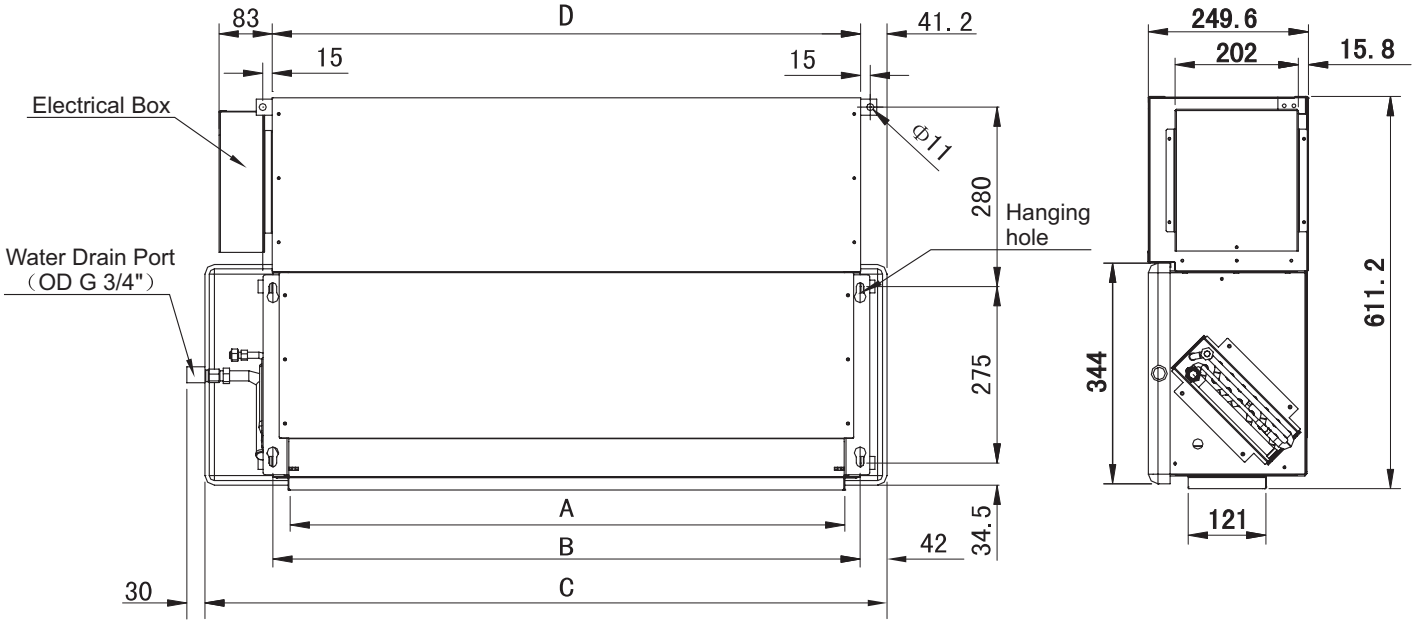
		Indoor	Outdoor
Cooling	Upper limit	32°C DB 23°C WB	46°C DB
	Lower limit	21°C DB 15°C WB	10°C DB
Heating	Upper limit	27°C DB	24°C DB 18°C WB
	Lower limit	10°C DB	-5°C DB -6 °C WB
Voltage		198 – 264 V	

4. OUTLINE DIMENSIONS

4.1 MODEL： EDS 25 EDS 73
EDS 35 EDS 100
EDS 52 EDS 120



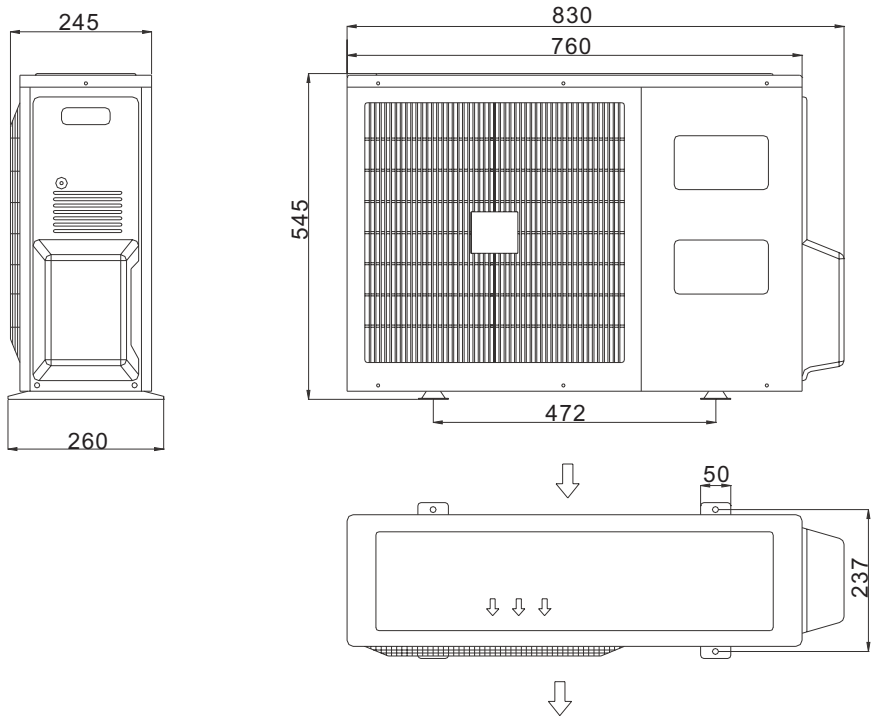




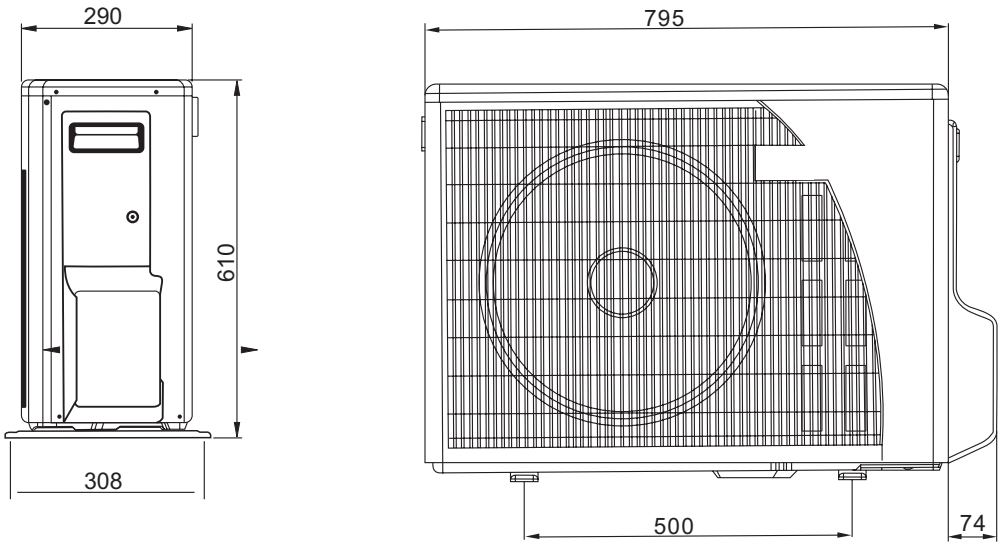
	Dimensions(mm)				Quantity	
Model	A	B	C	D	Fan	Moter
EDS25	480	530	665	533	1	1
EDS35	730	780	915	783	2	1
EDS52	865	915	1050	918	2	1
EDS73	1150	1200	1335	1203	2	1
EDS100	1320	1370	1505	1373	3	2
EDS120	1570	1620	1755	1623	4	2

Unit:mm

OUTDOOR MODEL: GCN 9
GCN 12

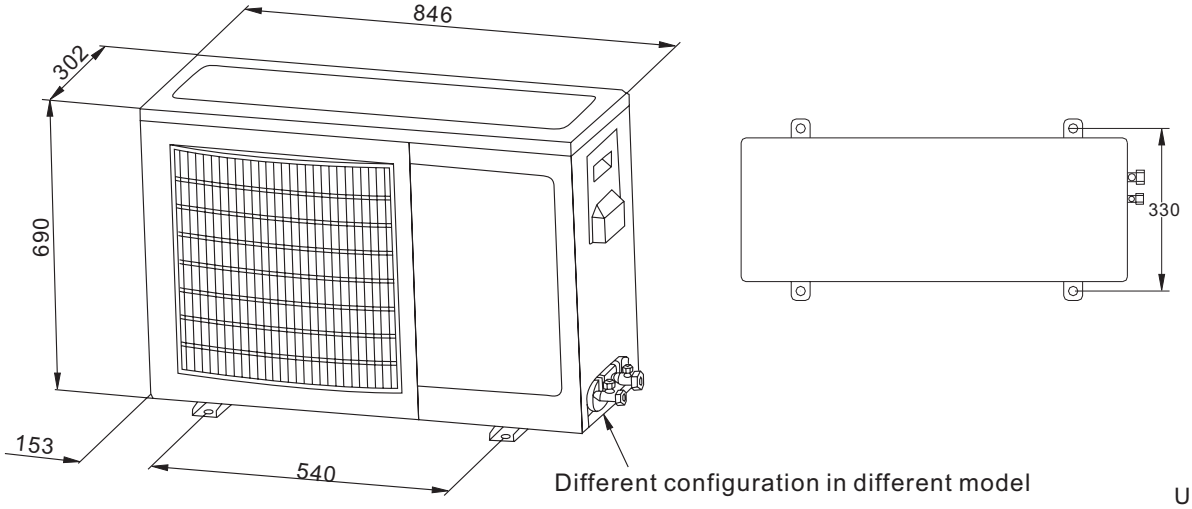


OUTDOOR MODEL: ONG3-17



Unit: mm

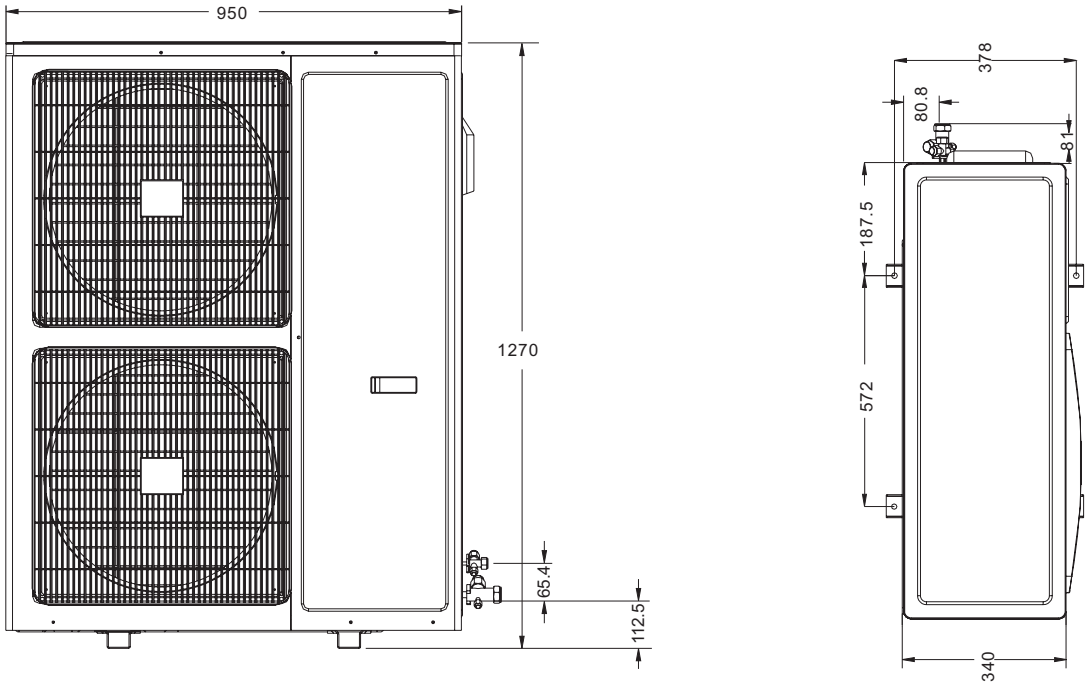
OUTDOOR MODEL: GC 22 GC 9+9
GC 12+12



Different configuration in different model

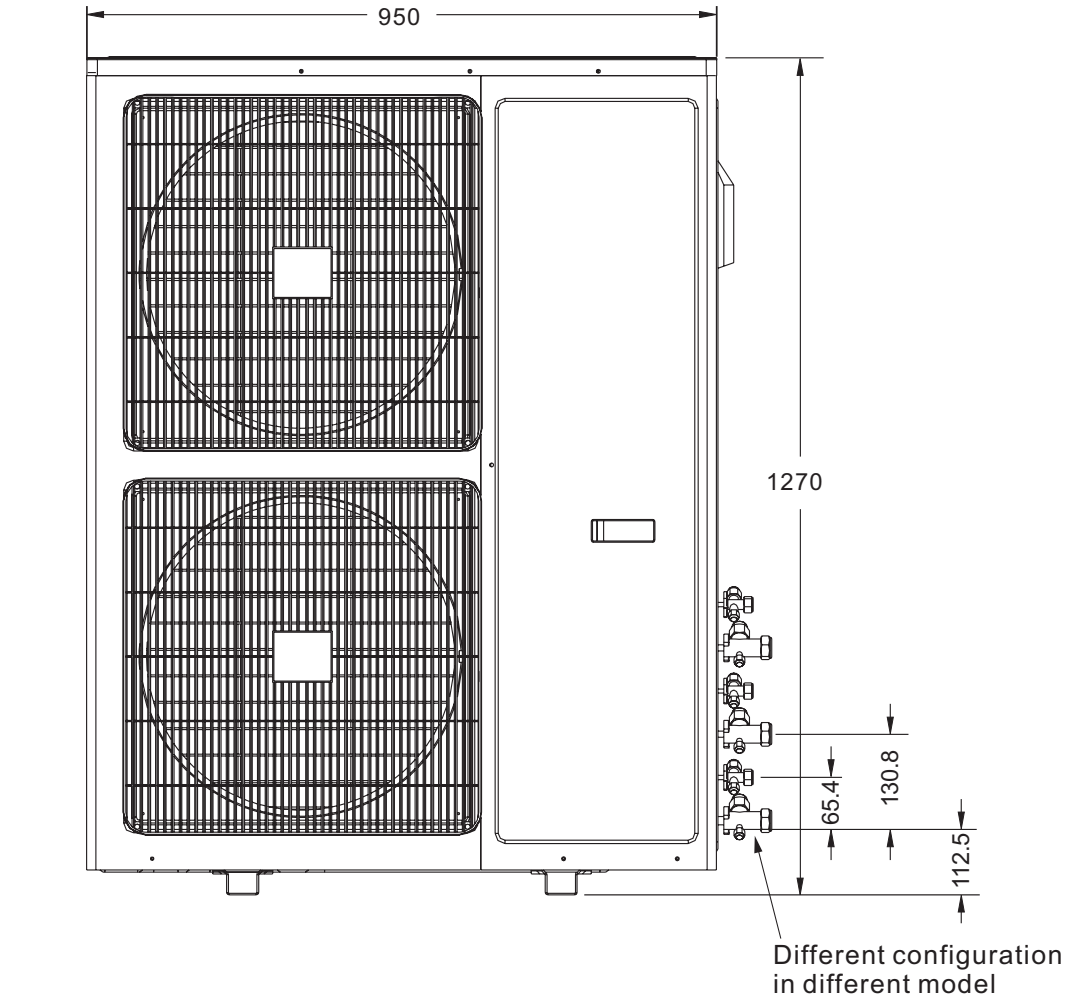
Unit: mm

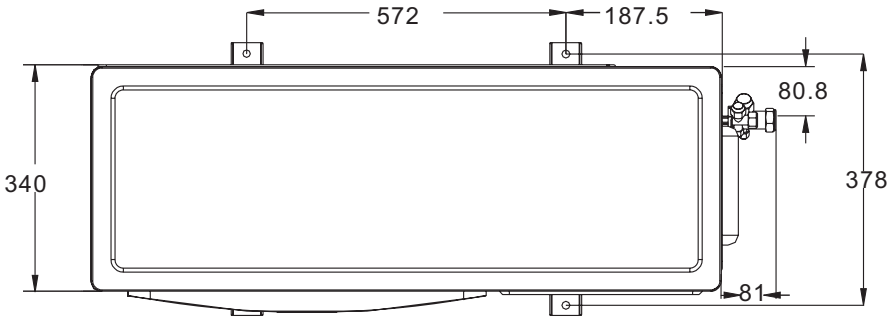
OUTDOOR MODEL: GC 10-34 GC45



Unit: mm

OUTDOOR MODEL: GC 17+17
GC 9+9+12
GC 9+9+17
GC 9+12+17
GC 12+12+12





Unit: mm

Cooling Capacity(KW)

EDS25H / GCN9 R22

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	2.72	2.88	3.02	3.15	3.26
	SC	2.19	2.33	2.45	2.40	2.44
	PI	0.70	0.70	0.70	0.70	0.70
20	TC	2.70	2.86	2.99	3.12	3.23
	SC	1.92	2.04	2.16	2.10	2.14
	PI	0.75	0.76	0.76	0.76	0.77
25	TC	2.59	2.78	2.94	3.07	3.18
	SC	2.13	2.29	2.42	2.37	2.43
	PI	0.81	0.82	0.83	0.83	0.83
30	TC	2.43	2.62	2.83	2.94	3.04
	SC	2.03	2.19	2.36	2.32	2.41
	PI	0.88	0.89	0.90	0.91	0.91
35	TC	2.24	2.43	**2.67**	2.80	2.91
	SC	1.91	2.08	**2.27**	2.24	2.34
	PI	0.95	0.96	**0.98**	0.99	0.99
40	TC	2.03	2.22	2.46	2.59	2.70
	SC	1.77	1.95	2.15	2.11	2.22
	PI	1.02	1.04	1.06	1.07	1.08
46	TC	1.76	1.95	2.19	2.32	2.43
	SC	1.61	1.79	2.01	1.97	2.07
	PI	1.12	1.14	1.16	1.18	1.19

LEGEND
TC - Total Cooling Capacity,KW
SC - Sensible Capacity,KW
PI - Power Input
WB - Wet Bulb Temp(oC)
DB - Dry Bulb Temp(oC)
ID - Indoor
OU - Outdoor

Data Field

Filled the nominal data in the cells which font is RED

Heating Capacity (KW)

EDS25H / GCN9 R22

	ENTERING AIR DB ID COIL(°c)					
	15		20		25	
ENTERING WB OD COIL(°C)	TH	PI	TH	PI	TH	PI
-10	1.50	0.72	1.44	0.77	1.38	0.81
-7	1.61	0.74	1.55	0.78	1.50	0.82
-2	1.71	0.75	1.65	0.79	1.60	0.84
2	2.08	0.78	2.00	0.83	1.91	0.88
6	2.94	0.84	**2.85**	**0.90**	2.75	0.96
10	3.19	0.89	3.11	0.95	3.02	1.02
15	3.45	0.93	3.36	1.00	3.28	1.06
20	3.63	0.95	3.55	1.04	3.45	1.12

LEGEND

TH - Total Heating Capacity,KW

PI - Power Input

WB - Wet Bulb Temp(oC)

DB - Dry Bulb Temp(oC)

ID - Indoor

OU - Outdoor

Data Field

Filled the nominal data in the sheet which font is RED

Cooling Capacity(KW)

EDS35H / GCN12 R22

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	3.56	3.77	3.94	4.12	4.26
	SC	3.01	3.19	3.36	3.28	3.34
	PI	0.85	0.85	0.85	0.86	0.86
20	TC	3.52	3.73	3.91	4.08	4.22
	SC	2.51	2.67	2.82	2.74	2.80
	PI	0.92	0.93	0.93	0.94	0.94
25	TC	3.39	3.63	3.84	4.01	4.15
	SC	2.92	3.13	3.31	3.25	3.34
	PI	0.99	1.00	1.01	1.02	1.02
30	TC	3.18	3.42	3.70	3.84	3.98
	SC	2.78	3.00	3.24	3.17	3.30
	PI	1.08	1.09	1.10	1.11	1.11
35	TC	2.93	3.18	**3.49**	3.66	3.80
	SC	2.62	2.85	**3.11**	3.07	3.20
	PI	1.16	1.18	**1.20**	1.21	1.21
40	TC	2.65	2.90	3.21	3.39	3.52
	SC	2.43	2.67	2.94	2.90	3.04
	PI	1.25	1.27	1.29	1.31	1.32
46	TC	2.30	2.55	2.86	3.04	3.18
	SC	2.21	2.45	2.76	2.71	2.83
	PI	1.37	1.40	1.42	1.44	1.45

LEGEND
TC - Total Cooling Capacity,KW
SC - Sensible Capacity,KW
PI - Power Input
WB - Wet Bulb Temp(oC)
DB - Dry Bulb Temp(oC)
ID - Indoor
OU - Outdoor

Data Field

Filled the nominal data in the cells which font is RED

Heating Capacity (KW)

EDS35H / GCN12 R22

	ENTERING AIR DB ID COIL(°c)					
	15		20		25	
ENTERING WB OD COIL(°C)	TH	PI	TH	PI	TH	PI
-10	1.81	0.81	1.74	0.86	1.67	0.90
-7	1.95	0.83	1.88	0.87	1.81	0.92
-2	2.07	0.84	2.00	0.89	1.93	0.94
2	2.52	0.88	2.42	0.93	2.31	0.99
6	3.55	0.94	**3.45**	**1.01**	3.33	1.07
10	3.86	1.00	3.76	1.07	3.66	1.14
15	4.17	1.04	4.07	1.12	3.97	1.19
20	4.40	1.07	4.30	1.16	4.17	1.25

LEGEND

TH - Total Heating Capacity,KW

PI - Power Input

WB - Wet Bulb Temp(oC)

DB - Dry Bulb Temp(oC)

ID - Indoor

OU - Outdoor

Data Field

Filled the nominal data in the sheet which font is RED

Cooling Capacity(KW)

EDS52H /ONG3-17 R22

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	5.77	6.11	6.40	6.68	6.91
	SC	4.56	4.84	5.10	4.98	5.07
	PI	1.46	1.46	1.46	1.47	1.47
20	TC	5.72	6.06	6.34	6.62	6.85
	SC	4.08	4.33	4.58	4.44	4.54
	PI	1.57	1.58	1.59	1.60	1.60
25	TC	5.49	5.89	6.23	6.51	6.74
	SC	4.44	4.75	5.03	4.94	5.06
	PI	1.70	1.71	1.73	1.74	1.74
30	TC	5.15	5.55	6.00	6.23	6.45
	SC	4.21	4.55	4.92	4.82	5.01
	PI	1.84	1.86	1.88	1.90	1.90
35	TC	4.75	5.15	**5.66**	5.94	6.17
	SC	3.97	4.32	**4.72**	4.66	4.86
	PI	1.99	2.02	**2.05**	2.07	2.07
40	TC	4.30	4.70	5.21	5.49	5.72
	SC	3.69	4.06	4.46	4.40	4.61
	PI	2.14	2.17	2.21	2.23	2.25
46	TC	3.74	4.13	4.64	4.92	5.15
	SC	3.35	3.72	4.19	4.11	4.30
	PI	2.35	2.39	2.43	2.46	2.48

LEGEND
TC - Total Cooling Capacity,KW
SC - Sensible Capacity,KW
PI - Power Input
WB - Wet Bulb Temp(oC)
DB - Dry Bulb Temp(oC)
ID - Indoor
OU - Outdoor

Data Field

Filled the nominal data in the cells which font is RED

Heating Capacity (KW)

EDS52H /ONG3-17 R22

	ENTERING AIR DB ID COIL(°c)					
	15		20		25	
ENTERING WB OD COIL(°C)	TH	PI	TH	PI	TH	PI
-10	2.81	1.33	2.70	1.41	2.59	1.49
-7	3.02	1.36	2.92	1.44	2.81	1.51
-2	3.21	1.38	3.10	1.46	3.00	1.54
2	3.91	1.44	3.75	1.54	3.58	1.63
6	5.51	1.55	**5.35**	**1.66**	5.16	1.76
10	5.99	1.64	5.83	1.75	5.67	1.87
15	6.47	1.71	6.31	1.84	6.15	1.96
20	6.82	1.76	6.66	1.91	6.47	2.06

LEGEND

TH - Total Heating Capacity,KW

PI - Power Input

WB - Wet Bulb Temp(oC)

DB - Dry Bulb Temp(oC)

ID - Indoor

OU - Outdoor

Data Field

Filled the nominal data in the sheet which font is RED

Cooling Capacity(KW)

EDS73H /GCZ22 R22

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	6.57	6.96	7.28	7.60	7.86
	SC	5.34	5.66	5.96	5.83	5.93
	PI	1.70	1.71	1.71	1.72	1.72
20	TC	6.50	6.89	7.21	7.53	7.79
	SC	4.64	4.93	5.21	5.06	5.17
	PI	1.84	1.85	1.86	1.87	1.88
25	TC	6.25	6.70	7.08	7.41	7.66
	SC	5.19	5.56	5.88	5.77	5.92
	PI	1.99	2.00	2.02	2.04	2.04
30	TC	5.86	6.31	6.83	7.08	7.34
	SC	4.93	5.32	5.75	5.63	5.86
	PI	2.15	2.18	2.21	2.22	2.23
35	TC	5.41	5.86	**6.44**	6.76	7.02
	SC	4.64	5.05	**5.52**	5.46	5.68
	PI	2.33	2.36	**2.40**	2.42	2.43
40	TC	4.89	5.35	5.92	6.25	6.50
	SC	4.31	4.75	5.22	5.14	5.39
	PI	2.51	2.54	2.59	2.62	2.64
46	TC	4.25	4.70	5.28	5.60	5.86
	SC	3.92	4.35	4.90	4.80	5.03
	PI	2.75	2.79	2.84	2.88	2.91

LEGEND
TC - Total Cooling Capacity,KW
SC - Sensible Capacity,KW
PI - Power Input
WB - Wet Bulb Temp(oC)
DB - Dry Bulb Temp(oC)
ID - Indoor
OU - Outdoor

Data Field

Filled the nominal data in the cells which font is RED

Heating Capacity (KW)

EDS73H /GCZ22 R22

	ENTERING AIR DB ID COIL(°c)					
	15		20		25	
ENTERING WB OD COIL(°C)	TH	PI	TH	PI	TH	PI
-10	3.61	1.69	3.47	1.80	3.34	1.89
-7	3.89	1.73	3.75	1.83	3.61	1.92
-2	4.13	1.75	3.99	1.86	3.85	1.96
2	5.02	1.84	4.82	1.95	4.61	2.07
6	7.09	1.97	**6.88**	**2.11**	6.64	2.24
10	7.71	2.08	7.50	2.23	7.29	2.38
15	8.32	2.17	8.12	2.34	7.91	2.49
20	8.77	2.24	8.57	2.43	8.32	2.62

LEGEND

TH - Total Heating Capacity,KW

PI - Power Input

WB - Wet Bulb Temp(oC)

DB - Dry Bulb Temp(oC)

ID - Indoor

OU - Outdoor

Data Field

Filled the nominal data in the sheet which font is RED

Cooling Capacity(KW)

EDS100H /GC10-34 R22

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	9.68	10.25	10.72	11.20	11.58
	SC	7.19	7.63	8.04	7.85	7.99
	PI	2.75	2.76	2.76	2.78	2.79
20	TC	9.58	10.15	10.63	11.10	11.48
	SC	6.83	7.26	7.67	7.45	7.61
	PI	2.98	2.99	3.01	3.03	3.03
25	TC	9.21	9.87	10.44	10.91	11.29
	SC	7.00	7.49	7.92	7.78	7.98
	PI	3.21	3.24	3.27	3.29	3.30
30	TC	8.64	9.30	10.06	10.44	10.82
	SC	6.64	7.17	7.75	7.59	7.90
	PI	3.48	3.52	3.57	3.59	3.60
35	TC	7.97	8.64	**9.49**	9.96	10.34
	SC	6.26	6.81	**7.44**	7.35	7.65
	PI	3.76	3.82	**3.88**	3.91	3.93
40	TC	7.21	7.88	8.73	9.21	9.58
	SC	5.81	6.40	7.04	6.93	7.26
	PI	4.05	4.11	4.19	4.23	4.26
46	TC	6.26	6.93	7.78	8.26	8.64
	SC	5.28	5.86	6.60	6.47	6.78
	PI	4.44	4.52	4.59	4.66	4.70

LEGEND
TC - Total Cooling Capacity,KW
SC - Sensible Capacity,KW
PI - Power Input
WB - Wet Bulb Temp(oC)
DB - Dry Bulb Temp(oC)
ID - Indoor
OU - Outdoor

Data Field

Filled the nominal data in the cells which font is RED

Heating Capacity (KW)

EDS100H /GC10-34 R22

	ENTERING AIR DB ID COIL(°c)					
	15		20		25	
ENTERING WB OD COIL(°C)	TH	PI	TH	PI	TH	PI
-10	5.82	2.81	5.60	2.99	5.38	3.14
-7	6.27	2.88	6.04	3.04	5.82	3.20
-2	6.65	2.91	6.43	3.09	6.21	3.26
2	8.10	3.05	7.76	3.25	7.43	3.44
6	11.42	3.28	**11.09**	**3.51**	10.70	3.73
10	12.42	3.46	12.09	3.70	11.76	3.96
15	13.42	3.62	13.09	3.90	12.75	4.14
20	14.14	3.72	13.81	4.04	13.42	4.35

LEGEND

TH - Total Heating Capacity,KW

PI - Power Input

WB - Wet Bulb Temp(oC)

DB - Dry Bulb Temp(oC)

ID - Indoor

OU - Outdoor

Data Field

Filled the nominal data in the sheet which font is RED

Cooling Capacity(KW)

EDS120H /GC45 R22

Entering Air DB OD Coil(°C)	Data	Entering Air WB/DB ID Coil(°C)				
		15/21	17/24	19/27	21/29	23/32
15	TC	11.88	12.58	13.16	13.75	14.21
	SC	7.86	8.33	8.78	8.58	8.73
	PI	3.39	3.40	3.40	3.42	3.43
20	TC	11.77	12.47	13.05	13.63	14.10
	SC	8.39	8.91	9.42	9.15	9.35
	PI	3.67	3.69	3.70	3.73	3.74
25	TC	11.30	12.12	12.82	13.40	13.86
	SC	7.64	8.18	8.66	8.50	8.72
	PI	3.96	3.99	4.03	4.06	4.07
30	TC	10.60	11.42	12.35	12.82	13.28
	SC	7.26	7.84	8.47	8.30	8.64
	PI	4.28	4.34	4.39	4.43	4.44
35	TC	9.79	10.60	**11.65**	12.23	12.70
	SC	6.84	7.44	**8.13**	8.04	8.36
	PI	4.63	4.70	**4.78**	4.82	4.84
40	TC	8.85	9.67	10.72	11.30	11.77
	SC	6.35	6.99	7.69	7.57	7.94
	PI	4.99	5.07	5.16	5.21	5.25
46	TC	7.69	8.50	9.55	10.14	10.60
	SC	5.77	6.40	7.21	7.07	7.41
	PI	5.47	5.56	5.66	5.74	5.79

LEGEND
TC - Total Cooling Capacity,KW
SC - Sensible Capacity,KW
PI - Power Input
WB - Wet Bulb Temp(oC)
DB - Dry Bulb Temp(oC)
ID - Indoor
OU - Outdoor

Data Field

Filled the nominal data in the cells which font is RED

Heating Capacity (KW)

EDS120H /GC45 R22

	ENTERING AIR DB ID COIL(°c)					
	15		20		25	
ENTERING WB OD COIL(°C)	TH	PI	TH	PI	TH	PI
-10	7.60	4.02	7.31	4.28	7.02	4.49
-7	8.18	4.12	7.89	4.34	7.60	4.58
-2	8.68	4.17	8.39	4.42	8.10	4.67
2	10.56	4.37	10.13	4.64	9.69	4.92
6	14.90	4.69	**14.47**	**5.02**	13.96	5.33
10	16.21	4.95	15.77	5.30	15.34	5.66
15	17.51	5.17	17.07	5.57	16.64	5.92
20	18.45	5.32	18.02	5.77	17.51	6.22

LEGEND

TH - Total Heating Capacity,KW

PI - Power Input

WB - Wet Bulb Temp(oC)

DB - Dry Bulb Temp(oC)

ID - Indoor

OU - Outdoor

Data Field

Filled the nominal data in the sheet which font is RED

Outdoor Unit Noise Data Report - Fix RPM

Model: GCN9RC(R22)

Type: PILOT

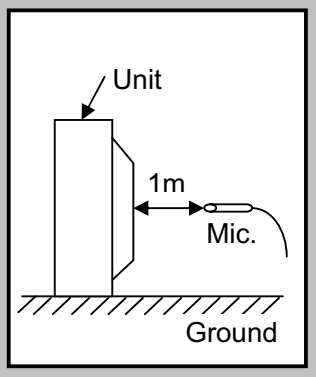
Background Noise,dB(A): Outdoor 25.1

Outdoor Octave Band Sound Pressure Level, dB

	Outdooor	
RPM	747	
Octave Band	**Cooling**	**Heating**
63	55	56
125	56	56
250	52	53
500	49	49
1000	45	46
2000	39	40
4000	35	36
8000	27	29

Drawing of microphon position

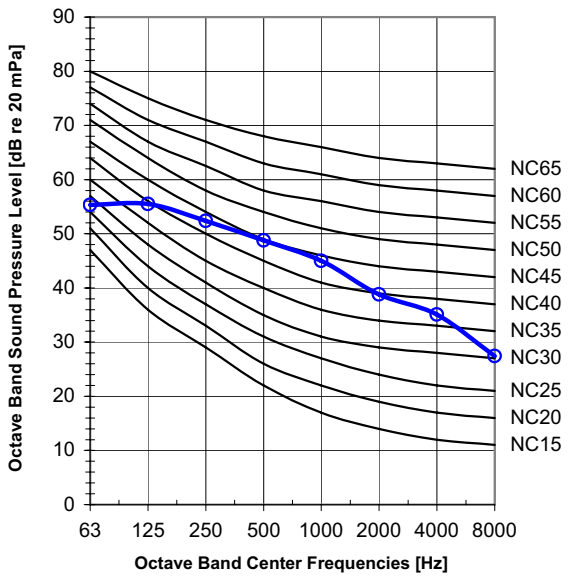
Outdoor



Outdoor Sound Pressure (cooling), dB(A)	50.5
Outdoor Sound Power (cooling), dB(A)	60.9
Outdoor Sound Pressure (heating), dB(A)	51.1
Outdoor Sound Power (heating), dB(A)	60.8

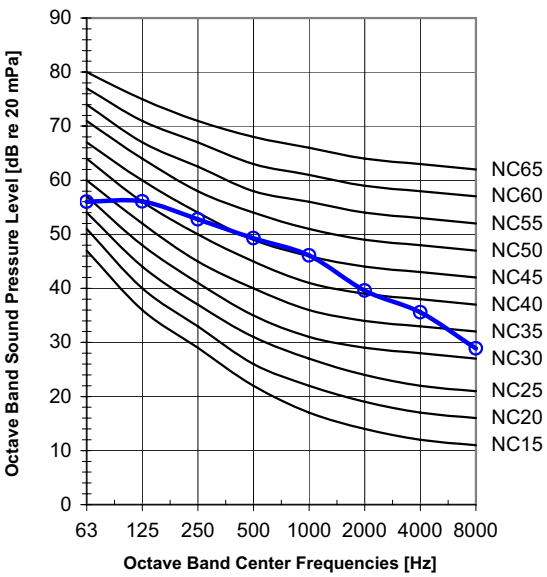
Cooling

Noise spectrum & NC Curves



Heating

Noise spectrum & NC Curves



SEND TO

Outdoor Unit Noise Data Report - Fix RPM

Model: GCN12RC(R22)

Type: Pilot

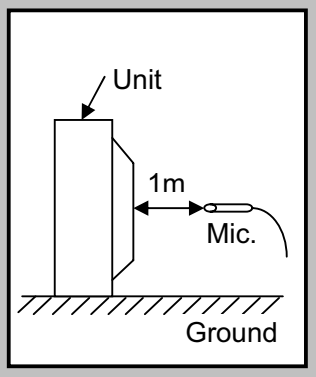
Outdoor
Background Noise,dB(A): 25.1

Outdoor Octave Band Sound Pressure Level, dB

Outdooor

RPM	833	
Octave Band	Cooling	Heating
63	57	56
125	57	56
250	55	55
500	55	56
1000	48	50
2000	43	44
4000	39	40
8000	32	35

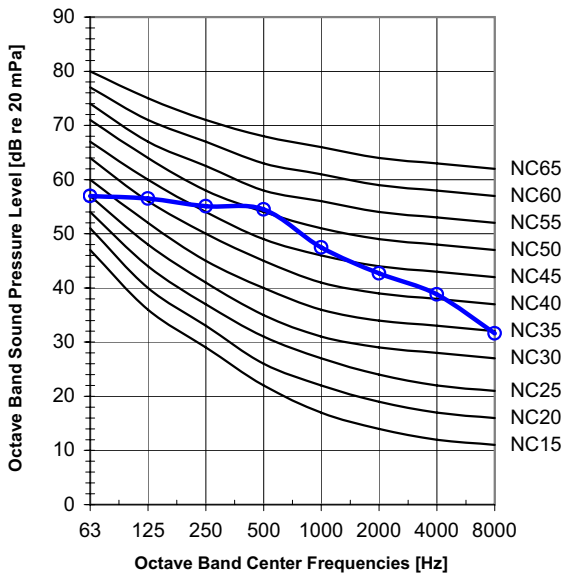
Drawing of microphon position
Outdoor



Outdoor Sound Pressure (cooling), dB(A)	54.9
Outdoor Sound Power (cooling), dB(A)	64.0
Outdoor Sound Pressure (heating), dB(A)	56.2
Outdoor Sound Power (heating), dB(A)	64.5

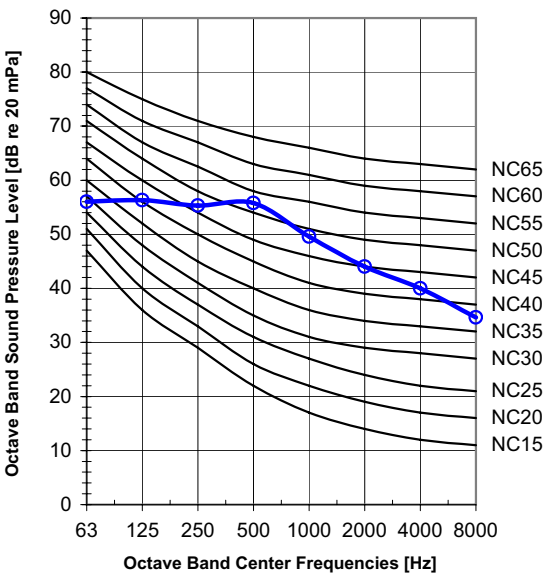
Cooling

Noise spectrum & NC Curves



Heating

Noise spectrum & NC Curves



SEND TO

Outdoor Unit Noise Data Report - Fix RPM

Model: ONG3-17

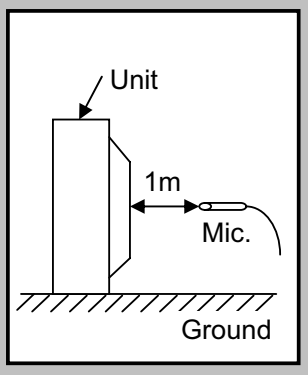
Type: Polit

Background Noise,dB(A): Outdoor 25.1

Outdoor Octave Band Sound Pressure Level, dB

	Outdooor	
RPM	906	
Octave Band	**Cooling**	**Heating**
63	60	61
125	58	60
250	58	60
500	50	52
1000	47	49
2000	44	45
4000	41	42
8000	35	39

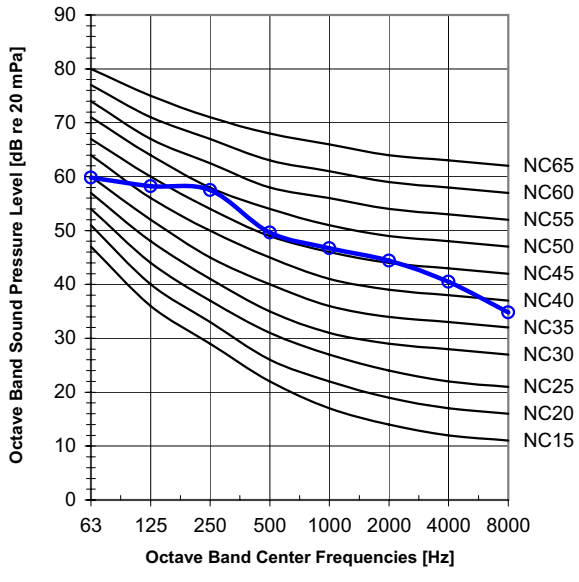
Drawing of microphone position
Outdoor



Outdoor Sound Pressure level(cooling),dB(A)	53.3
Outdoor Sound Power level (cooling), dB(A)	64.4
Outdoor Sound Pressure level (heating),dB(A)	55.2
Outdoor Sound Power level (heating), dB(A)	66.1

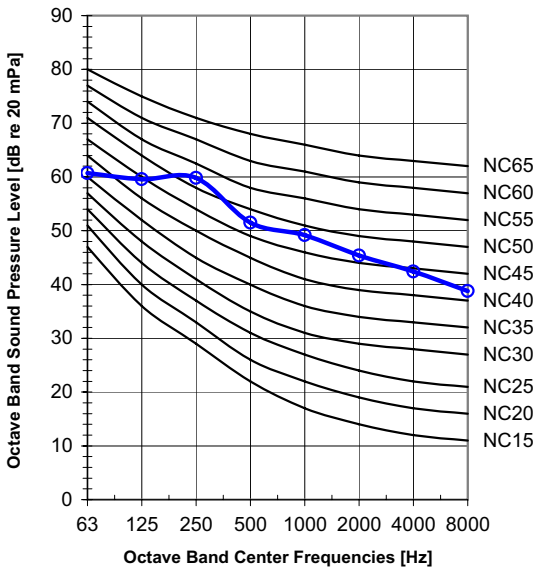
Cooling

Noise spectrum & NC Curves



Heating

Noise spectrum & NC Curves



SEND TO

Outdoor Unit Noise Data Report - Fix RPM

Model: GC22RC(R22)

Type: AUDIT

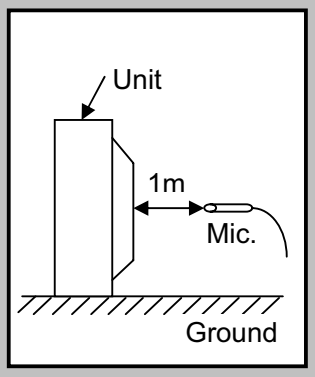
Outdoor
Background Noise,dB(A): 24.1

Outdoor Octave Band Sound Pressure Level, dB

Outdooor

RPM	830	
Octave Band	**Cooling**	**Heating**
63	56	58
125	57	59
250	59	60
500	55	56
1000	51	54
2000	49	50
4000	45	47
8000	35	39

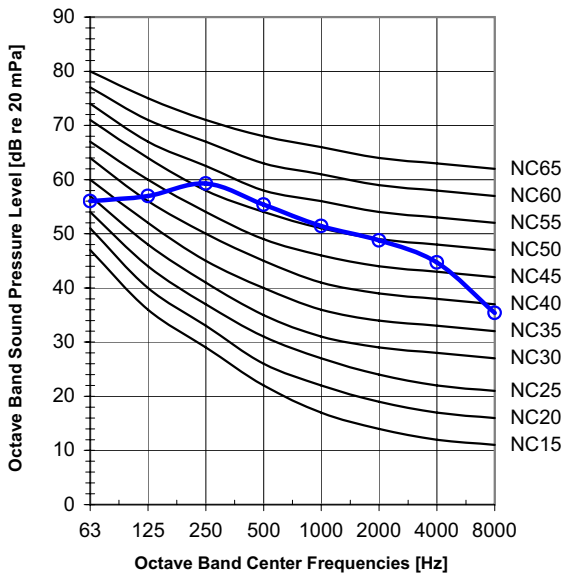
Drawing of microphon position
Outdoor



Outdoor Sound Pressure (cooling), dB(A)	58.2
Outdoor Sound Power (cooling), dB(A)	68.7
Outdoor Sound Pressure (heating), dB(A)	59.7
Outdoor Sound Power (heating), dB(A)	69.7

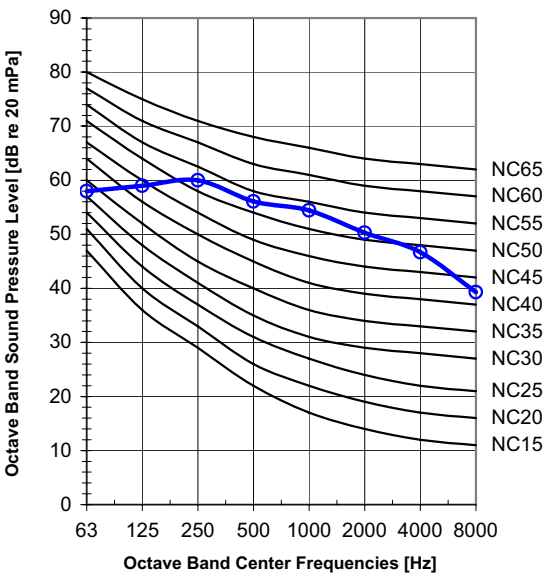
Cooling

Noise spectrum & NC Curves



Heating

Noise spectrum & NC Curves



SEND TO

Outdoor Unit Noise Data Report - Fix RPM

Model: GC34RC(R22)

Type: AUDIT

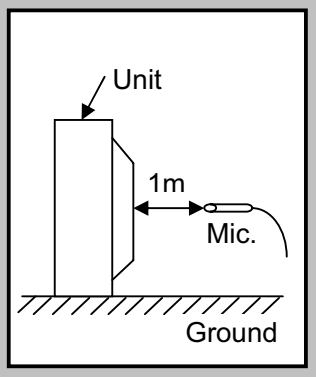
Outdoor
Background Noise,dB(A): 23.9

Outdoor Octave Band Sound Pressure Level, dB

Outdooor

RPM	840	
Octave Band	Cooling	Heating
63	68	68
125	68	69
250	60	59
500	58	57
1000	55	53
2000	51	49
4000	46	43
8000	39	36

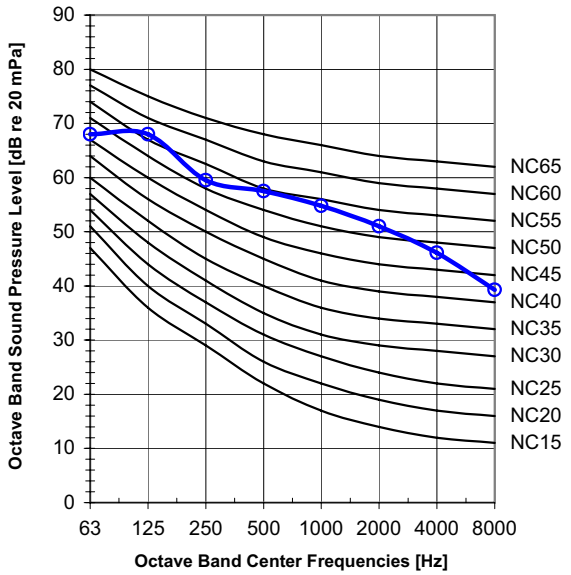
Drawing of microphon position
Outdoor



Outdoor Sound Pressure (cooling), dB(A)	60.2
Outdoor Sound Power (cooling), dB(A)	72.35
Outdoor Sound Pressure (heating), dB(A)	61.6
Outdoor Sound Power (heating), dB(A)	73.83

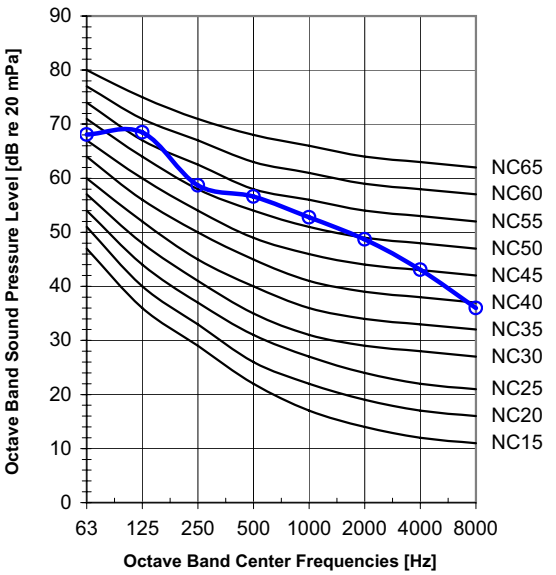
Cooling

Noise spectrum & NC Curves



Heating

Noise spectrum & NC Curves



SEND TO

Outdoor Unit Noise Data Report - Fix RPM

Model: GC45RC(R22)

Type: AUDIT

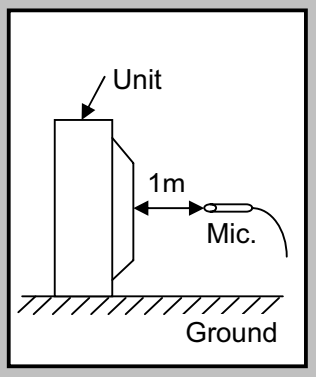
Outdoor
Background Noise,dB(A): 23.9

Outdoor Octave Band Sound Pressure Level, dB

Outdooor

RPM	784	
Octave Band	**Cooling**	**Heating**
63	67	68
125	68	69
250	58	59
500	56	57
1000	53	53
2000	48	49
4000	43	43
8000	35	36

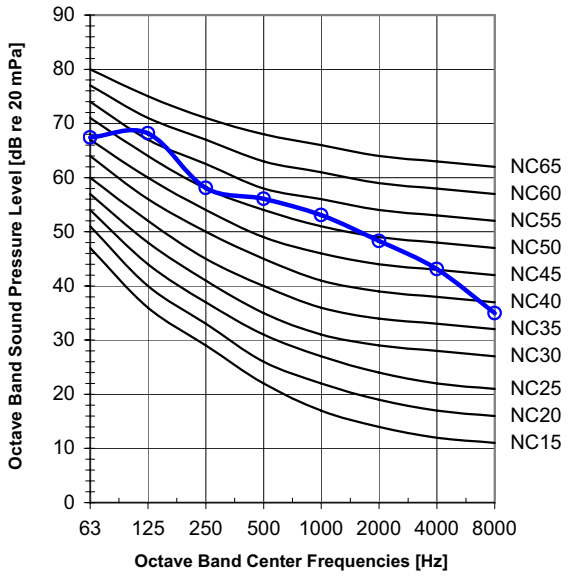
Drawing of microphon position
Outdoor



Outdoor Sound Pressure (cooling), dB(A)	58.6
Outdoor Sound Power (cooling), dB(A)	69.48
Outdoor Sound Pressure (heating), dB(A)	58.7
Outdoor Sound Power (heating), dB(A)	70.13

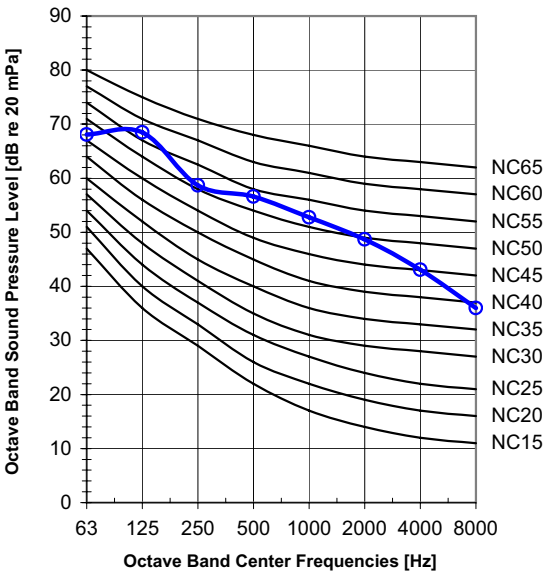
Cooling

Noise spectrum & NC Curves



Heating

Noise spectrum & NC Curves



SEND TO

7. ELECTRICAL DATA

7-1 MODEL: EDS 25/ GCN9 EDS 35/ GCN12 EDS 52/ ONG3-17 EDS 73/ GC22

Model	Indoor Unit	EDS25	EDS35	EDS52	EDS73
	Outdoor Unit	GCN9	GCN12	ONG3-17	GC22
Power Supply	1N~230V-50Hz				
Max. Current	A	7.1	8.2	12.9	18.7
Power Supply	mm^2	3G, 1.0	3G, 1.5	3G, 1.5	3G, 2.5
Indoor And Outdoor Unit Connections					
Connections cable	mm^2	6G, 1.0	6G, 1.5	6G, 1.5	6G, 2.5

1. If there is a additional electric-heater, the cable must be thicked one grade.
2. Use supply wire sizes as per local electrical codes and regulations.

7-2 MODEL EDS100/GC10-34 EDS120/ GC45

Model	Indoor Unit	EDS100	EDS120
	Outdoor Unit	10-34	45
Power Supply	3N~400V-50Hz		
Max. Current	A	11.0	11.3
Power Supply		5G, 4.0	5G, 4.0
Indoor And Outdoor Unit Connections			
Connections cable		6G, 2.5	6G, 2.5

Use supply wire sizes as per local electrical codes and regulations.

7. ELECTRICAL DATA

7-3 Model：2xEDS25/GC9+9 2xEDS35/GC12+12

Model	Indoor Unit	2×EDS25	2×EDS35
	Outdoor Unit	GC9+9	GC12+12
Power Supply	1N~230V-50Hz		
Max. Current	A	12.8	17.6
Power Supply	mm^2	3G,1.5	3G, 2.5
Indoor And Outdoor Unit Connections			
Connections cable	mm^2	6G, 1.0	6G, 1.5

1. If there is a additional electric-heater, the cable must be thicken one grade.
2. Use supply wire sizes as per local electrical codes and regulations.

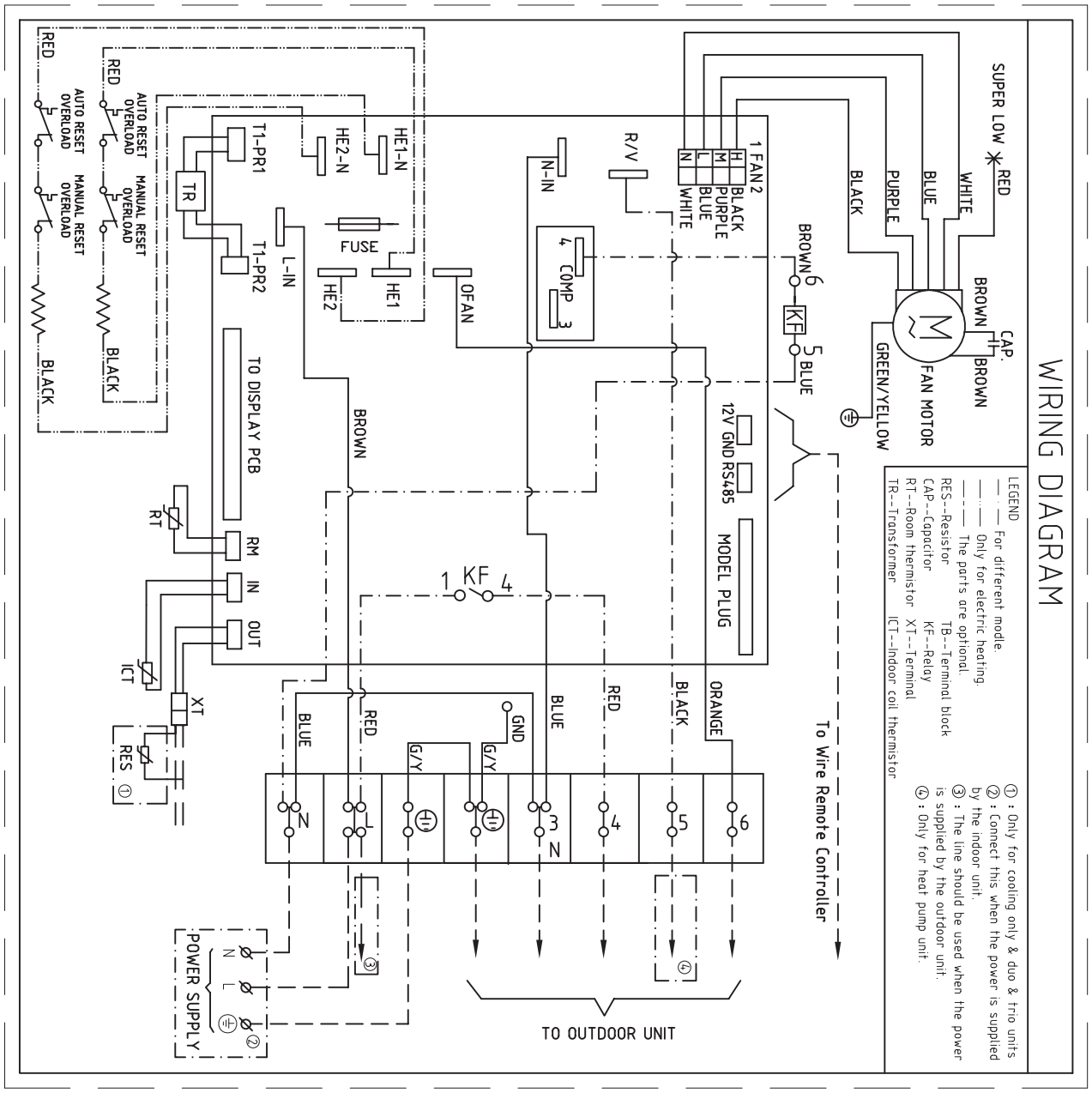
7-4 Model: EDS 52+52 / GC17+17
EDS25X2+EDS35 / GC9+9+12
EDS25×2+EDS52 / GC9+9+17
EDS25+EDS35+EDS52/ GC9+12+17
EDS35X3 / GC12+12+12

Model	Indoor Unit	2×EDS52	2×EDS25 +EDS35	2×EDS25 +EDS52	EDS25+EDS35+EDS52	3×EDS35
	Outdoor Unit	GC17+17	GC9+9+12	GC9+9+17	GC9+12+17	GC12+12+12
Power Supply	1N~230V-50Hz					
Max. Current	A	23.7	19.5	24.1	27.3	24.7
Power Supply	mm^2	3G, 4.0	3G, 2.5	3G, 4.0	3G, 4.0	3G, 4.0
Indoor And Outdoor Unit Connections						
Connections cable	mm^2	6G, 1.5	6G, 1.5	6G, 1.5	6G, 1.5	6G, 1.5

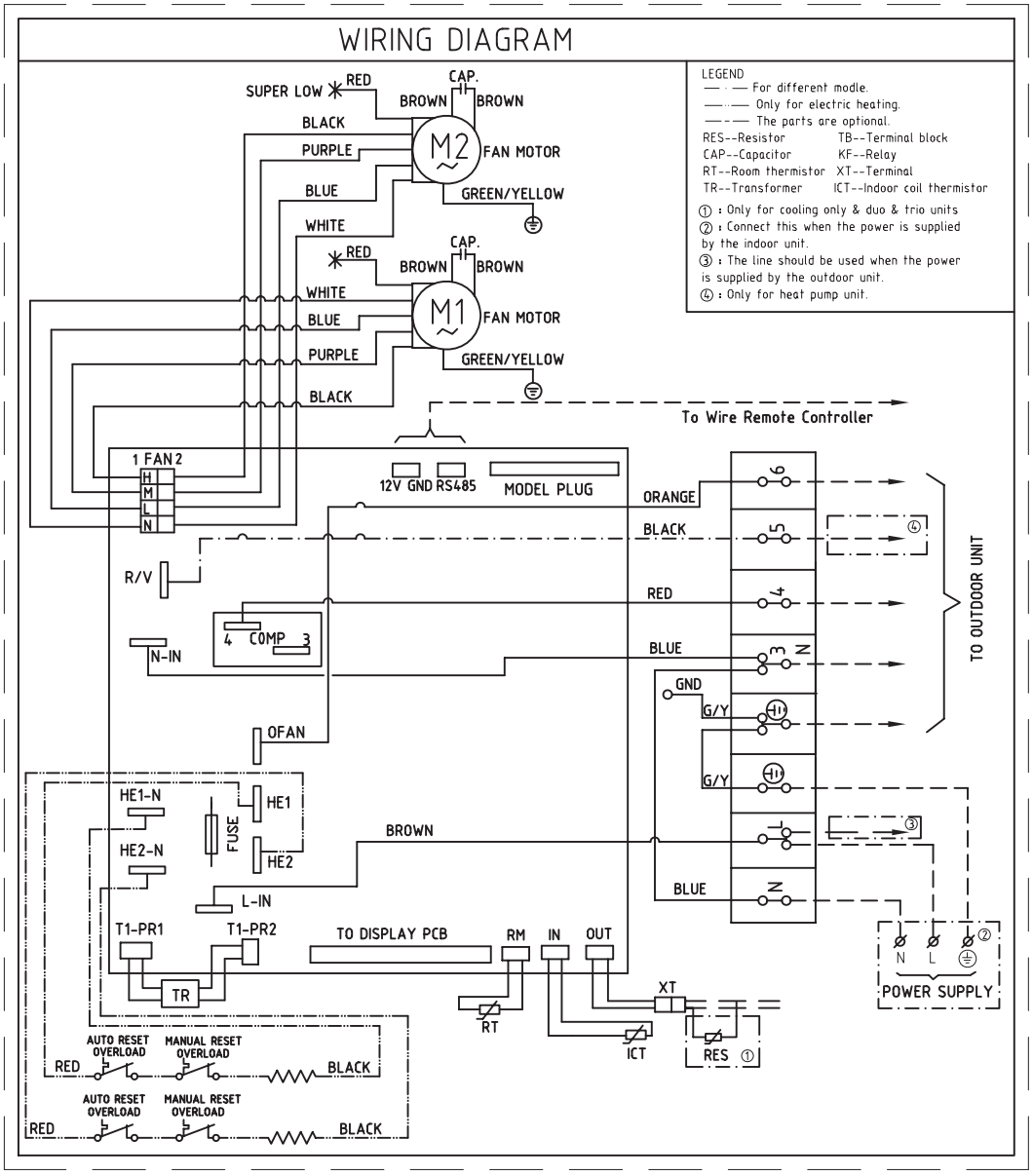
1. If there is a additional electric-heater, the cable must thicken one grade.
2. Use supply wire sizes as per local electrical codes and regulations.

8. WIRING DIAGRAMS

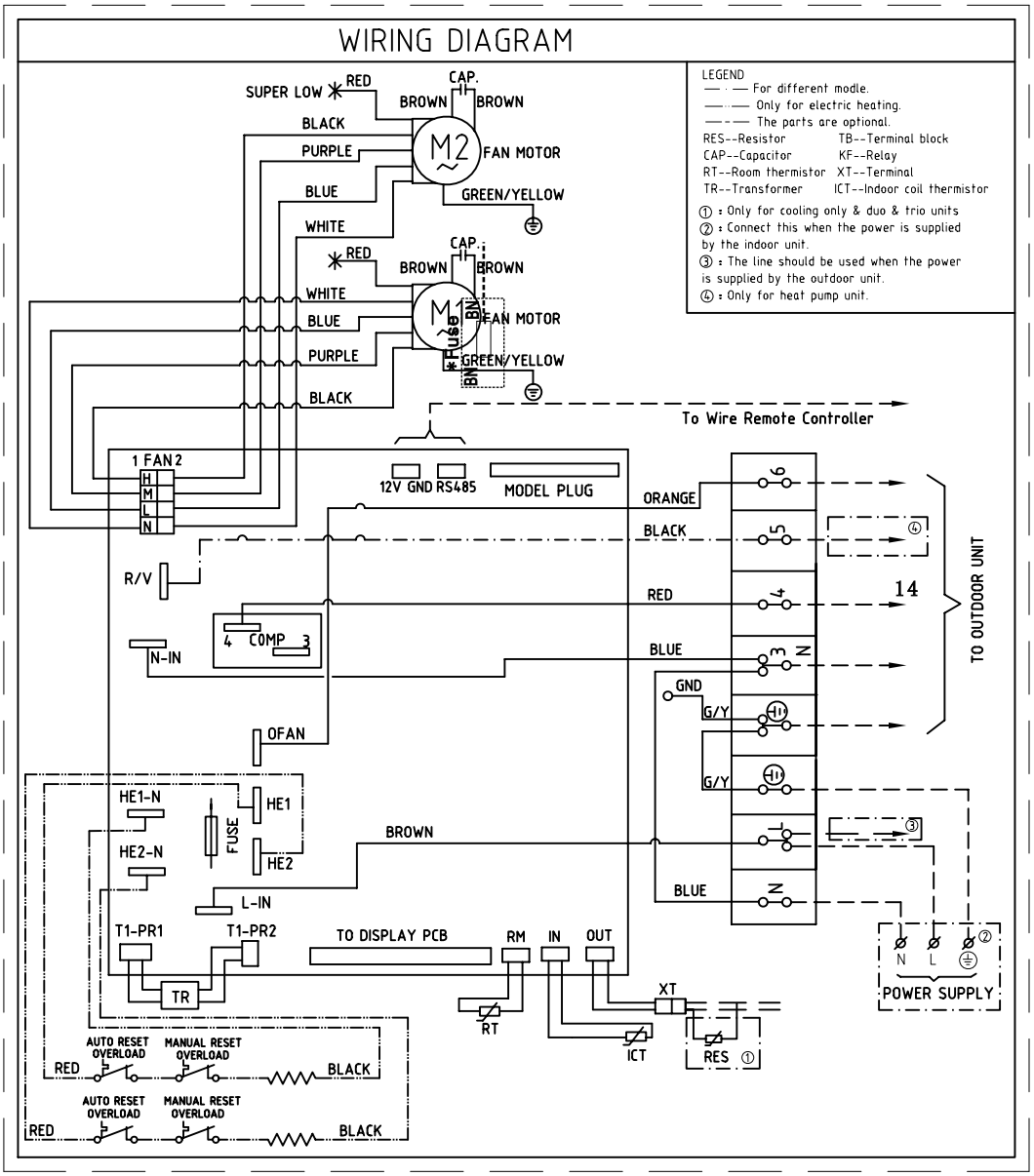
8.1 Indoor Unit : EDS25 EDS35 EDS52 EDS73



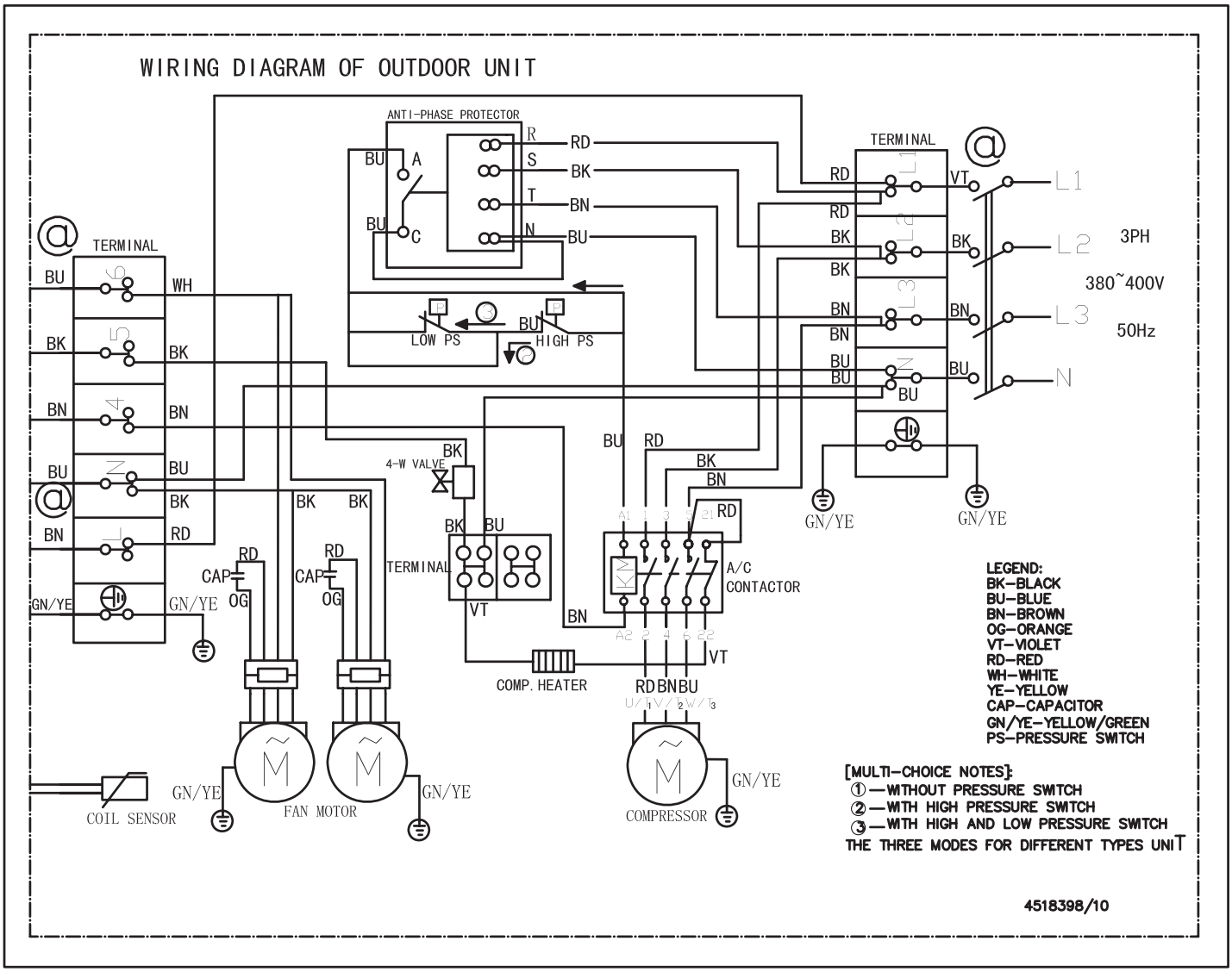
8.2 Indoor Unit : EDS100 EDS120



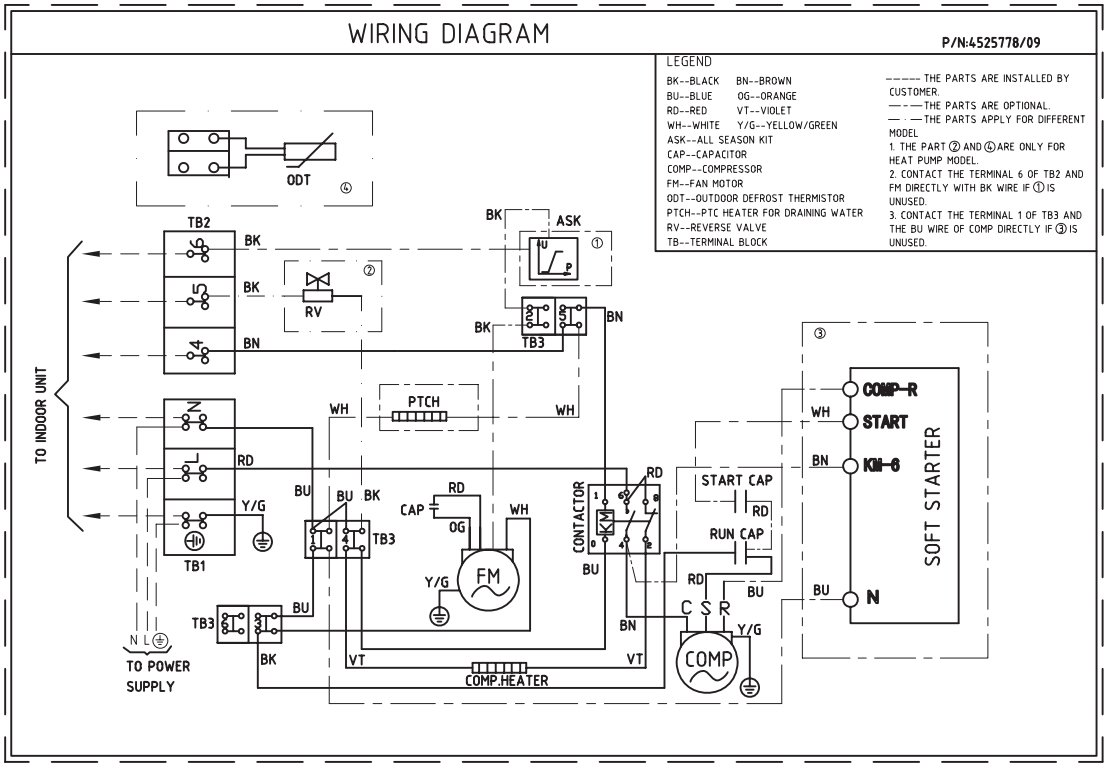
8.3 Outdoor unit : GCN9 GCN12



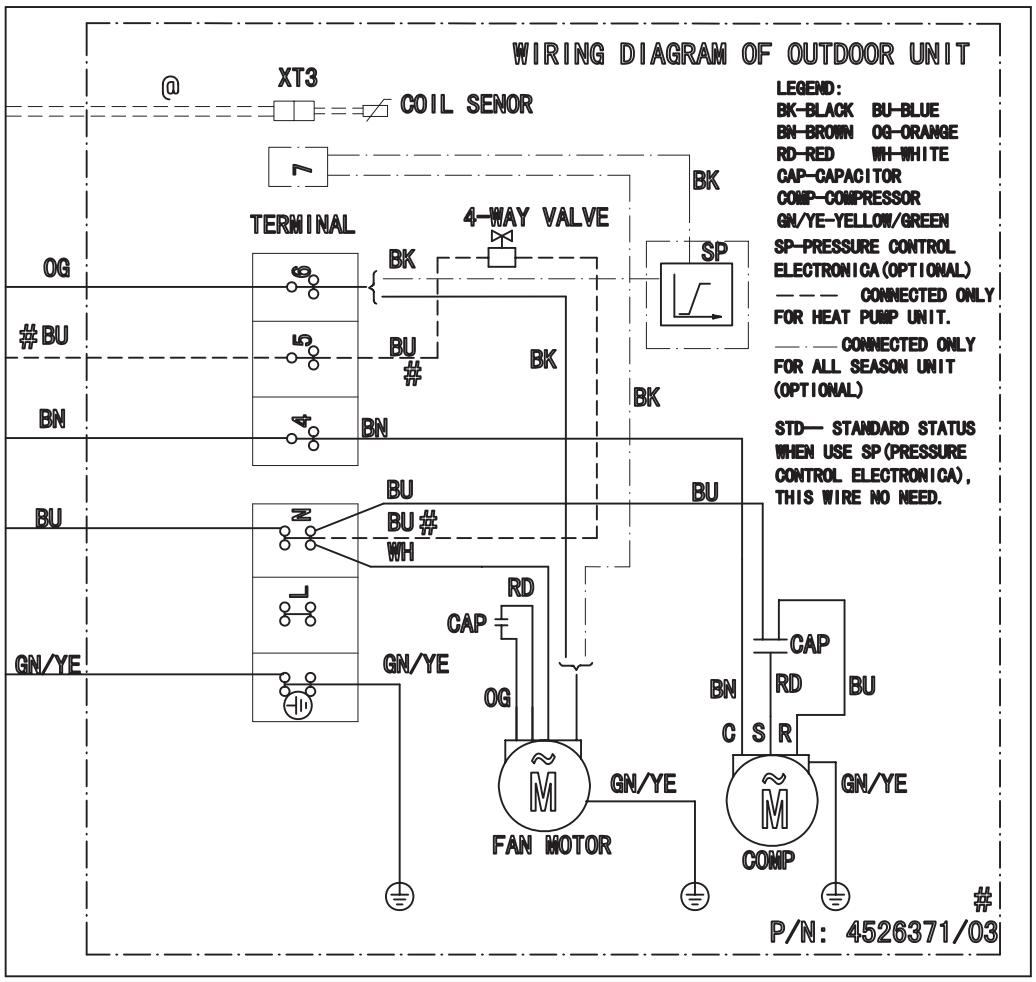
8.4 Outdoor unit : GC10-34 GC45



8.5 Outdoor unit : ONG3-17

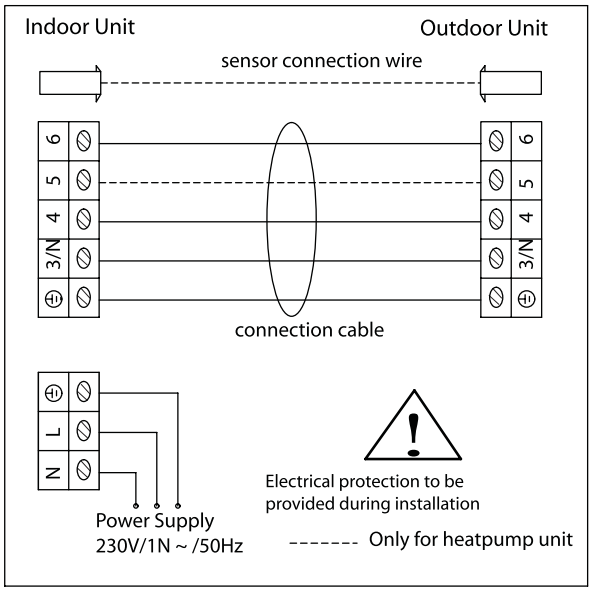


8.6 Outdoor unit : GCZ22

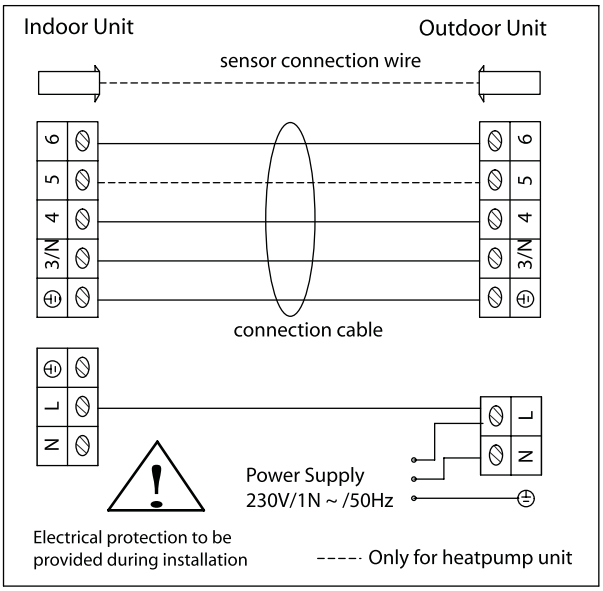


9. ELECTRICAL CONNECTIONS

9.1 Model: EDS25/GCN9 EDS35/GCN12 EDS52/ONG3-17 EDS73/GCZ22

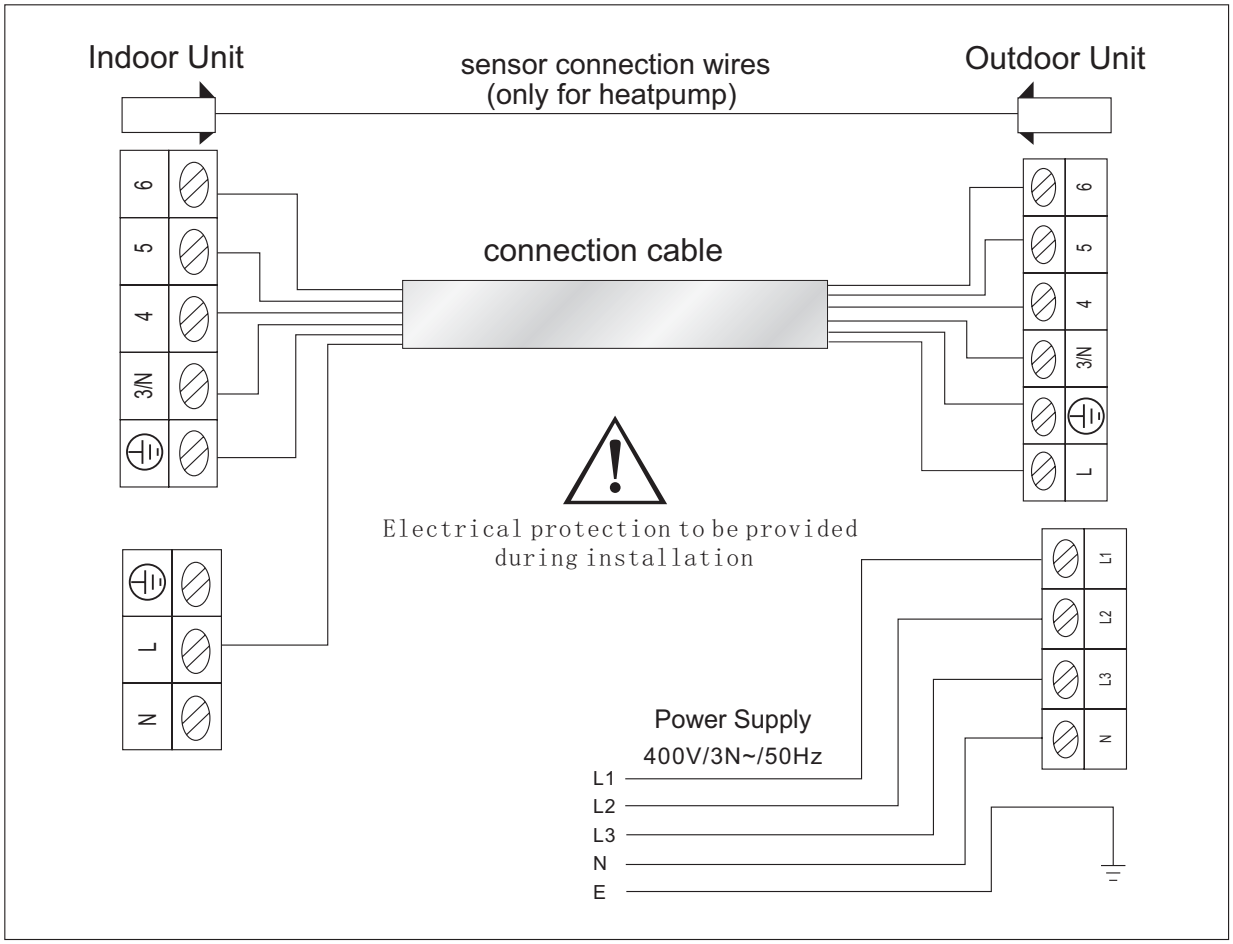


Inside supply cord
EDS 25/GCN9 EDS 35/GCN12 EDS 52/ONG3-17 EDS 73/GC22

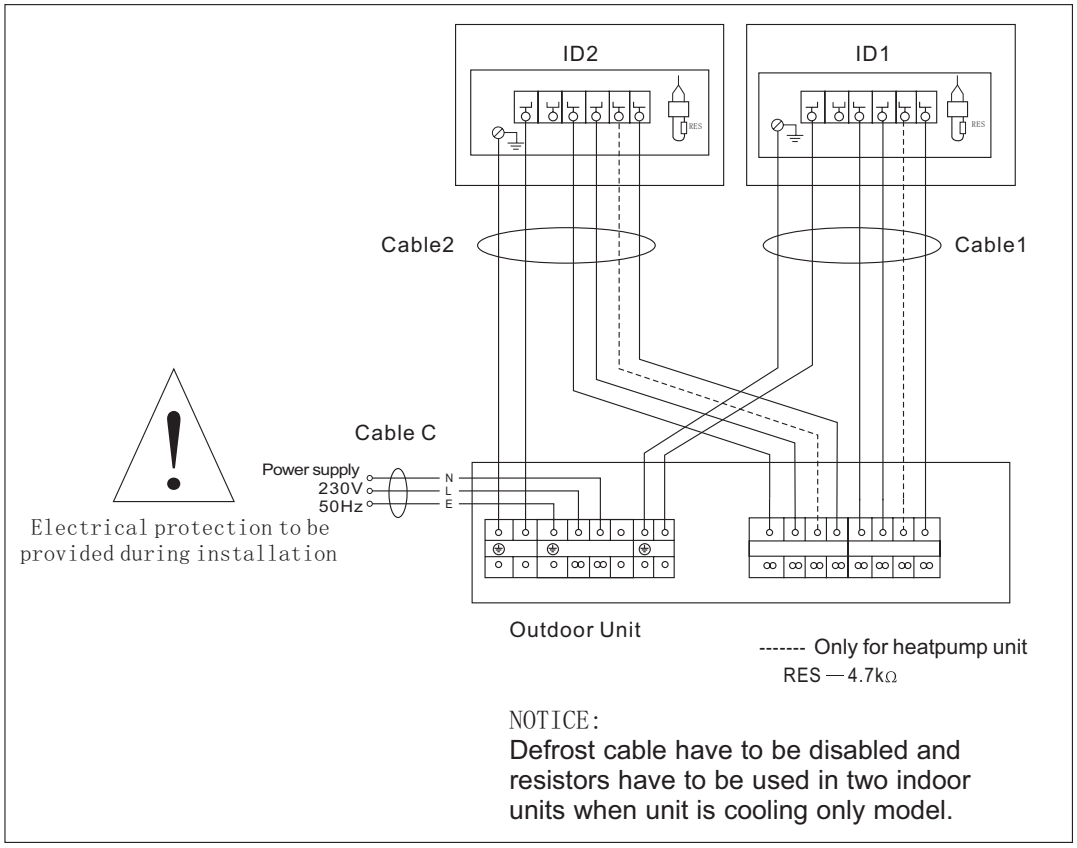


Outside supply cord
EDS 25/GCN9 EDS 35/GCN12 EDS 52/ONG3-17 EDS 73/GC22

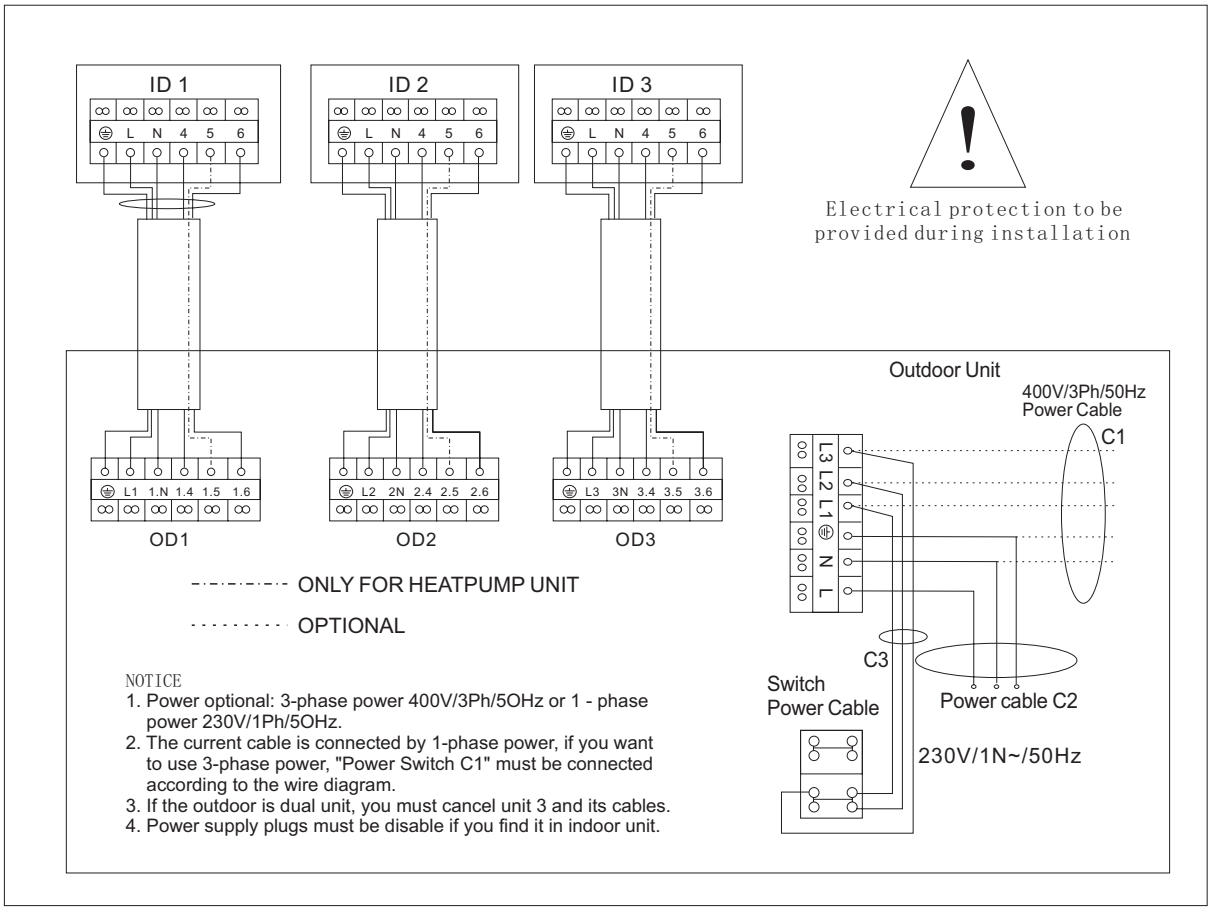
9.2 Model: EDS100/GC10-34 EDS120/GC45



9.3 Model: 2xEDS25/GC9+9 2xEDS/GC12+12



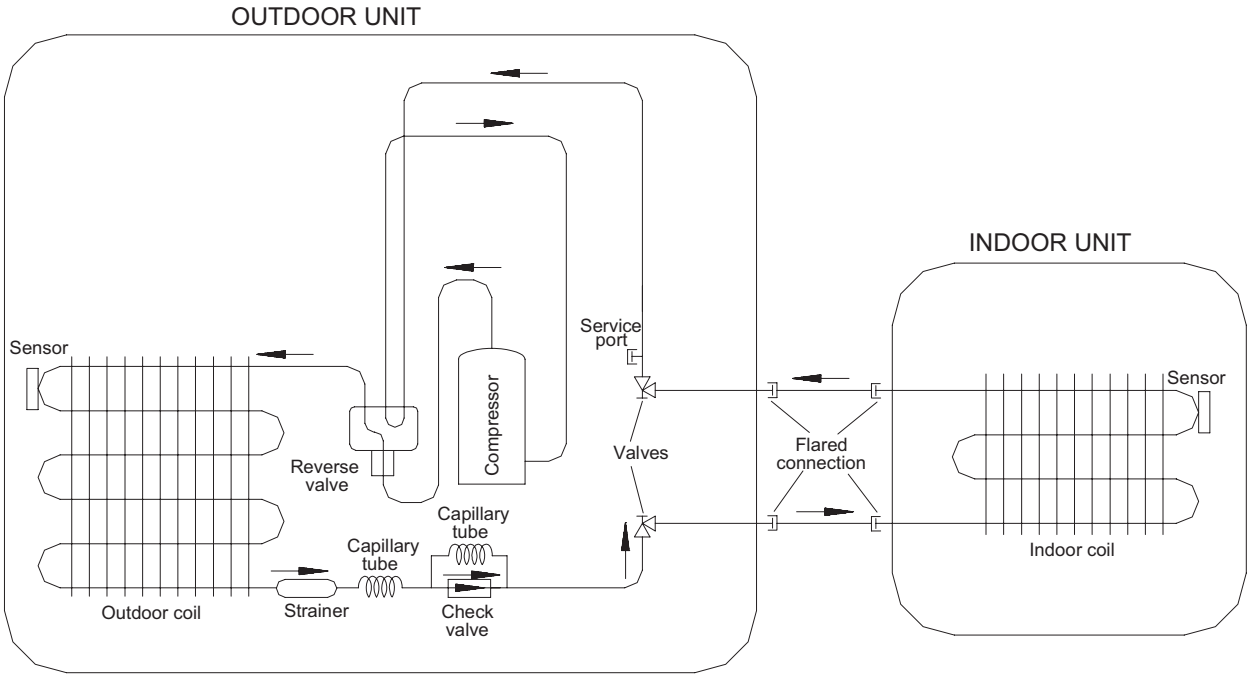
9.4 Model: EDS 52+52 / GC 17+17
EDS 25x2+EDS 35 / GC 9+9+12
EDS 25x2+EDS 52 / GC 9+9+17
EDS 25+EDS 35+EDS52 / GC 9+12+17
EDS 35x3 / GC 12+12+12



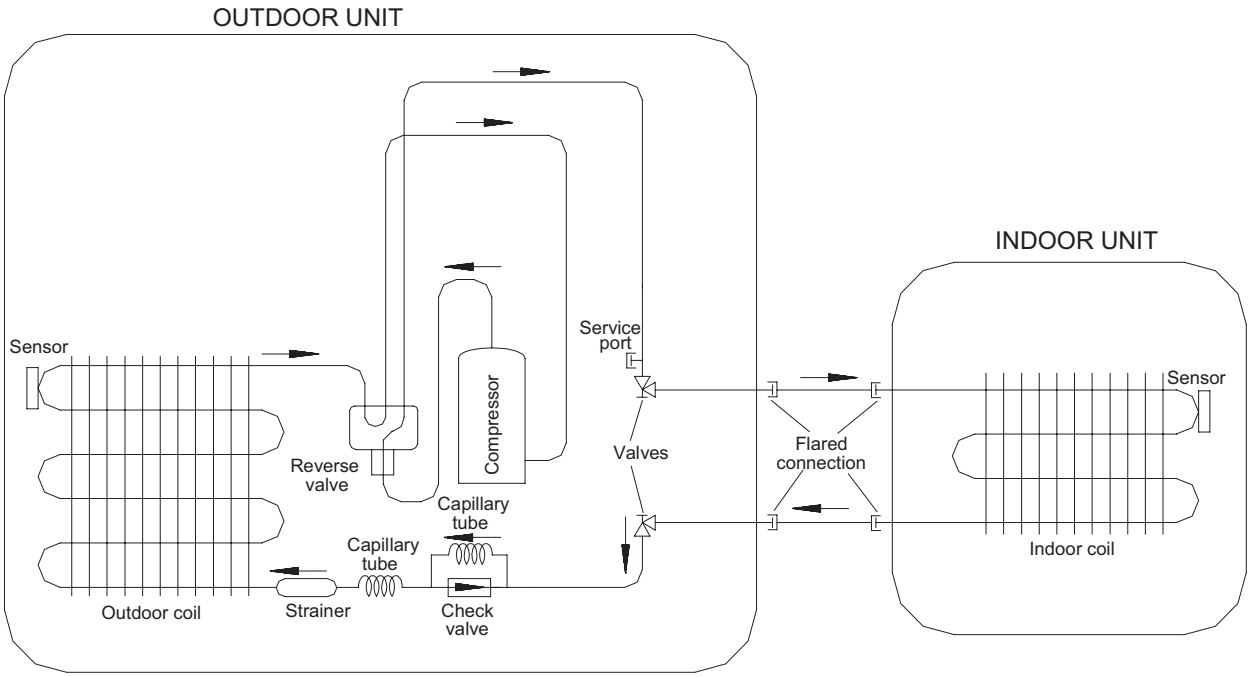
10. REFRIGERATION DIAGRAMS

10.1 Heat Pump Models

10.1.1 EDS25H / GCN 9 RC EDS35H / GCN 12 RC EDS52H / ONG3-18 RC EDS73H/GCZ22 RC EDS100H/GC10-34 RC EDS120H/GC45 RC



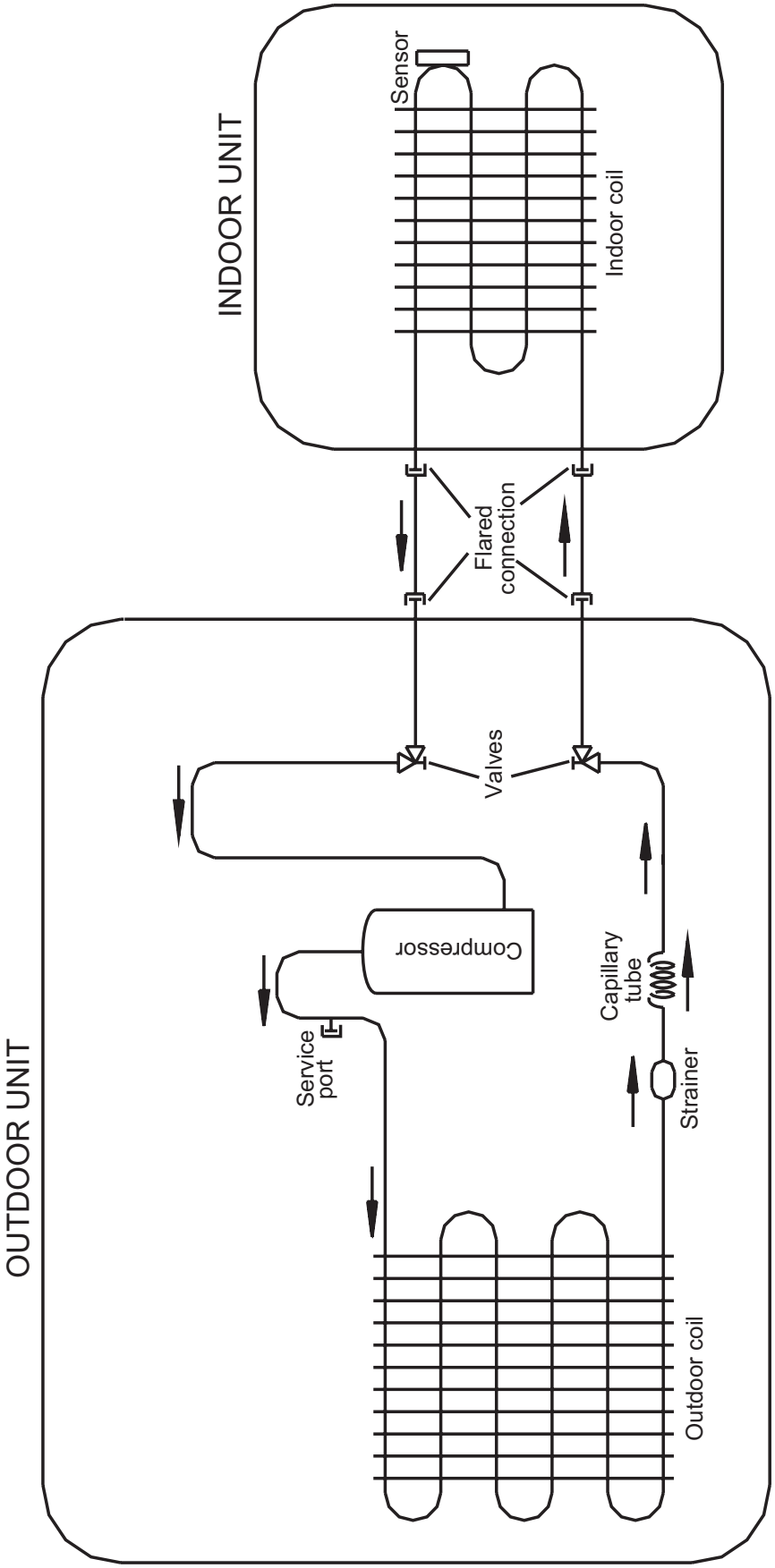
COOLING MODE



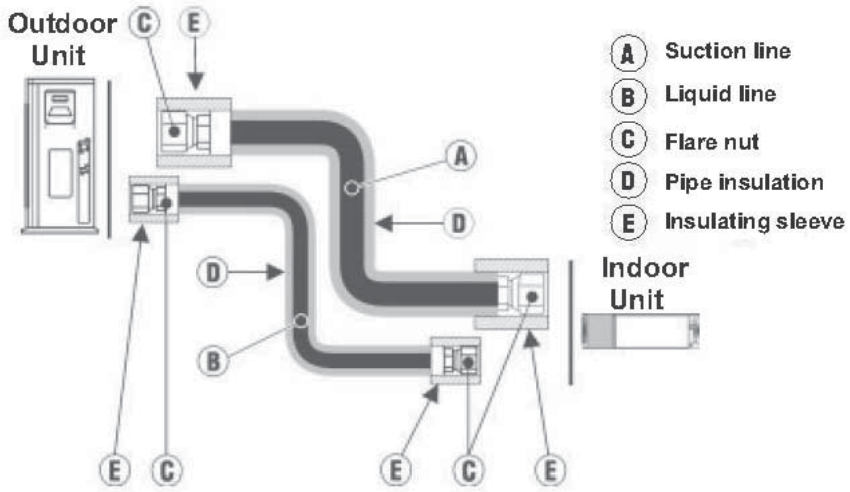
HEATING MODE

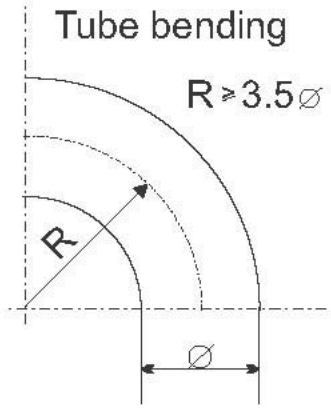
10.2 Cooling Only Models

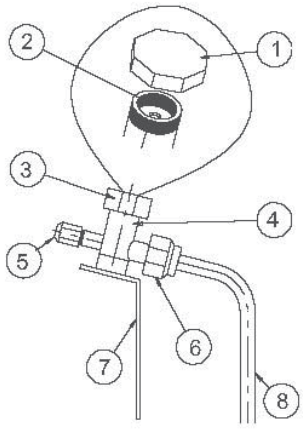
10.2.1 EDS25A/GCN9 ST EDS35A/GCN12 ST EDS52A/ONG3-18 ST EDS73A/GCZ22 ST EDS100A/GC10-34 ST EDS120A/GC45 ST



11. TUBING CONNECTIONS



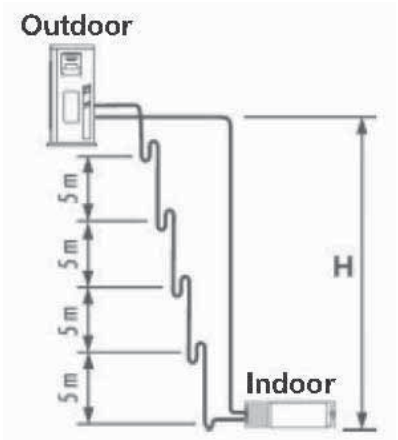




TUBE (Inch) / TORQUE (Nm)	1/4"	3/8"	1/2"	5/8"	3/4"
Flare Nuts	11-13	40-45	60-65	70-75	80-85
Valve Cap	13-20	13-20	18-25	18-25	40-50
Service Port Cap	11-13	11-13	11-13	11-13	11-13

1. Valve Protection Cap-end
2. Refrigerant Valve Port (use Allen wrench to open/close)
3. Valve Protection Cap
4. Refrigerant Valve
5. Service Port Cap
6. Flare Nut
7. Unit Back Side
8. Copper Tube

When the outdoor unit is installed above the indoor unit an oil trap is required every 5m along the suction line at the lowest point of the riser. Incase the indoor unit is installed above the outdoor, no trap is required.



12. CONTROL SYSTEM EDS Series

12.1 Electronic Control

12.1.1 Introduction

The electronic control information is designed for service applications, and is common to the following groups of air-conditioners:

- **ST/ RC** group -Cooling only / cooling and heating by heat pump.
- **SH group** -Cooling and heating by heat pump and supplementary heater.
- **RH group** -Cooling, heating by heaters only.

12.1.2 Jumpers Settings

GROUP	**J6** Setting	**J2** Setting
ST / RC	Open	Open
SH	Closed	Open
RH	Closed	Closed

12.2 Legend

AC	- Alternate Current
A/C	- Air-Conditioner
ANY	- ON or OFF status
CLOCK	- ON/OFF Operation Input, (dry contact)
COMP	- Compressor
CPU	- Central Processing Unit
ELUM	- Extended Louver Upward Movement (Software Jumper)
E²PROM, EEP	- Erase Enable Programmable Read Only Memory
HE	- Heating Element
HPC	- High Pressure Control
H/W	- Hardware
ICP	- Indoor Condensation Pump
ICT	- Indoor Coil Temperature (RT2) sensor
IF, IFAN	- Indoor Fan
IR	- Infra Red
LEVEL1	- Normal Water Level
LEVEL2/3	- Medium/High Water Level
LEVEL4	- Overflow Level
Max	- Maximum
Min	- Minimum
min	- Minute (time)
NA	- Not Applicable
OCP	- Outdoor Condensation Pump
OCT	- Outdoor Coil Temperature (RT3) sensor
OF, OFAN	- Outdoor Fan
OPER	- Operate
Para.	- Paragraph
RAT	- Return Air Temperature (RT1) sensor
RC	- Reverse Cycle (Heat Pump)
R/C	- Remote Control
RCT	- Remote Control Temperature
RH	- Resistance Heater
RT	- Room Temperature (i.e. RCT in IFEEL mode, RAT otherwise)
RV	- Reversing Valve
SB, STBY	- Stand-By
sec	- Second (time)
Sect	- Section
SH	- Supplementary Heater
SPT	- Set Point Temperature
ST	- Standard (a Model with Cooling Only)
S/W	- Software
TEMP	- Temperature
W/O	- Without
WVL	- Water Valve
ΔT	- The difference between SPT and RT. in Heat Mode:ΔT = SPT-RT in Cool/Dry/Fan Mode: ΔT = RT-SPT

12.3 General functions

12.3.1 COMP operation

For each Mode including POWER OFF & SB, a Min time delay of 3 min before COMP restarting, excluding DEICING Mode

The Min operation time of COMP under different operating conditions is

Operation Mode	Min operation time of COMP
Heat, Cool or Auto Modes	3 min.
Fan, Dry, Overflow, Protection modes, or mode change	ignored

12.3.2 IFAN operation

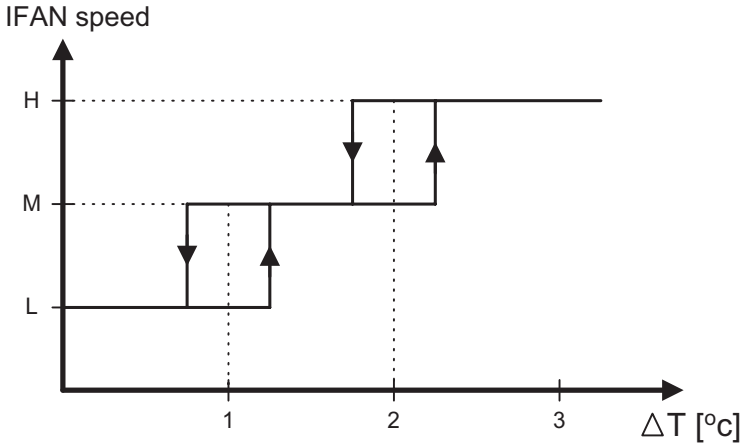
- Min time interval between IFAN speed change in AUTOFAN Mode, is 30 sec.
- Min time interval between IFAN speed change in H/M/L Mode is 1 sec.
- IFAN speed in Heat/Cool Autofan Mode is determined according to the following table:

ΔT	IFAN Speed
$\Delta T \geq 2$	HIGH
$2 \geq \Delta T \geq 1$	MED
$1 \geq \Delta T$	LOW

where in Heat Mode: $\Delta T = SPT - RT$
in Cool Mode: $\Delta T = RT - SPT$

Note:

- In Heat Mode, the rules in section 4.0.3 have the higher priority.
- The table above can be represent by a hysteresis curve which will minimize the switching of the IFAN relay and will minimize the change in IFAN speed:



12.3.3 OFAN operation

- Min time interval between OFAN ON/OFF state change is 30 sec.
- In general, OFAN starts together with COMP.

12.3.4 HE operation

- Minimum Heaters ON or OFF time is 30 sec.
- Heaters can be activated only if IFAN is on.

12.3.5 Protections

- High pressure protection is applicable to all operating modes.
- Deicing control is valid in Heat and Auto Heat Mode only.
- Defrosting control is valid in Dry, Cool, Heat and Auto Modes.
- No reset after protection modes.

12.3.6 Thermistors operation

- Return air Temp. is detected by RAT (RT1) in normal Mode, or by RCT (R/C sensor) in I-FEEL Mode.
- Indoor Coil Temp. is detected by ICT (RT2).

12.3.6.1 Definition of thermistor faults:

a. Thermistor is disconnected -
   The thermistor reading is below -30°c.

b. Thermistor is shorted -
   The thermistor reading is over 75°c.

c. Thermistor Temp reading doesn't change (irrelevant for RT1) -
   (i) This test is performed only once after a unit is switched from OFF/STBY to operation. At the first occurrence of 10 min continuous COMP operation, the current ICT & OCT are compared with those when the COMP was switched from OFF to ON 10 min before. If the ΔT is less than 3°c, the thermistor is regarded as defective.
   (ii) The ICT and OCT no-change error can be disabled together by connecting a4.7 kohm resistor (5%) to the OCT connector. These resistors are equivalent to a thermistor at 43+/-1°c and 48+/-1°c respectively.
   (iii) Connecting a 4.7k resistor to the ICT connector will disable the ICT no-change error only.

12.3.6.2 Handling the thermistor faults in a COMP unit

i. ICT/OCT thermistor is disconnected or shorted -

The invalid thermistor temperature is replaced by 43°c, so that the unit can continue the normal operation. All protections related to that faulty thermistor will be disabled. For example, in case of any ICT fault, the ICT high pressure protection in Heat Mode and ICT defrost protection in Cool Mode will not operate anymore. The same is also applied to the OCT fault.

ii. RAT thermistor is disconnected or shorted –

The RAT will be derived from the ICT by using the equations :

Heat Mode: RAT=ICT/2.3
Cool Mode RAT=ICT*4

Notes:

- In case of any thermistor failure, the STBY LED will be blinking until the fault condition is corrected.
- User can use the system diagnostics function to find out the nature of the thermistor faults.

i. RAT thermistor is disconnected or shorted –

System will operate continuously in the last IFAN & WVL status when turned ON.

Notes:

- As in the COMP unit, the STBY LED will be blinking to indicate a thermistor fault. And, the user can use the system diagnostics function to find out the nature of the fault.

12.4 Cooling Mode - General

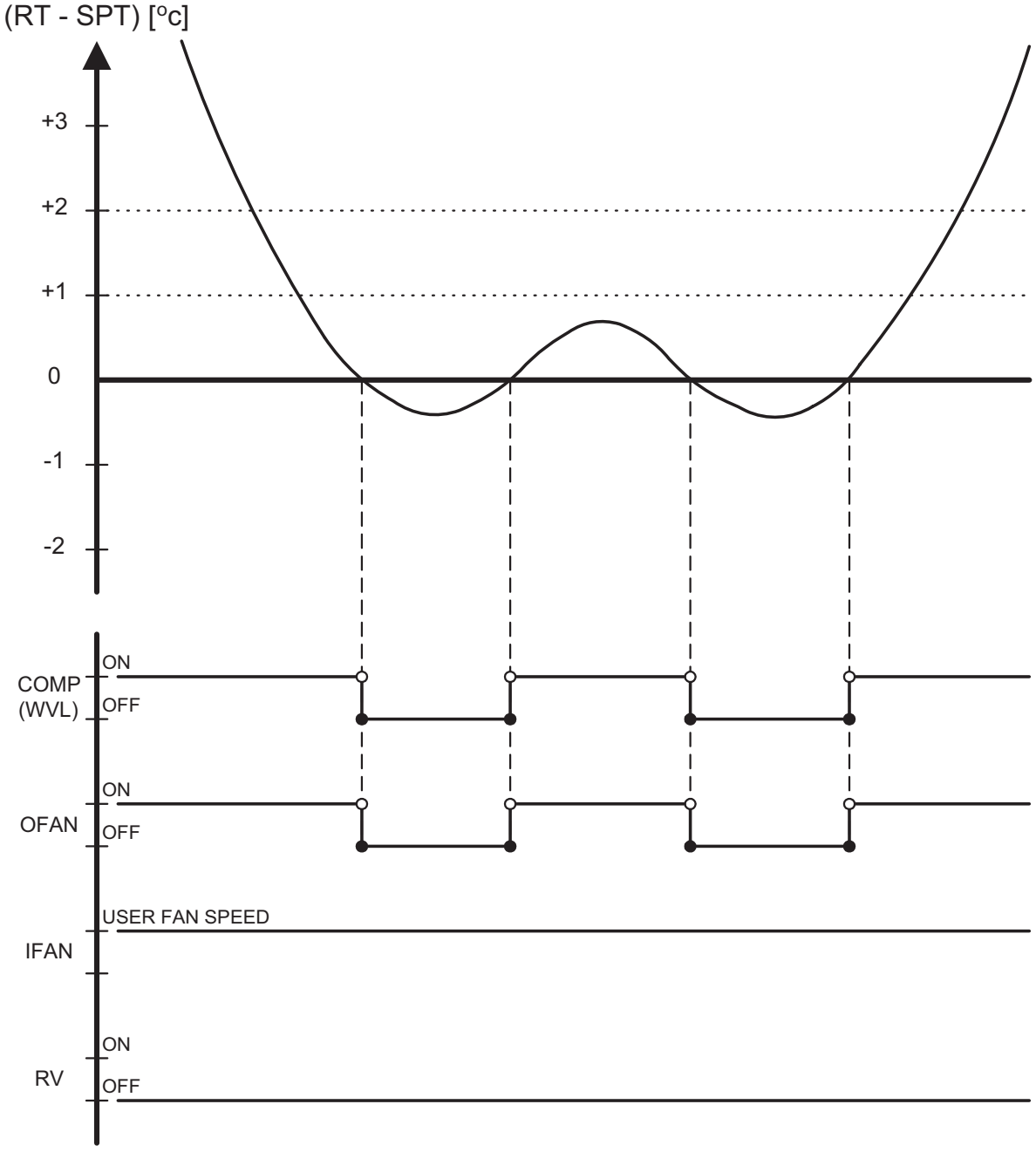
1) Room Temperature, RT, is detected by
   - RAT in normal operation, or
   - RCT (R/C sensor) in I-FEEL mode.
2) The resolution of RT is 1°c.
   - RT is activating COMP/WVL if (RT > SPT), and
   - RT is stopping COMP/WVL if (RT =< SPT).
3) Indoor Coil Temp is detected by ICT (RT2).
4) Outdoor Coil Temp is detected by OCT (RT3).
5) OFAN OPERATIONS
   - OFAN starts together with COMP in general.

12.4.1 Cooling

Mode: Cool, Auto (at Cooling)
Temp: Selected desired temperature.
Fan: HIGH, MED, LOW
Timer: Any
I Feel: On or Off

Control function

Maintains room temp at desired level by comparing RT and SPT.



Note:

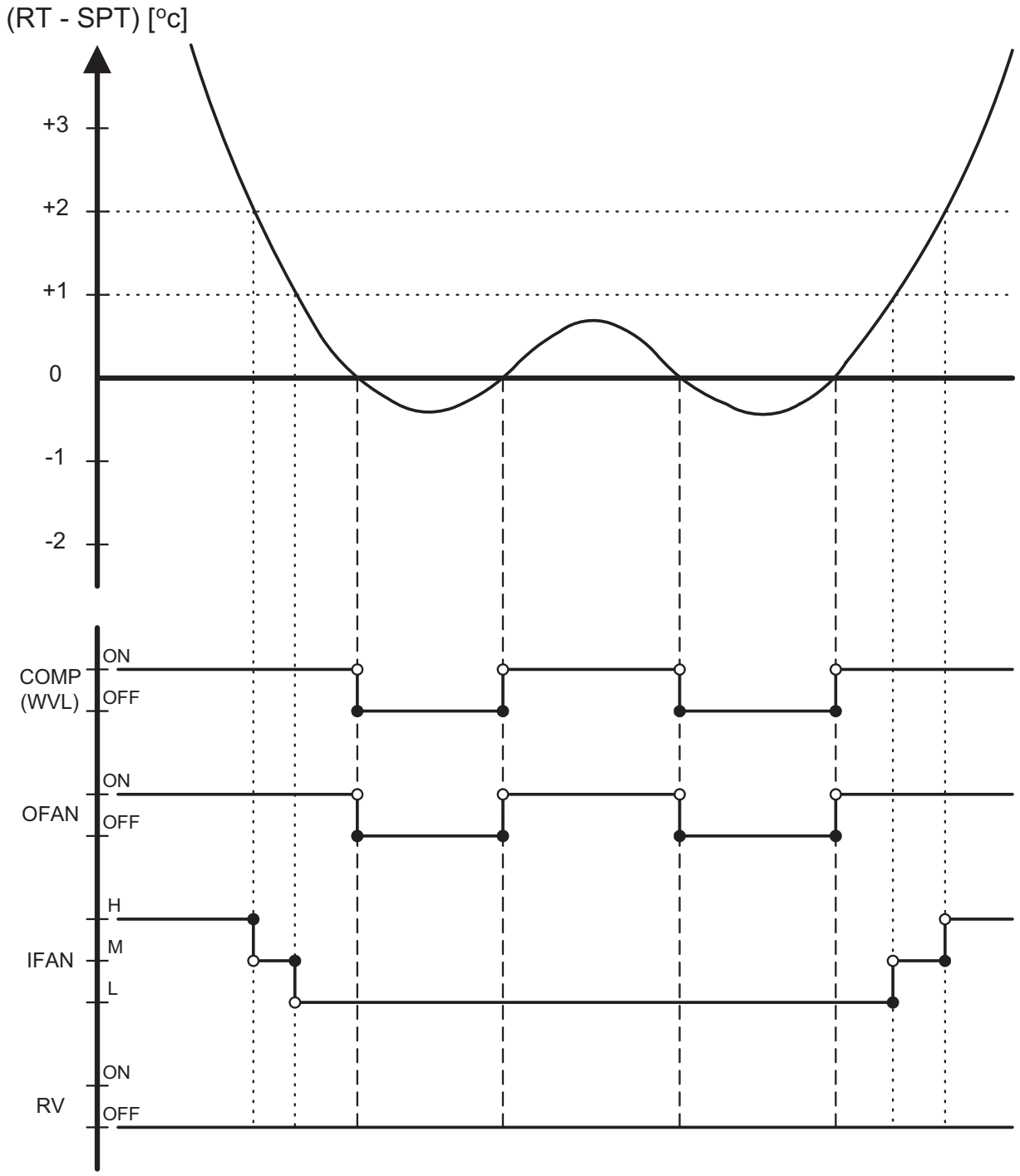
1) IFAN is always running at High, Medium or Low speed selected by user.
2) In IFEEL mode, the Room Temperature (RT) is the RCT from a R/C. Otherwise, the RT is the RAT from the Room Thermistor.

12.4.2 Cooling with Autofan

Mode: Cool, Auto (at cooling)
Temp: Selected desired temperature
Fan: Auto
Timer: Any
I Feel: On or Off

Control function

Maintains room temp at desired level and controls the IFAN speed for optimal comfort.



12.5 Heating Mode

12.5.1 Heating Mode - General

- In heating Mode, temp. compensation schedule will be activated for wall mounted units.

SPT [°c]	Add to SPT	
	I-FEEL ON	I-FEEL OFF
18 ≤ SPT ≤ 27	0 °c	+2 °c
27 < SPT ≤ 30	0 °c	+3 °c

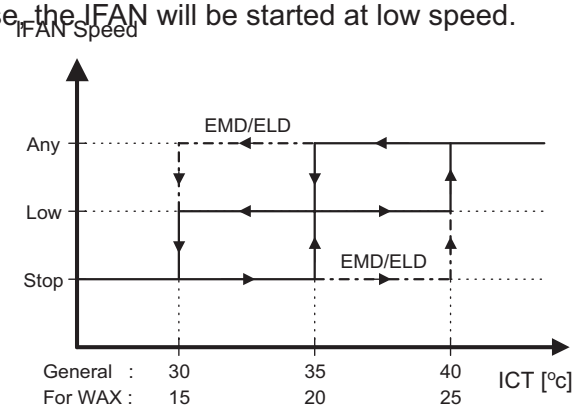
Notes :

- No compensation will be activated in Forced operation modes

12.5.2 IF operating rules

- As a general rule for **RC and SH groups**, when **COMP is ON**, excluding protection modes, IFAN will be switched ON if
- ICT > 35°c or

at the IFTC 30 sec after the COMP is switched ON. In this case, the IFAN will be started at low speed.

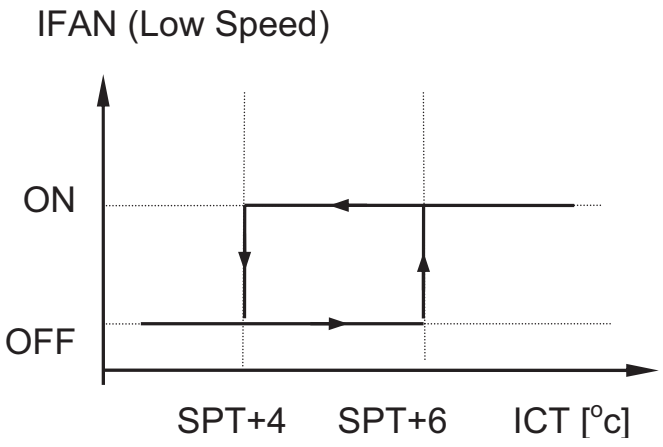


Notes :

1) In **SH or RC group**, if HE is set to OFF due to low ICT, IFAN will be switched to LOW and will be turned OFF after 30 sec.
2) An exception to this rule (4.0.3.a) is the Back-up mode for SH.

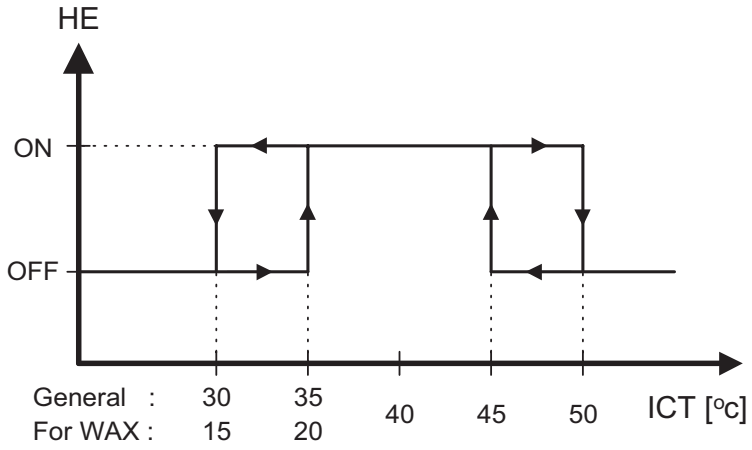
- In **RC and SH groups**, whenever **COMP & HE are both OFF**, excluding protection modes, IFAN operation will be according to the following:

In **other models** IFAN will operate in low speed for 30 sec and then stop. If COMP is OFF for more than 3 minutes and IFEEL Mode is inactive, IFAN will operate in low speed according to the following graph:



12.5.3 HE operation

- For **all Groups**, HE can be ON only when IFAN is ON.
- For **all Groups**, HE switches to OFF when ICT > 50 °c, and is activated again when ICT ≤ 45°c.
- In **SH or RC group**, HE operation is limited by the following graph:



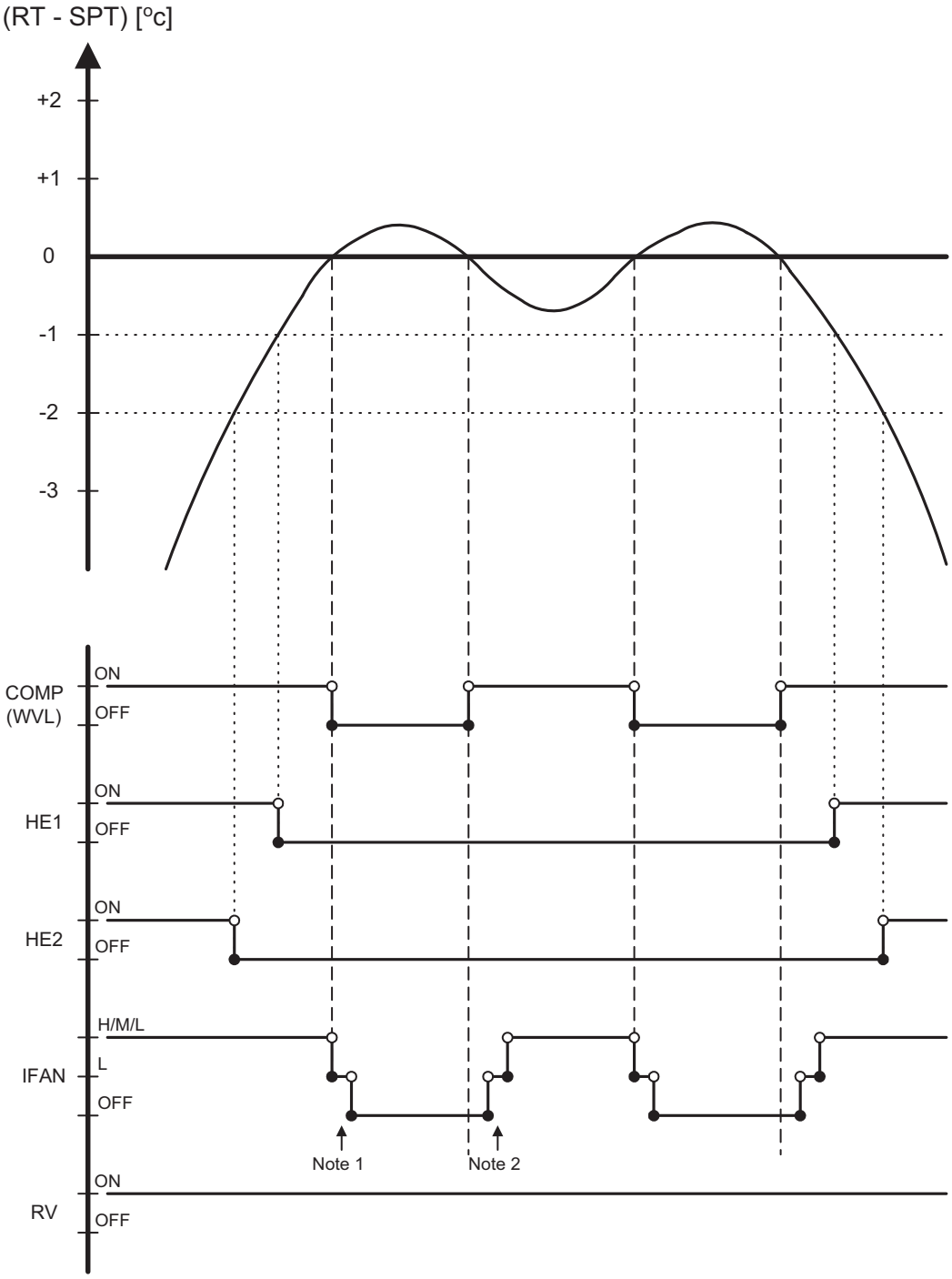
- Back-up mode for **SH group**

After COMP has been working for 5 minutes, HE & IFAN are activated even if the ICT is still below 35°c. This situation is called Back-up Mode. Both HE & IFAN will work in Back-up Mode until the ICT reaches 35°c. Then, the operation goes on in the usual mode .

12.5.4 Heating, RC or SH Group

Mode: Heat, Auto (at heating)
Temp: Selected desired temperature
Fan: HIGH, MED, LOW
Timer: Any
I Feel: On or Off

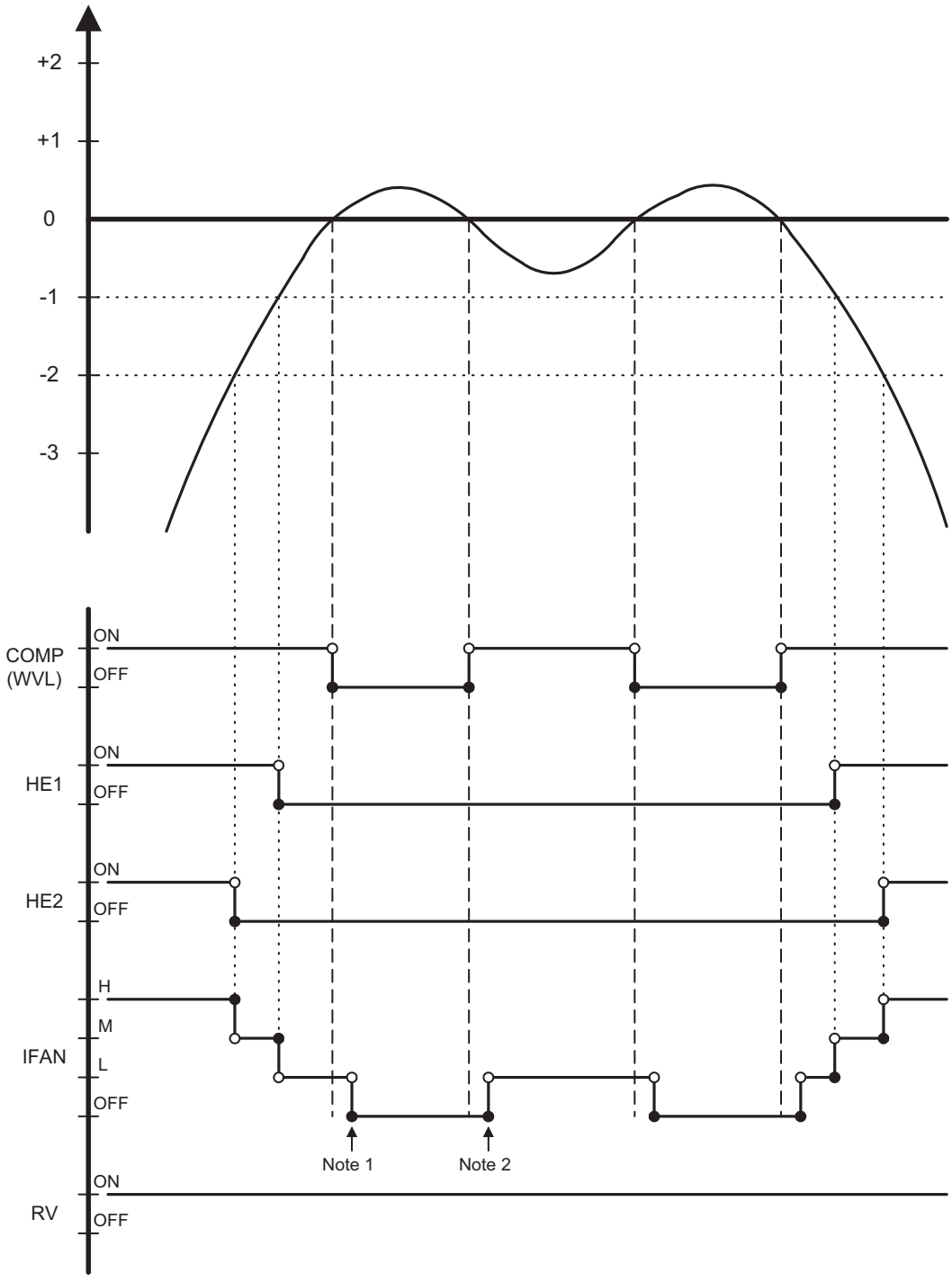
Control function
Maintains room temp. at desired level by comparing RAT or RCT to SPT.



12.5.5 Heating, RC or SH Group with Autofan

Mode: Heat, Auto (at heating)
Temp: Selected desired temperature
Fan: Auto
Timer: Any
I Feel: On or Off

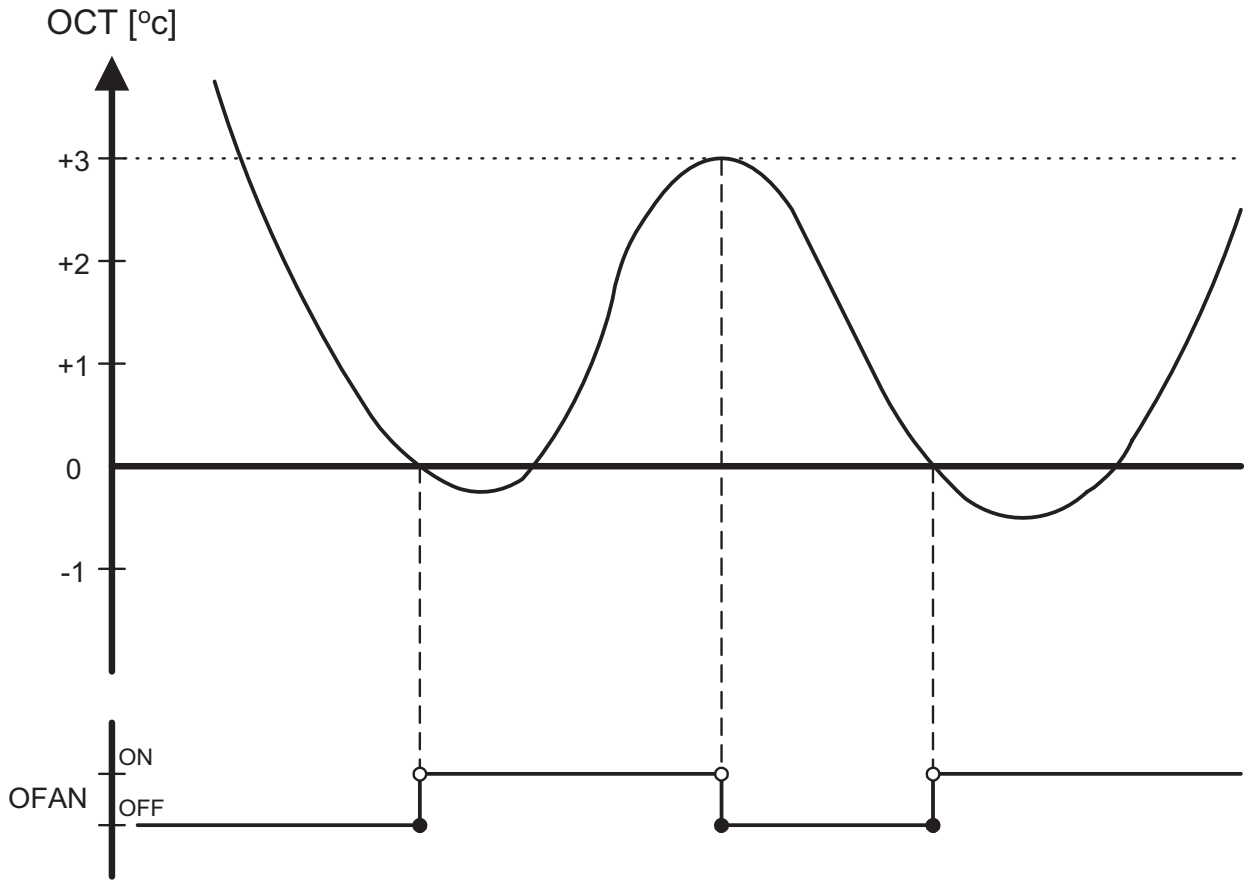
Control function
Maintains room temp at desired level by controlling COMP, IFAN and OFAN.



12.5.6 OFAN operation is controlled by the graph below when

1. (RAT ≥ SPT – 2°c), AND
2. (ICT ≥ 45°c), AND
3. (COMP is ON)

Otherwise, OFAN runs together with COMP.



12.6 Automatic Cooling or Heating

12.6.1 Automatic Cooling or Heating - General

- Switching-temperature between Cooling and Heating is SPT ± 3°c.

- Autofan in Automatic Cooling and Heating Mode will activate “Cooling with Autofan Mode” and “Heating with Autofan Mode” respectively.
- When the Auto Mode is started with SPT +/-0°c, the unit will not select Auto Heat or Auto Cool mode immediately. Instead, the unit will be in a temporary Fan Mode with IFAN operating at low speed.
  The proper Auto Heat mode or Auto Cool will be started whenever the RT reaches SPT-1°c or SPT+1°c respectively.

- For RC & SH units, Mode change between Auto Heat & Auto Cool Modes is possible only after the COMP has been OFF during the last T minutes.

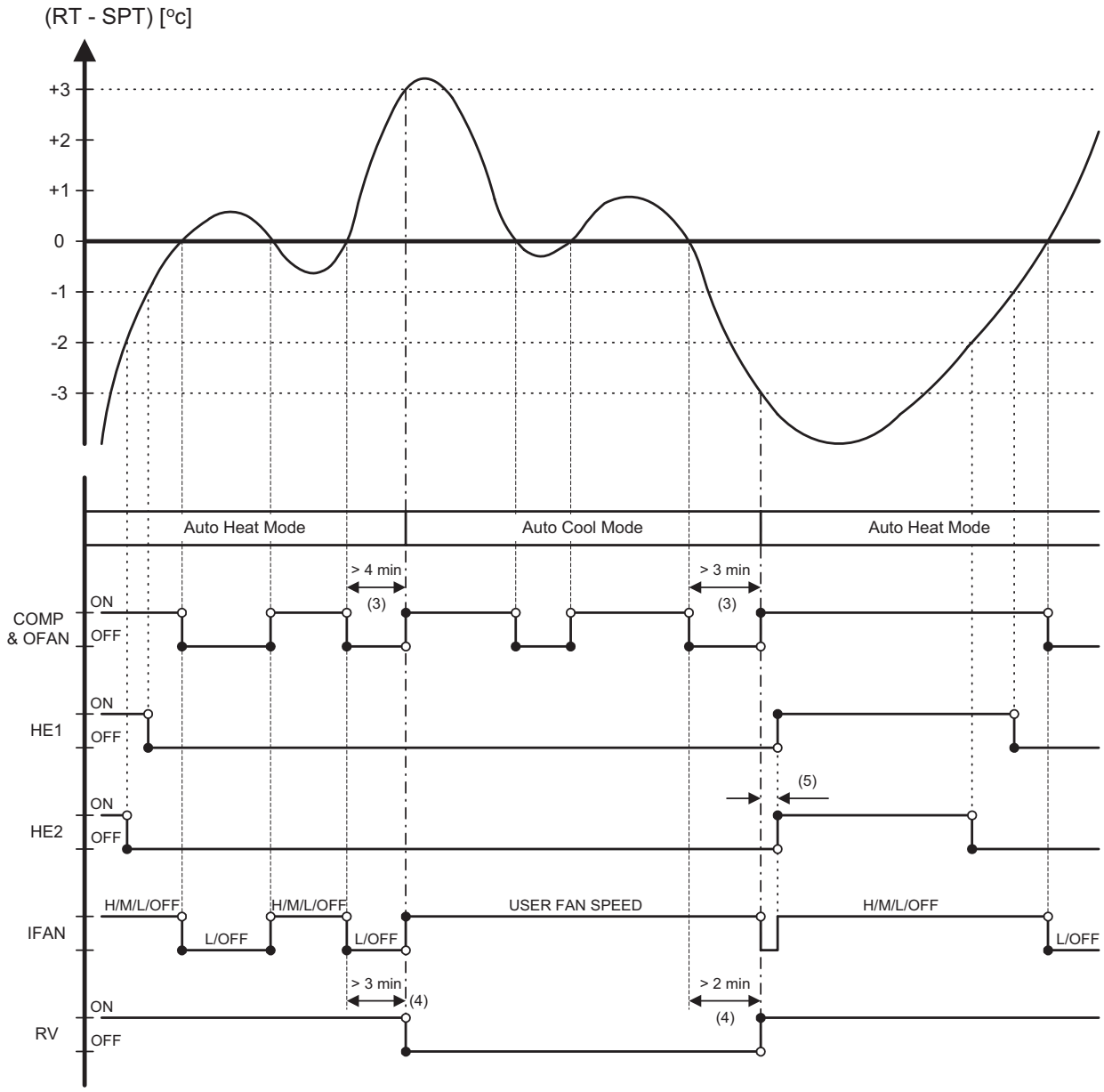
Mode Change	time, T
Auto Cool to Auto Heat	3 min
Auto Heat to Auto Cool	4 min

- When unit is changed form Cool/Dry mode to Auto Mode, the unit will continue to operate at (Auto) Cool Mode until the conditions for switching from Auto Cool to Auto Heat are satisfied.
  Similarly, when unit is changed from Heat Mode to Auto Mode, the unit will continue to operate at (Auto) Heat Mode until the conditions for switching from Auto Heat to Auto Cool are satisfied.

12.6.2 Auto Cooling or Heating, RC or SH Groups

Mode: Auto
Temp: Selected desired temperature
Fan: Any
Timer: Any
I Feel: On or Off

Control function
Maintains room temp at desired level by selecting between cooling and heating modes.



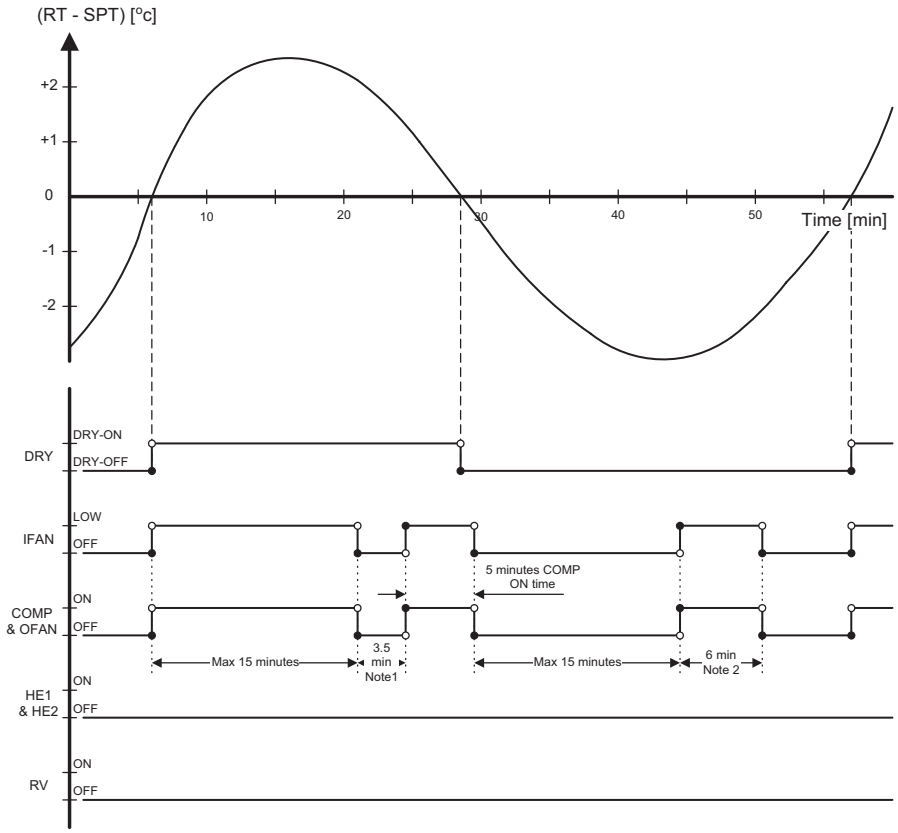
12.7 Dry Mode

12.7.1 Dry, ST or RC group

Mode: Dry
Temp: Selected desired temp
Fan: Low (automatically selected by software)
Timer: Any
I FEEL: Any

Control function

Reduce room humidity with minimum temp. fluctuations by operating in Cool Mode with low speed IFAN.



Notes :

- When Dry is ON, the COMP is forced OFF for 3.5 min (longer than the 3 min Min COMP-Off time) after every 15 min of continuous COMP operation.
- When Dry is OFF, the COMP is forced ON for 6 min (longer than the 3 min Min COMP-On time) after every 15 min of continuous COMP OFF time.
- When Dry is changed from ON to OFF or vice versa, the limits mentioned in (1) & (2) are ignored. The COMP operation is only controlled by the 3 min Min OFF time and 1 min Min ON time.
- In Dry Mode, IFAN is LOW when COMP is ON, and is OFF when COMP is OFF.

12.8 Protection

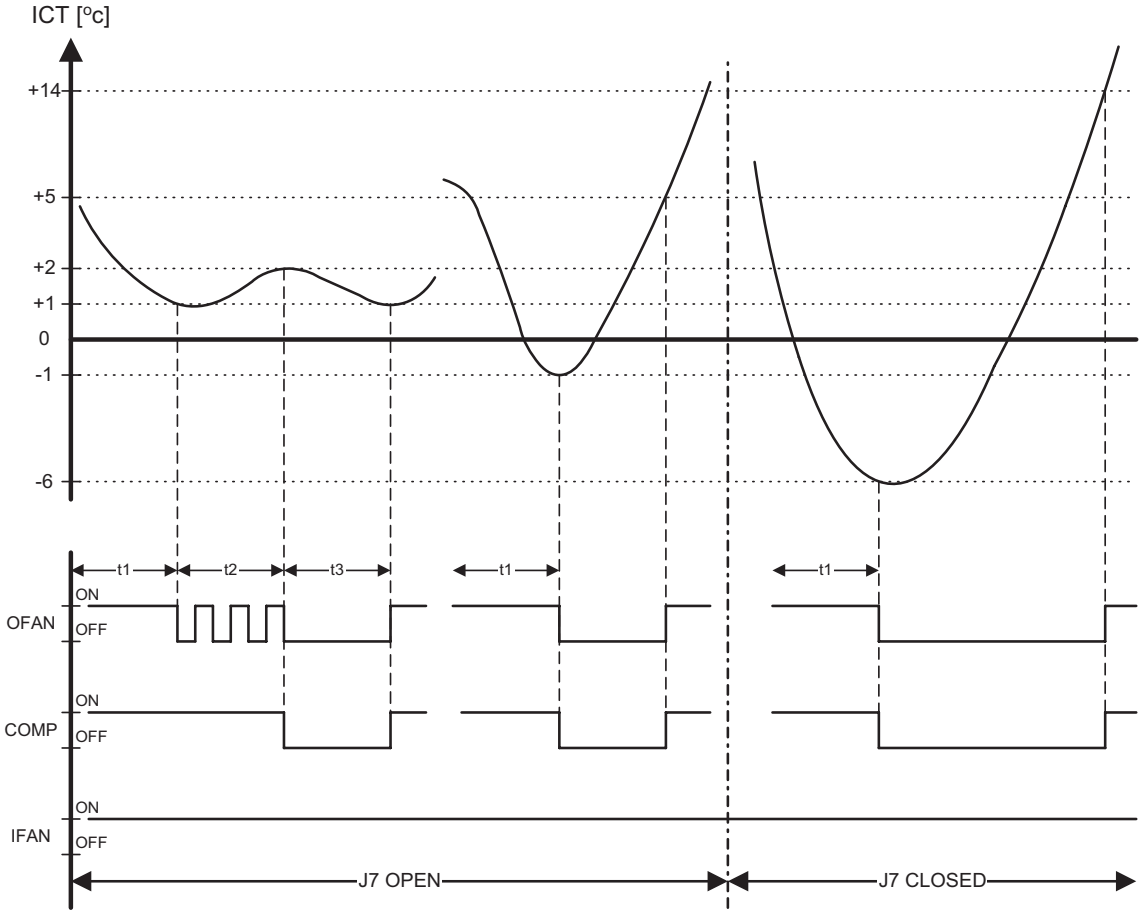
12.8.1 Cooling Mode Protections

Indoor Coil Defrost

Mode: Cooling, Dry, Auto
Temp: Selected desired temp.
Fan: Any
Timer: Any
I Feel: On or Off

Control Function

Protect the indoor coil from ice formation at low ambient temperature.



t1 = 5 min minimum for each COMP starting
t2 = OFAN cycling (alternate between ON and OFF every 30 sec) for 20 min maximum
t3 = COMP and OFAN stop for 10 min minimum

Notes:

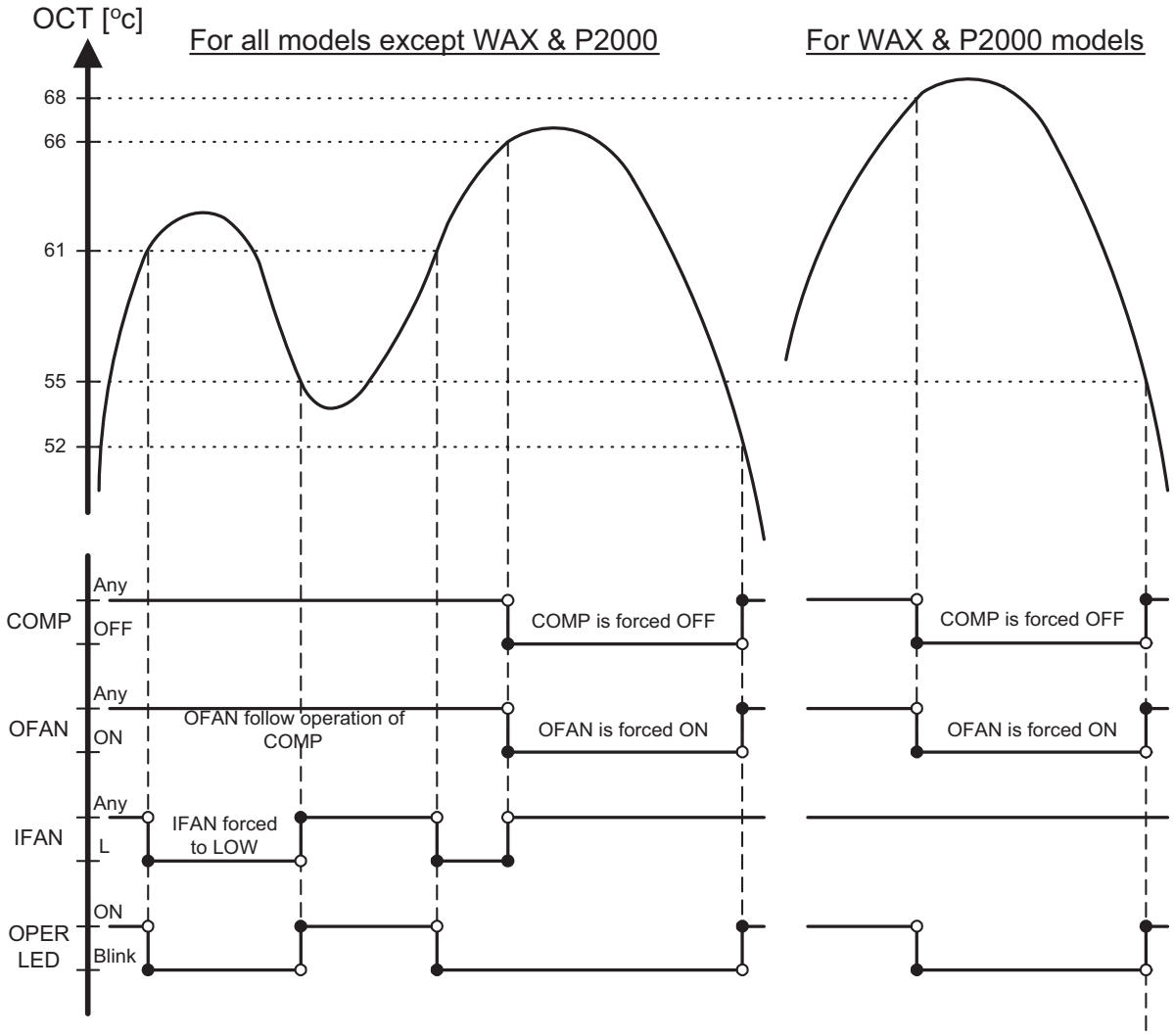
- When J7 is closed (connected), OFAN cycling is cancelled and the set temperature for COMP & OFAN cut-out and cut-in are changed. COMP & OFAN are forced OFF when ICT =< -6°c, and are kept OFF until ICT > 14°c.
- For WAX model, the defrost processes is simpler. When J7 is open, COMP & OFAN are forced OFF when ICT =< -1°c, and are kept OFF until ICT > 5°c. When J7 is closed, the WAX defrosting process is the same as that of the other models (R.H.S. of the graph above). In both cases, the ICT checking in t2 and t3 are not applied.

12.8.2 High Pressure Protection

Mode: (Auto) Cooling or Dry
Temp: Selected desired temp.
Fan: Any
Timer: Any
I Feel: On or Off

Control Function

To protect the COMP from the high pressure built-up in the outdoor coil during normal cooling operation, by switching OFF the IFAN and COMP.



Note:

- The ICT is also monitored during Cool and Dry mode, in case the RV control circuit is faulty. Whenever ICT reaches 70°c, which indicates a high pressure in the indoor coil, the COMP will be forced off automatically. The COMP can be turned on again only after the ICT is under 70°c again and after the 3 min COMP ON delay time. The OPER LED will not blink in this case.

12.8.3 Heating Mode Protections

Outdoor coil Deicing (excluding RH Group)

Mode: Heating, Auto (at heating)
Temp: Selected desired Temp
Fan: Any
Timer: Any
I FEEL: Any

Control function

Protects the Outdoor coil from ice formation by controlling COMP & RV operation.

Scope

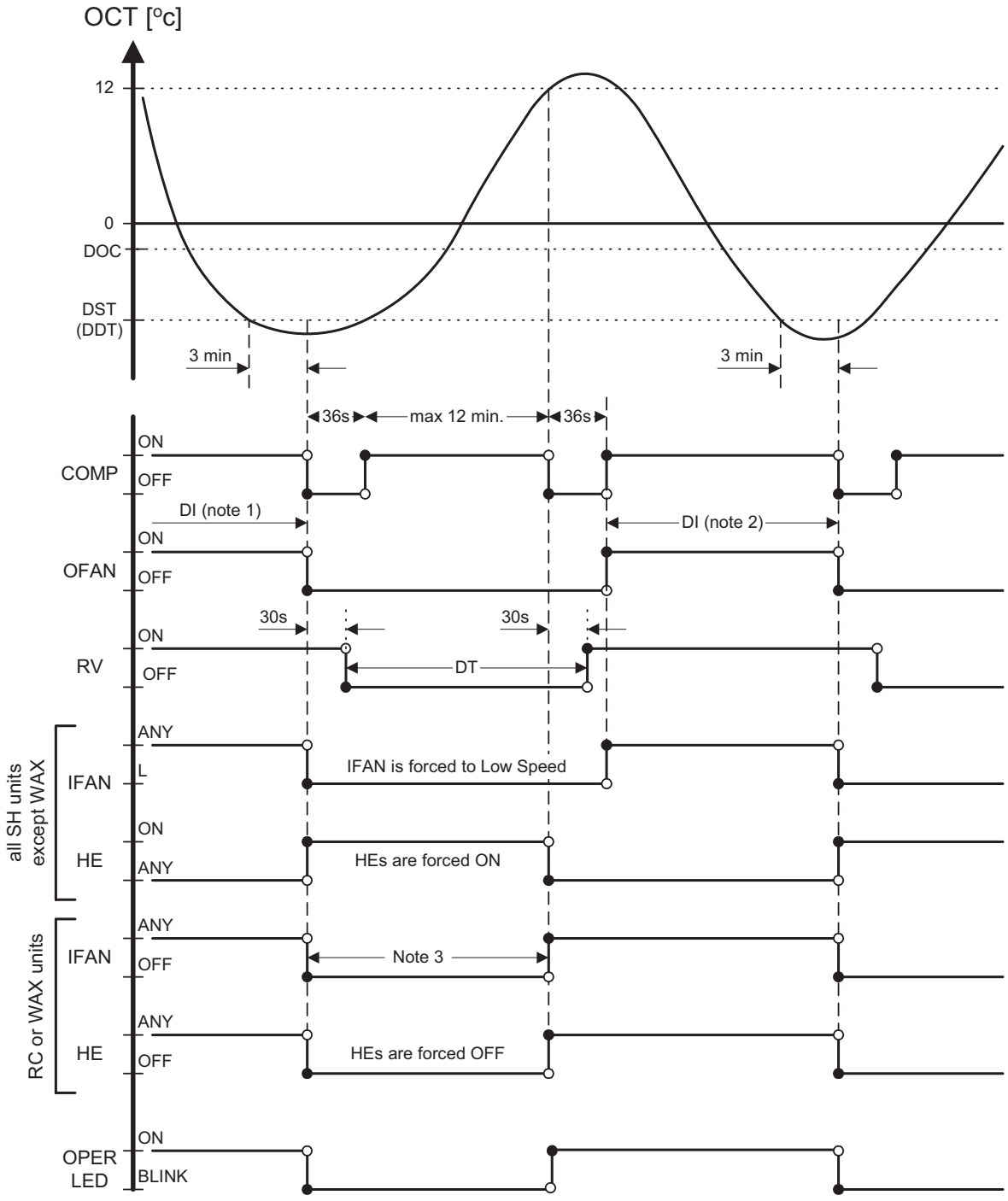
This new deicer is designed to operate at extreme temp conditions. The deicing cycle could be triggered from:

1. OCT temp and time between two consecutive deicing cycles.
2. Detection of ice forming by change of the OCT temp.

Both algorithms adjust the time between deicing cycles to optimize the A/C performance. The algorithm will automatically increase the time between deicing cycles and reduce the deicing cycle as needed.

The algorithm uses EEPROM data to operate.

Deicing procedure



Notes :

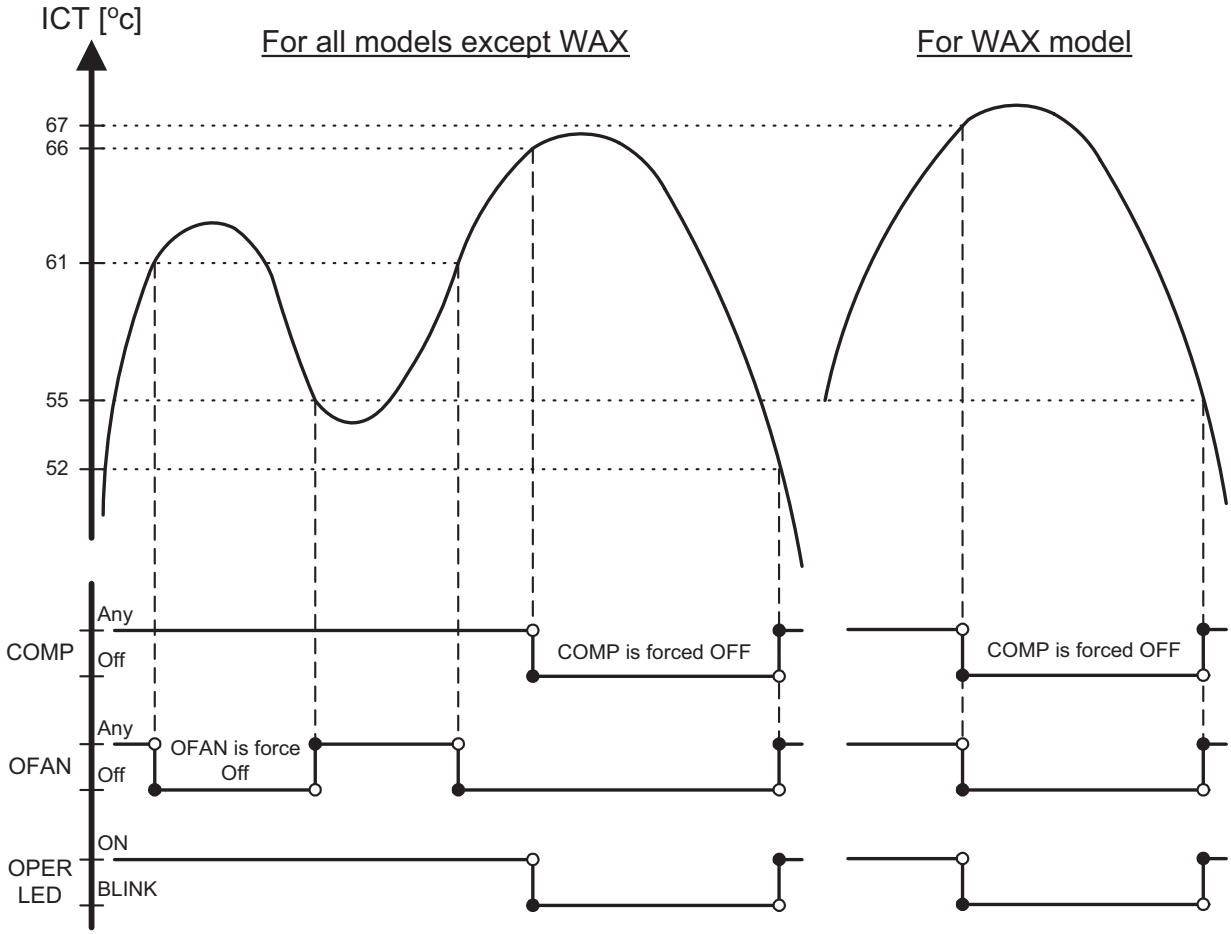
- At the first COMP activation after SB or OFF, if (OCT < 0°c), then DI = 10 min, else DI = 40 min.
- In the following Deicing cycles, the time interval between two Deicing cycles activation is between 30 to 80 min (refer to the flow chart).
- For RC group, HEs are forced OFF. IFAN operation is as in Heat Mode, Sect 4.0.3.a, i.e. IFAN will be set to OFF when ICT<30°c. For WAX, the IFAN is simply forced OFF.
- For SH group, HEs are forced ON and IFAN is forced to operate in Low speed, regardless of the ICT and difference between RAT & SPT.

12.8.4 High pressure protection (excluding RH Group)

Mode: (Auto) Heating
Fan: Any
Timer: Any
I Feel: On or Off

Control Function

Protect the Compressor from high pressure by switching OFF the OFAN and COMP.



Notes:

- IFAN, HE1 and HE2 will be activated according to the relevant Heating Mode Sect.
- In case of any malfunction in the relay control circuit, the OCT is also monitored during heating mode. Whenever OCT reaches 70°c, which indicates a high pressure in the outdoor coil, the COMP will be forced off automatically. The COMP can be turned on again only after the 3 min COMP ON delay and the OCT is under 70°c. The OPER LED will not blink in this case.

12.9 Timer

Mode: Any
Temp. Selected desired temp
Fan: Any
Timer: Timer On, Timer Off
I Feel: On or Off

Control function

- Starts or stops the unit operation after pre-set time. If RC-1 is used, the timer setting will be (0.5 - 24 Hr) from the moment the timer is set. The minimum resolution is 30 minutes.

  If RC-2 or later version of remote controls is used, the timer setting will be (0:00 - 23:50) real time with 10 minutes resolution.

- After power failure, all pre-set timers are cleared. The system is forced to STBY mode and the Timer LED indicator is blinked to indicate the situation. The LED keeps blinking until the timer settings can be reloaded from a R/C message.

  Note: If all timers are inactive, the system will not be forced OFF after the power failure. The last OPER/STBY status will be loaded from the EEP instead.

- When the A/C receives any valid message from a R/C, the current ON/OFF timer settings will be replaced by the new timer settings in the R/C message.

  Note: The following timer related operations will not affect the A/C operating mode (Heat/Cool/Auto/Dry/Fan) setting.

  - Set ON/OFF timer
  - Clear ON/OFF timer
  - R/C ON Timer is time-up
  - R/C OFF Timer is time-up

E.g. When a STBY A/C unit (with Cool Mode setting in its EEP) is turned on by the ON-TIMER of a R/C with heat mode setting, the A/C will start in Cool Mode.

12.10 Forced Operation

Forced operation allows units to start, stop and operate in Cooling or Heating in pre-set temperature according to the following table:

Forced operation mode	Pre-set Temp for : WMZ, WMF,WNG models
Cooling	22°C
Heating	28°C

Note:

- While under the forced operation, the temperature compensation schedule.
- The forced operation is activated when the mode button on the Display Board is used to switch the unit to Cool or Heat mode.
- The IFAN is always set to Autofan Speed in forced operation.

12.11 Sleep Mode

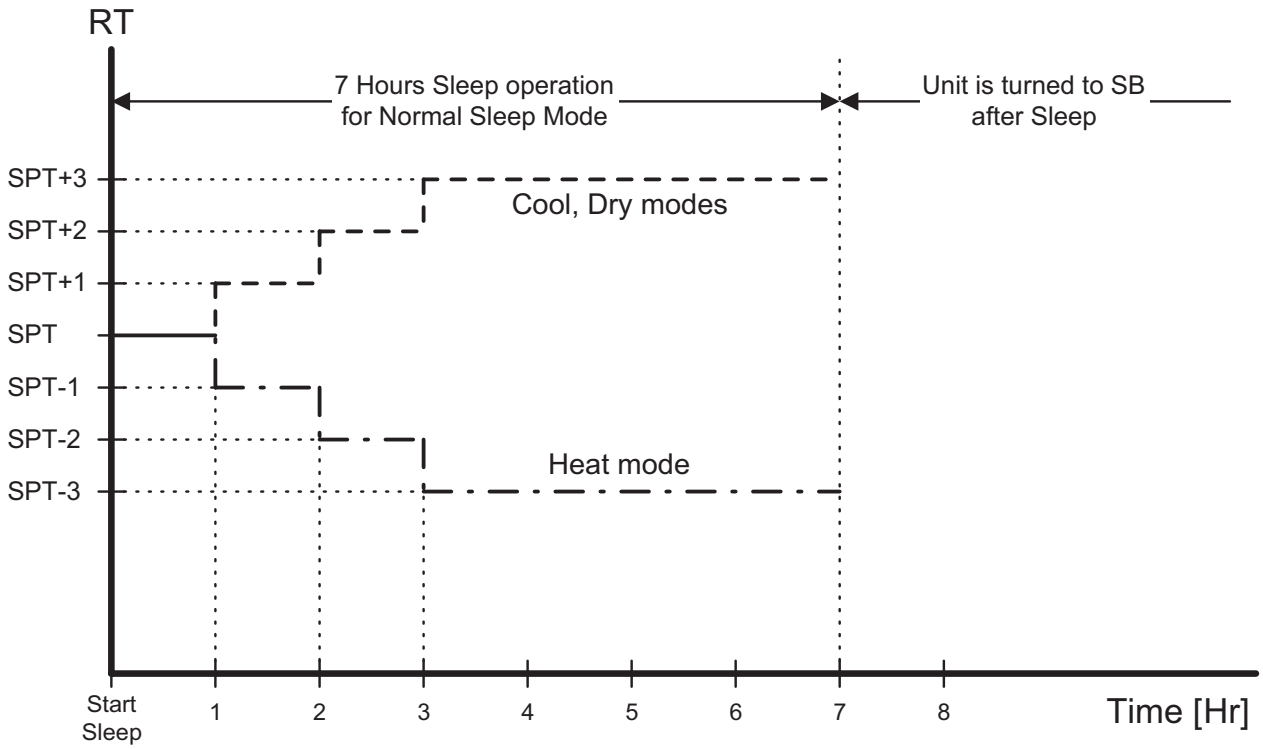
Mode: Any
Temp: Set – desired temperature selected
Fan: Any
Timer: Interact with Sleep Timer as described in sect 12.2
I Feel: On or Off

The Sleep mode is activated by using the sleep button on the R/C. In Sleep Mode, the unit will automatically adjust the SPT to turn up/down the room temperature (RT) gradually to provide maximum comfort to the user in sleep.

Sleep is treated as TIMER function. Therefore, the TIMER LED is activated similar to TIMER function.

12.11.1 Adjustment in Sleep Mode

1. in cool, auto cool or dry modes, the SPT adjustment is positive (from 0 to +3°c).
2. In heat or auto heat modes, the SPT adjustment is negative (from 0 to -3°c).
3. In other modes, there is no SPT adjustment.
4. The SPT adjustment is cancelled when the Sleep mode is cancelled.



Note: If Off-timer is active, the unit may go to SB before or after 7 hours of sleep operation.

12.11.2 Time adjustment in Sleep Mode

The user can make use of the Off-Timer to extend the Sleep Time from 7 hours to 12 hour (max). The operation of the new “Extended Sleep Mode” is illustrated by the graphs below.

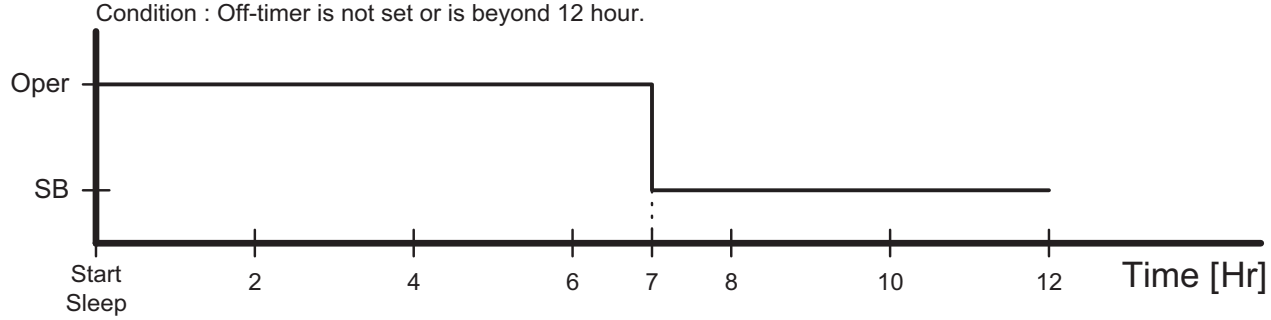
Case 1 is the Standard Sleep Mode, which is the only sleep mode in previous version of MCU. The A/C unit simply works for 7 hours, then goes to SB.

Case 2 is the new Extended Sleep Mode. If an active Off-Timer is set to turn off the A/C between 7-12 hour, relative to the starting of Sleep, the Sleep time is extended.

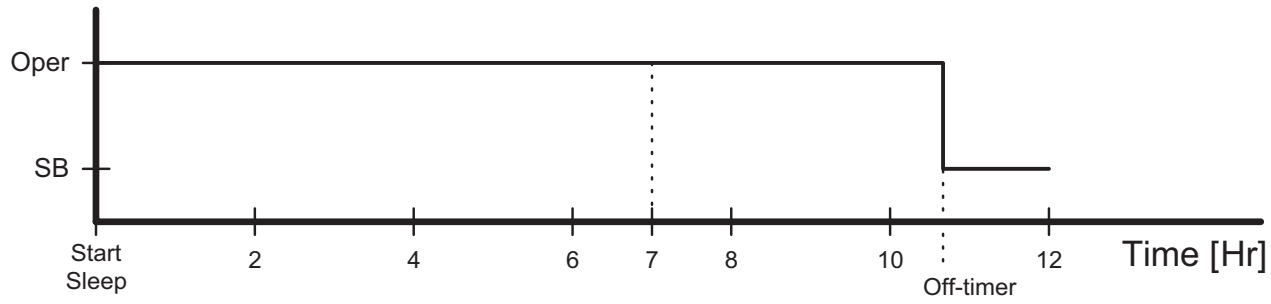
And, instead of going to SB at the 7th hour, the A/C will work until reaching the Off-time.

Case 3 is an exception to case 2. The Sleep Mode will not be extended to the Off-Time when the Off-Timer is preceded by an On-Timer, which is also between 7-12 hour.

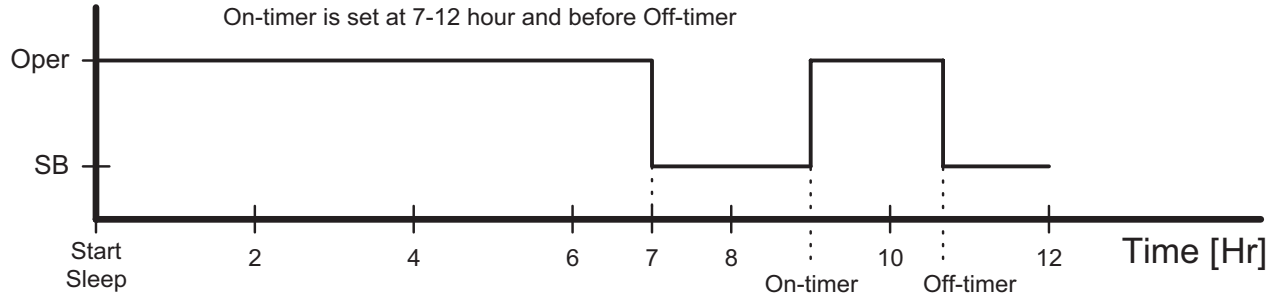
<u>Case 1 : Standard Sleep Mode</u>
Condition : Off-timer is not set or is beyond 12 hour.



<u>Case 2 : Extended Sleep Mode</u>
Condition : Off-timer is set at 7-12 hour.

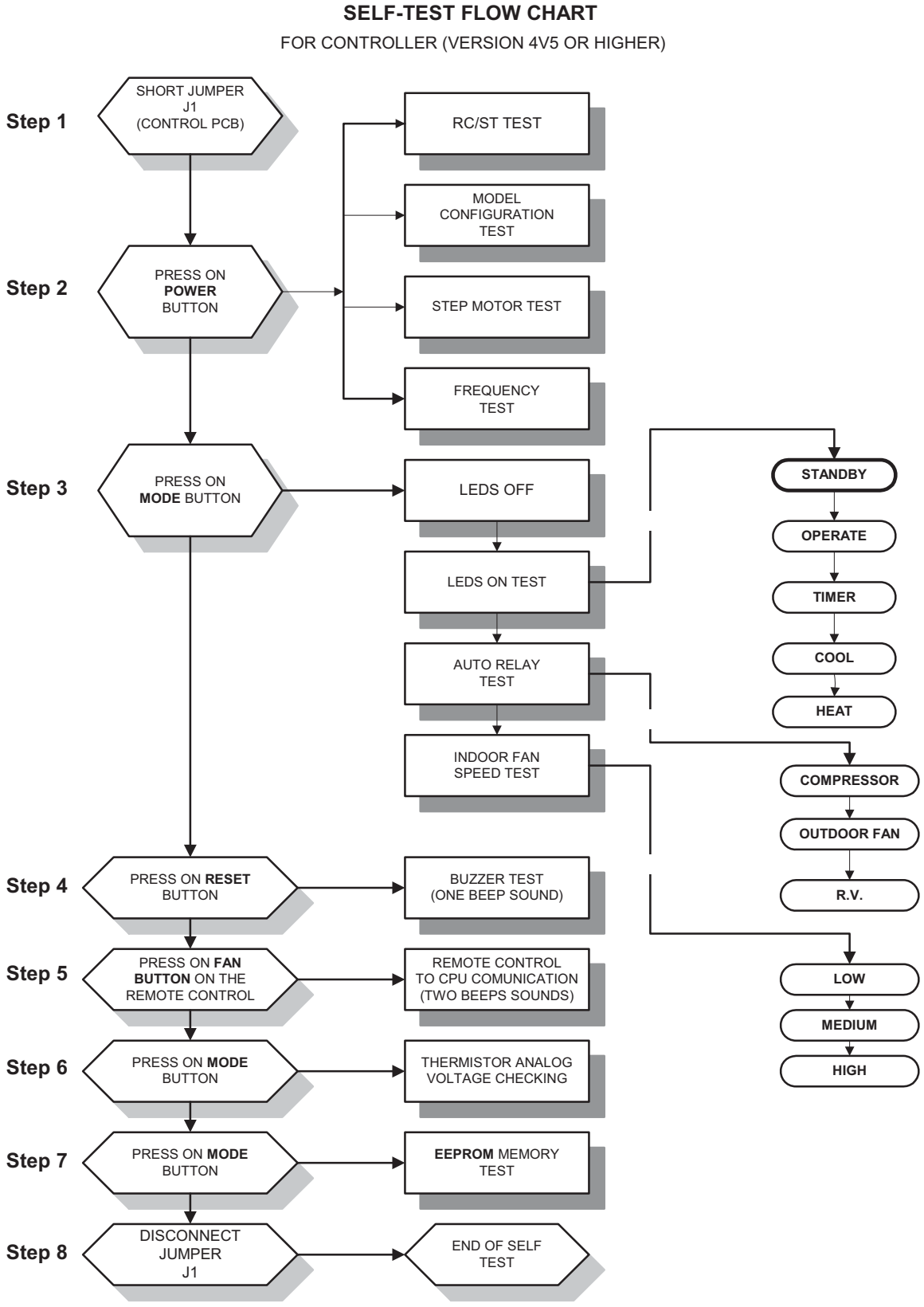


<u>Case 3 : Exception to Case 2</u>
Condition : Off-timer is set at 7-12 hour
On-timer is set at 7-12 hour and before Off-timer



12.12 Controller Self-Test Procedure

12.12.1 By Shorting Test Jumper J1



12.12.2 By Remote Control Settings:

a. 1: TURNING ON THE POWER.
Turn ON the power, make sure that the unit is in operation.

b. STEP 2 : ENABLE SELF-TEST MODE

- Use the remote control to send the first settings to display / indoor unit HEAT mode, HIGH IFAN, set temperature to 16 ºC**,** no I-FEEL Sleep or any other timer settings are needed.
- Cover the IR transmitter components in the remote control so that it will not transmit the signals to the indoor unit display.
- Use the remote control to send the second settings to display / indoor unit COOL mode, LOW IFAN, no I-FEEL Sleep or any other timer settings.
- Uncover the remote control IR transmitter and change the temperature settings. If the display/indoor unit receive the settings properly the following steps will start:

c. STEP 3: MODEL SETTING CONFIRMATION

- The STAND-BY and COOL LEDS will indicate the operation mode as follows:

OPERATION MODE	STAND-BY LED	COOL LED
ST	ON	OFF
RC	OFF	OFF
SH	OFF	ON
RH	ON	ON

- Testing the Model configuration. Selected by the COMP, STAND-BY, TIMER LEDS and FILTER will indicate the model configuration as follows (the relevant line for this manual is highlighted):

MODEL	COMP	OPERATE LED	TIMER LED	FILTER LED
WNG	ON	OFF	OFF	OFF
WMZ	ON	ON	OFF	ON
WMN4	OFF	OFF	ON	OFF
WMN2/WHX	OFF	ON	OFF	ON
WMN3	OFF	ON	ON	ON

In this term the step motor will turn to HOME POSITION.

d. STEP 4 : AUTO LED WALK TEST.

- All the LEDS will turn OFF.
- All the LEDS will turn ON for 1 second one by one in the following sequence:

  STAND-BY ⇨ OPERATE ⇨ TIMER ⇨ FILTER ⇨ COOL ⇨ HEAT.
- In PRX all the LEDS will turn ON for 1 second one by one in the following sequence : 18 °c ⇨ 20 °c ⇨ 22 °c ⇨ 24 °c ⇨ 26 °c ⇨ 28 °c ⇨ 30 °c ⇨ High IFAN ⇨ Auto IFAN ⇨ Med IFAN ⇨ Low IFAN ⇨ STAND-BY⇨ TIMER ⇨ FILTER ⇨COOL⇨ HEAT.

e. STEP 5: AUTO REALY WALK TEST:

- All relays will energize one by one in the following sequence:

COMPRESSOR ⇨ OUTDOOR FAN⇨R. V. ⇨ HEATER 1 ⇨ HEATER 2 ⇨ INDOOR WATER PUMP ⇨ SWING or OUTDOOR WATER PUMP ⇨ INDOOR FAN: LOW ⇨ MID ⇨ HIGH.

- When the relay walk test is completed, the next test will start automatically.

f. STEP 6: FREQUENCY TESTING:

- If the frequency measuring process fails the COOL LED will turn ON. In order to move to the next step, press ON/OFF button on the remote control.

g. STEP 7: INPUT TEST.

- The test purpose is to check the analog real time indicators (thermistors, LEVEL and clock) according to the table below.

LED Indicator	Condition for LED to be ON
STBY LED	Room thermistor ≠ 25°c
OPER LED	Indoor coil thermistor ≠ 25°c
TIMER LED	Outdoor coil thermistor ≠ 25°c
FILTER LED	Clock
COOL LED	LEVEL 2&3
HEAT LED	LEVEL 4

h. STEP 8: TIMING RESET TEST (WATCH DOG).

- The test purpose is to verify that the CPU rise time after power failure is between 1 to 3 sec, test results are indicated on the LEDS : STAND-BY,OPER, TIMER and FILTER turning ON one by one.
- The results of the test are coded as follows:

  Pass condition:

  1 sec - STAND-BY and OPER are turned ON

  2 sec - STAND-BY, OPER and TIMER are turned ON

Fail condition:

0 sec - STAND-BY is turned ON

3 sec - STAND-BY, OPER, TIMER and FILTER are turned ON

- When the timing reset test is completed, the next test will start automatically.

i. STEP 9: MEMORY TEST (EEPROM)

- The test purpose is to check if the memory is functioning correctly. The test result is reported by using the STAND-BY and FILTER LEDS:

LED Indicator	Condition for LED to be ON
STAND-BY LED	Test passed
FILTER LED	Test failed

AT THIS POINT THE SELF-TEST IS COMPLETED.
In order to terminate Self-Test mode the User can change the unit setting from COOL Mode, LOW FAN to COOL Mode, MED FAN or to wait without using the remote control for 60 sec.

Values of Sensors Temperature VS. Voltage (DC)

Temp. (*C)	Voltage (V)	Temp. (*C)	Voltage (V)	Temp. (*C)	Voltage (V)	Temp. (*C)	Voltage (V)
-20	4.554	2	3.744	24	2.555	46	1.487
-19	4.529	3	3.695	25	2.5	47	1.447
-18	4.502	4	3.646	26	2.445	48	1.409
-17	4.475	5	3.595	27	2.391	49	1.371
-16	4.446	6	3.544	28	2.338	50	1.334
-15	4.417	7	3.492	29	2.284	51	1.298
-14	4.386	8	3.439	30	2.232	52	1.263
-13	4.354	9	3.386	31	2.18	53	1.228
-12	4.322	10	3.332	32	2.128	54	1.195
-11	4.287	11	3.278	33	2.077	55	1.162
-10	4.252	12	3.223	34	2.027	56	1.13
9	4.216	13	3.168	35	1.978	57	1.099
-8	4.178	14	3.113	36	1.929	58	1.069
-7	4.14	15	3.058	37	1.881	59	1.04
-6	4.1	16	3.002	38	1.834	60	1.011
-5	4.059	17	2.946	39	1.798	61	0.983
-4	4.017	18	2.89	40	1.742	62	0.956
-3	3.974	19	2.833	41	1.698	63	0.929
-2	3.93	20	2.777	42	1.654	64	0.904
-1	3.885	21	2.722	43	1.611	65	0.879
0	3.839	22	2.666	44	1.569	66	0.854
1	3.792	23	2.61	45	1.527	67	0.831

12.13 On Unit Indicators and Controls

STAND BY INDICATOR	Lights up when the Air Conditioner is connected to power and ready to receive the R/C commands Blinks continuously in case of any thermistor failure.
OPERATION INDICATOR	Lights up during operation. Blinks for 300 ms, to announce that a R/C infrared signal has been received and stored. Blinks continuously during • OCT High Pressure Protection Mode • ICT High Pressure Protection Mode • Deicing in Heating Mode • Water Over Flow in ECC Model
MODE BUTTON (Cool, Heat, SB)	Use to cycle the operation mode of the A/C unit among COOL, HEAT and SB modes, without using the R/C. Every time this switch is pressed, the next operation mode is selected, in this order : SB ➔ Cool Mode ➔ Heat Mode ➔ SB ➔ ... Press this button continuously for 5 sec or more to start the Diagnostic Mode.

12.14 Clock Random Delay From 0 to 2.5 seconds

0 = Clock Switch Open
1 = Clock Switch close

The Clock is activate according to the following table:

A/C STATE (before clock is changed)	CLOCK STATE (before clock is changed)	CLOCK ACTION (clock is changed)	A/C NEW STATE (after clock is changed)
ON	1	0	OFF
OFF	0	1	ON
OFF by interrupt (1)	1	0	OFF
ON by interrupt (1)	0	1	ON

Notes :

1. Clock can be interrupted by :
   - R/C - POWER ON/OFF Push-button.
   - R/C - TIMER.
   - R/C - SLEEP.
   - A/C - MODE SWITCH.
2. Any change in the CLOCK level during the first 6 sec after the system Reset is ignored.

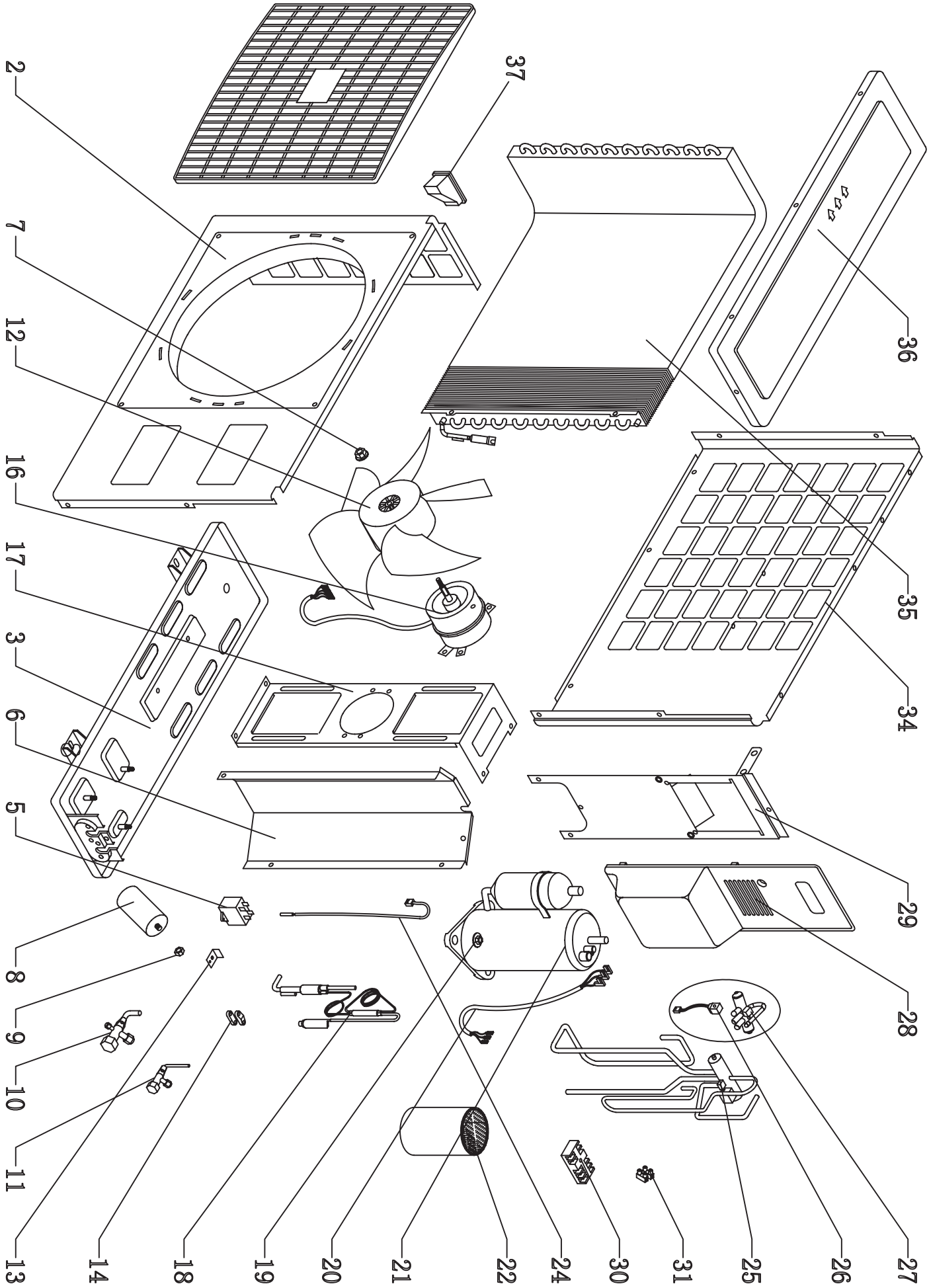
13. TROUBLESHOOTING

NO	SYMPTON	PROBABLE CAUSE	CORRECTIVE ACTION
1.	The stand-by indicator (red led) on the central control display panel doesn't light up.	There is no correct voltage between the line and neutral terminals on main P.C.B	-If the voltage is low repair power supply. -If there is no voltage repair general wiring. -If there is correct voltage replace main or display P.C.B'S
2.	The operation indicator (green led) on the central control display panel does not light up.	The remote control batteries are discharged	-Replace batteries of the remote control.
3.	The operation indicator (green led) does not light up when starting from unit.	Check main P.C.B and display P.C.B	-Replace P.C.B if necessary.
4.	The indoor fan does not function correctly.	Check the voltage between indoor fan terminals on the main P.C.B	-If there is voltage replace capacitor or motor.
5.	The outdoor fan does not function correctly.	Check the voltage between out door fan terminals on the main P.C.B There is voltage between outdoor fan terminals on the outdoor unit. There is no voltage between outdoor fan terminals on the outdoor unit.	-If there is no voltage replace main P.C.B -Replace capacitor or motor. -Check and repair electrical wiring between indoor and outdoor units.
6.	The compressor does not start up.	Check voltage on compressor terminals on the outdoor unit. (with ammeter) Check if there is correct voltage between compressor terminals on the outdoor unit.	-If no voltage replace main P.C.B -If low voltage repair power supply. -If the voltage correct replace capacitor or compressor. -If there is no voltage repair electrical wiring between indoor and outdoor units.
7.	The refrigeration system does not function correctly.	Check for leaks or restrictions. With ammeter. Pressure gauge or surface thermometer.	-Repair refrigeration system and charge refrigerant if necessary.

NO	SYMPTON	PROBABLE CAUSE	CORRECTIVE ACTION
8	No cooling or heating only indoor fan works.	Outdoor fan motor faulty or other fault caused, compressor overload protection cut out.	-Replace P.C.B. -Outdoor fan blocked remove obstructions.
9.	Only indoor fan and compressor working.	Outdoor fan blocked.	-Remove obstructions.
10.	Only indoor fan working.	-Run capacitor of outdoor fan motor faulty. -Windings of outdoor fan are shorted.	-Replace capacitor. -Replace motor.
11.	No cooling or heating takes place, indoor fans working.	-Overload safety device on compressor is cut out (low voltage or high temperature). -Compressor runs capacitor faulty. -Compressor windings are shorted.	-Check for proper voltage, switch off power and try again after one hour. -Replace compressor capacitor. -Replace compressor.
12.	No air supply at indoor unit, compressor operates.	-Indoor fan motor is blocked or turns slowly. -Indoor fan run capacitor faulty. -Motor windings are shorted.	-Check voltage, repair wiring if necessary. -Check fan wheel if it is tight enough on motor shaft, tighten if necessary.
13.	Partial, limited air supply at indoor unit.	Lack of refrigerant (will accompanied by whistling noise) cause ice formation on indoor unit coil in cooling mode.	-charge the unit after localizing leak.
14.	Water accumulates and over flow from indoor unit section.	Drain tube or spout of drain pan clogged.	-Disassemble plastic drain tube from spout of indoor unit drain pan.
15.	Water dripping from outdoor unit base, (in heating mode).	Water drain outlet is clogged.	-Open outdoor unit cover clean out water outlet clean the base inside thoroughly.
16.	Freeze-up of outdoor coil in heating mode, poor heating effect in room, indoor fan operates.	-Faulty outdoor thermistor. -Faulty control cable. -Outdoor temperature is below design conditions. -Outdoor unit air outlet is blocked.	-Replace thermistor. -Repair control cable. -Shut unit off, it cannot work properly. -Remove obstructions.
17.	Unit is in heat mode but operating in cooling.	-Faulty RV coil. -RV coil is ok valve is stuck position.	-Replace RV coil. -Replace the reversing valve.

14. EXPLODED VIEWS AND SPARE PARTS LISTS

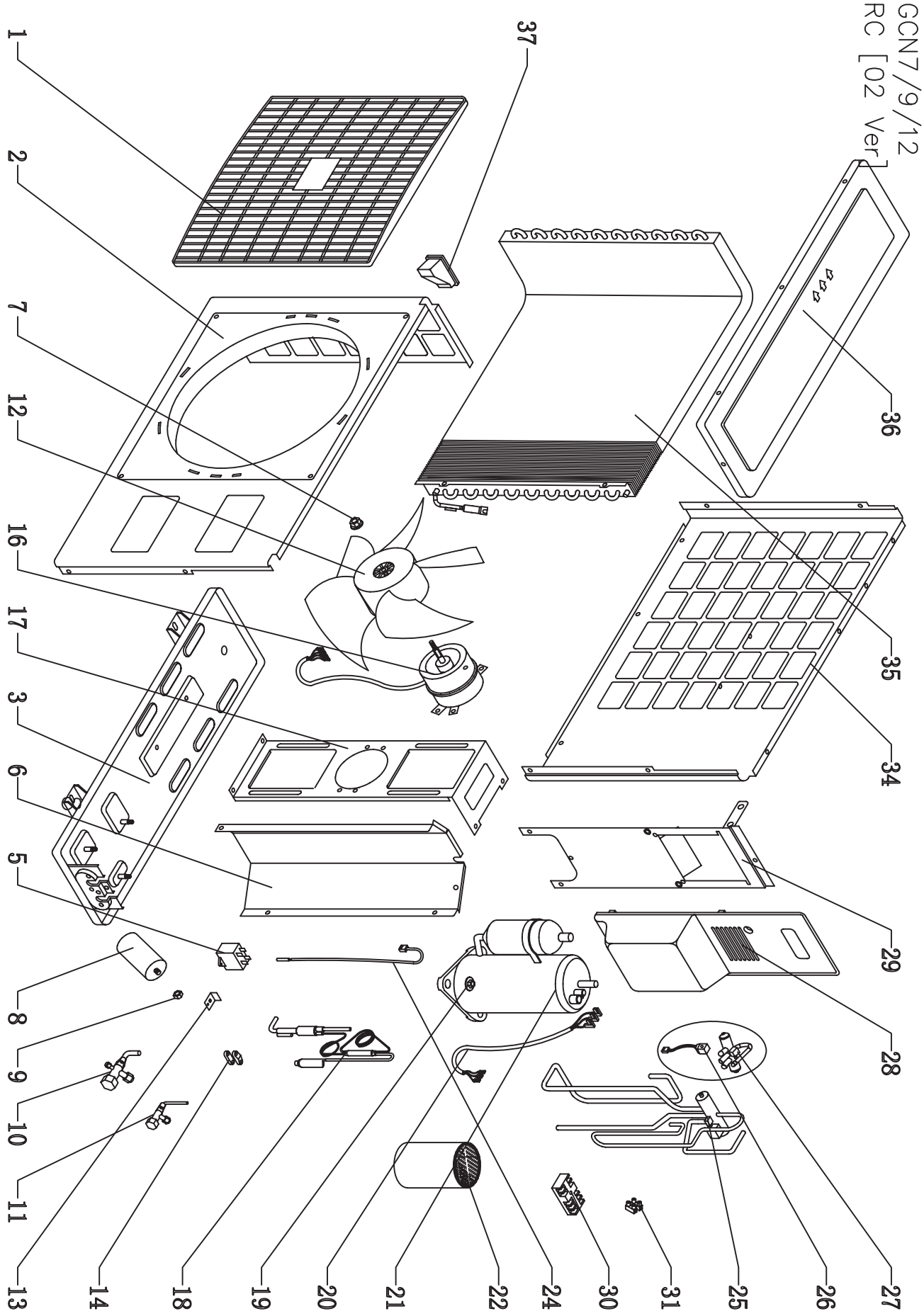
14.1 Outdoor unit : GCN 9 RC



14.1 Outdoor unit : GCN 9 RC

No.	Item	Description	Quan.
1	4522551	Grille A of GCN	1
2	4523441	Front panel A Painting assy	1
3	464600053	Painting Base ASSY.	1
5	455000108	Double patch Capacitor for fan motor 2uF	1
6	464160018	Partition plate/GCZ 9/12	1
7	4519300	Nut M5 L	1
8	455000503	Compressor Capacitor With Screw 30uF (CBB65)	1
9	201019	Nut M8	1
10	461000017	Liquid Valve 1/4″ R22	1
11	461010025	Gas Valve 3/8″ R22	1
12	4519251	Axial Fan OD=400	1
13	4518022	Cap. Clip	1
14	204107	Cable clip Nylon	1
16	4522765R	Motor of outdoor (670/750rpm)	1
17	464860002	Motor Support Assy.	1
18	463600052	Capillary Assy./GCN9 φ2.6xφ1.4x(500+400)	1
19	4510677	Nut With Flange M8 -D=24 GB6187-86	3
20	391498	Wire assy	1
21	460170007R	Compressor Assy/ PH170G1C-4DZDE1/R22/GMCC	1
22	4519600	Compressor Jacket PH170,2P17S	1
24	4516637	Out sensor Black	1
25	461600078	4-Way Valve Assy./GCN 9 R22/PH170G1C-4DZDE1	1
26	224213	4-W valve	1
27	4514005	4-W valve coil	1
28	4516857	BIG SIDE COVER	1
29	453086200	Side Plate Painting Assy./Right	1
30	4514588	5 Poles terminal block	1
31	236179	2 Poles terminal block	1
32	464770001	Rear Plate/Left Painting Assy	1
33	464770007	Rear Plate/Right Painting Assy/GCZ 9/12	1
34	464800000	Guard Net/ODU Painting Assy	1
35	462300097	Condenser Assy./GCN9	1
36	4516158	Cover panel Painting assy	1
37	436358	L. lifter	1

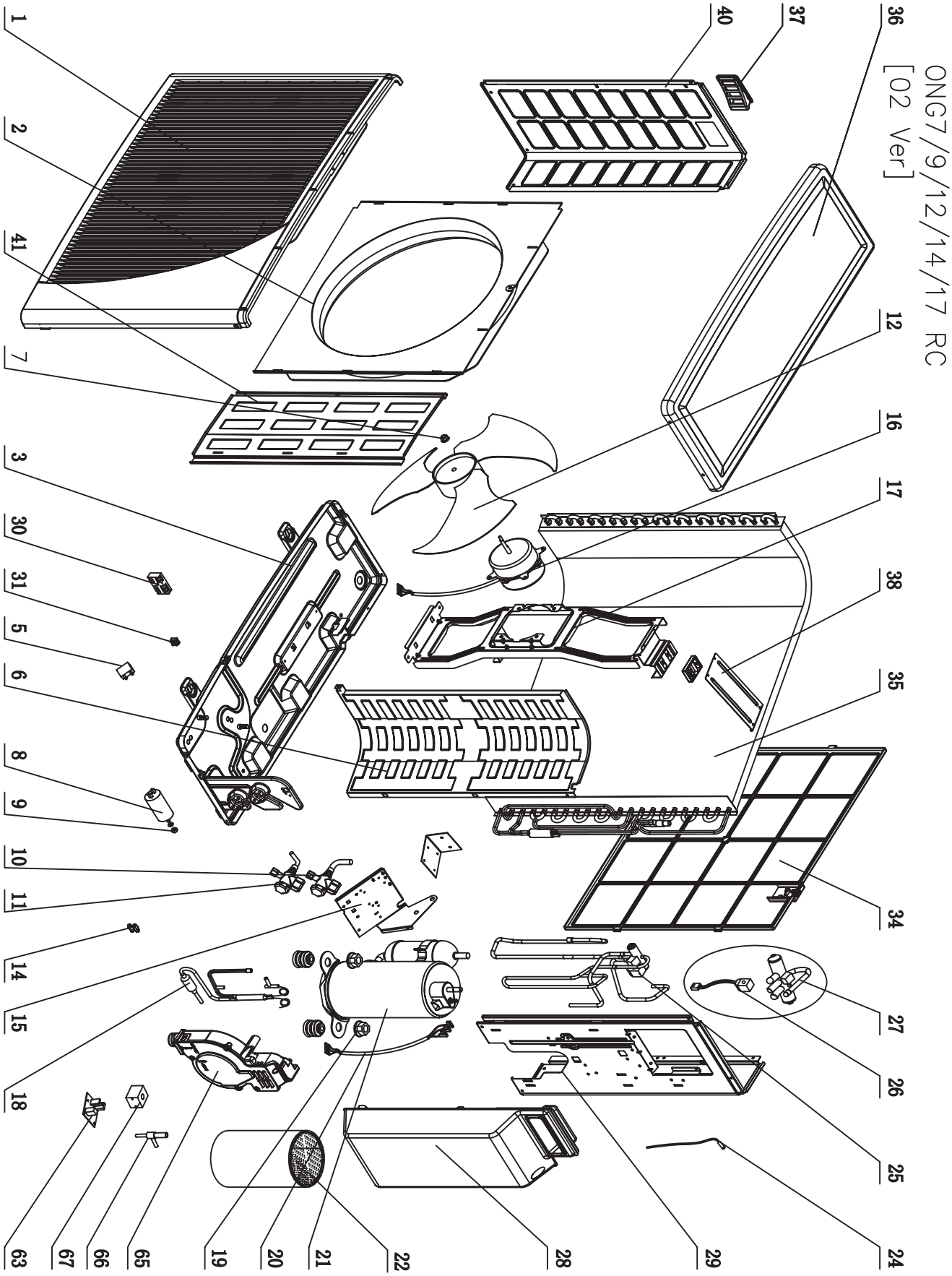
14.2 Outdoor unit : GCN 12 RC



14.2 Outdoor unit : GCN 12 RC

No.	Item	Description	Quan.
1	4522551	Grille A of GCN	1
2	4523441	Front panel A Painting assy	1
3	464600090	Base Plate Painting assy/GCN /SANYO	1
5	455000108	Double patch Capacitor for fan motor 2uF	1
6	464160018	Partition plate/GCZ 9/12	1
7	4519300	Nut M5 L	1
8	455000502	Compressor Capacitor With Screw 25uF (CBB65)	1
9	201019	Nut M8	1
10	461000017	Liquid Valve 1/4″ R22	1
11	461010026	Gas Valve 1/2″ R22	1
12	4519251	Axial Fan OD=400	1
13	4518022	Cap. Clip	1
14	204107	Cable clip Nylon	1
16	4522766R	Motor of outdoor (830rpm)	1
17	464860002	Motor Support Assy.	1
18	463750213	Check Valve Assy. /2.6x1.6x(700+400)/GCN 12 R22/C-RV212	1
19	4510677	Nut With Flange M8 -D=24 GB6187-86	3
20	391498	Wire assy	1
21	460190014R	Compressor Assy/ SANYO C-RV212HC2CB	1
22	469100003	Insulation Felt/ Compressor	1
24	4516637	Out sensor Black	1
25	461600071	4-Way Valve Assy./GCN 12 R22/SANYO C-RV212H51BA	1
26	224213	4-W valve	1
27	4514005	4-W valve coil	1
28	4516857	BIG SIDE COVER	1
29	453086200	Side Plate Painting Assy./Right	1
30	4514588	5 Poles terminal block	1
31	236179	2 Poles terminal block	1
32	464770001	Rear Plate/Left Painting Assy	1
33	464770007	Rear Plate/Right Painting Assy/GCZ 9/12	1
34	464800000	Guard Net/ODU Painting Assy	1
35	453092000	Condenser	1
36	4516158	Cover panel Painting assy	1
37	436358	L. lifter	1

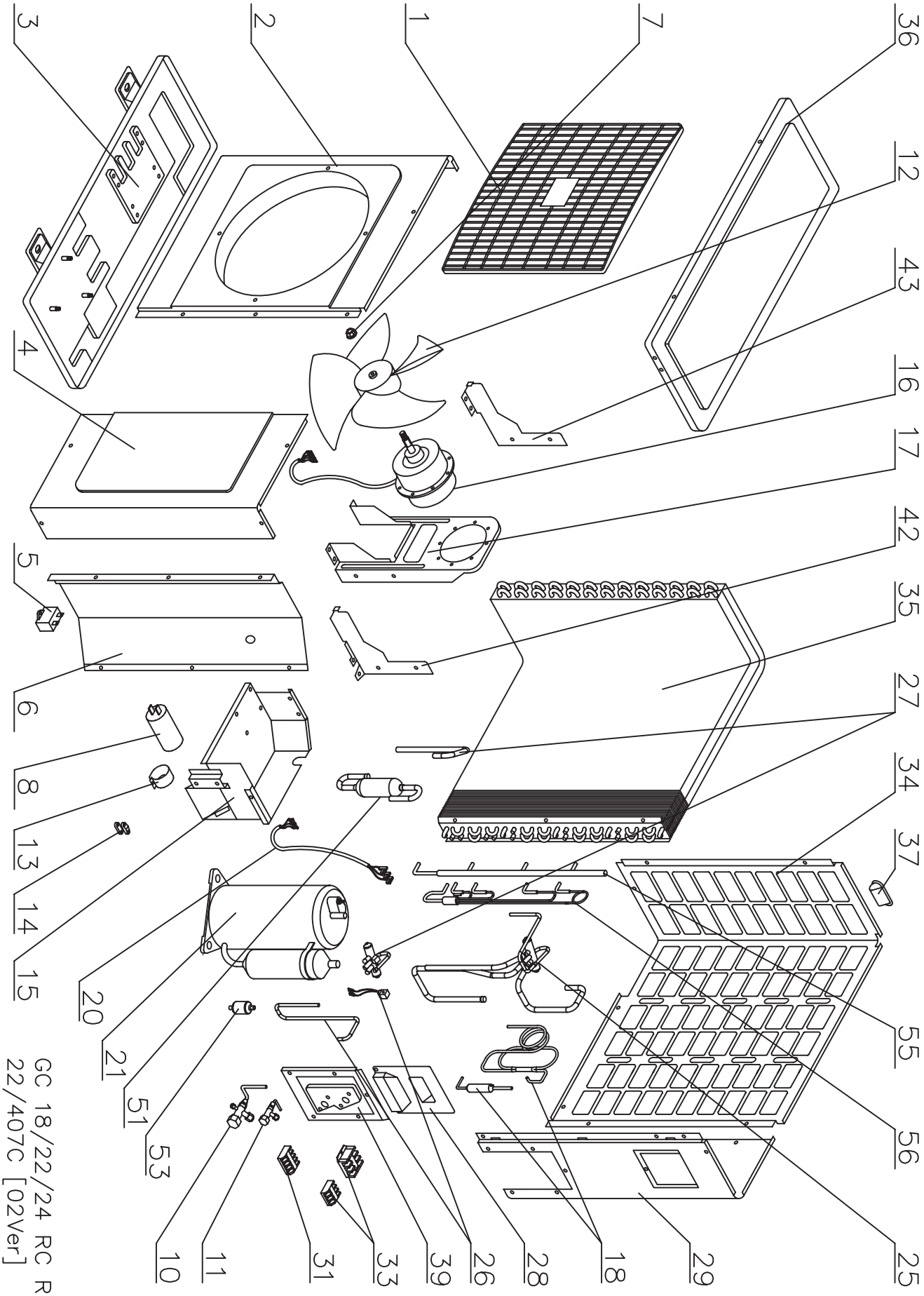
14.3 Outdoor unit : ONG 3-17 RC



14.3 Outdoor unit : ONG 3-17 RC

Level	Item	Description	Quan.
1	433218	Front Panel A	1
2	433221	Air Inlet Ring-420	1
3	452772500	Base Plate Painting Assy.	1
5	455000108	Double patch Capacitor for fan motor 2uF	1
6	433217	Partition Plate	1
7	4519300	Nut M5 L	1
8	455000513	Compressor Capacitor With Screw/60uF (CBB65)	1
9	201019	Nut M8	1
10	461010026	Gas Valve 1/2″ R22	1
10	463300506	Standard Valve Connect Pipe/Gas Valve/ TP2M 12.7*0.8/CON GCN ONG3	1
11	461000017	Liquid Valve 1/4″ R22	1
11	463300510	Standard Valve Connect Pipe/Liquid Valve/ TP2M 6.35*0.8/RC/GCN ONG3	1
12	4519251	Axial Fan OD=400	1
14	204107	Cable clip Nylon	1
15	453012700	Electric Panel	1
16	4520171R	Fan Motor (910rpm)	1
17	4527203	Motor Support	1
18	463600049	Capillary Assy. 3.2*1.9*(300+400)/ONG3-17	1
19	4510677	Nut With Flange M8 -D=24 GB6187-86	3
20	391498	Wire assy	1
21	460150018R	Compressor Assy./Panasonic 2V34S225BUC/R22	1
22	452987500	Comp. Jacket	1
24	4516637	Out sensor Black	1
25	461600062	4-Way Valve Welding Assy./ONG3-17 R22(2V34S225BUC)	1
26	4520071	4-W valve coil for R410A	1
27	4518952	4-W valve SHF-7H for R410A	1
28	433229	Valve Cover	1
29	4519606	Right side panel (painting plate)	1
31	236179	2 Poles terminal block	1
33	4514588	5 Poles terminal block	1
34	433228	Back Side Net	1
35	462300072	Condenser Assy./ONG3-17 R22	1
36	4519614	Painting Top Cover	1
37	433225	Handle	1
38	4526298	Bridge	1
40	4519607	Left Side Panel Painting Plate	1
41	433223	Painting Insulation Plate	1
70	452813200	coil stopper	1

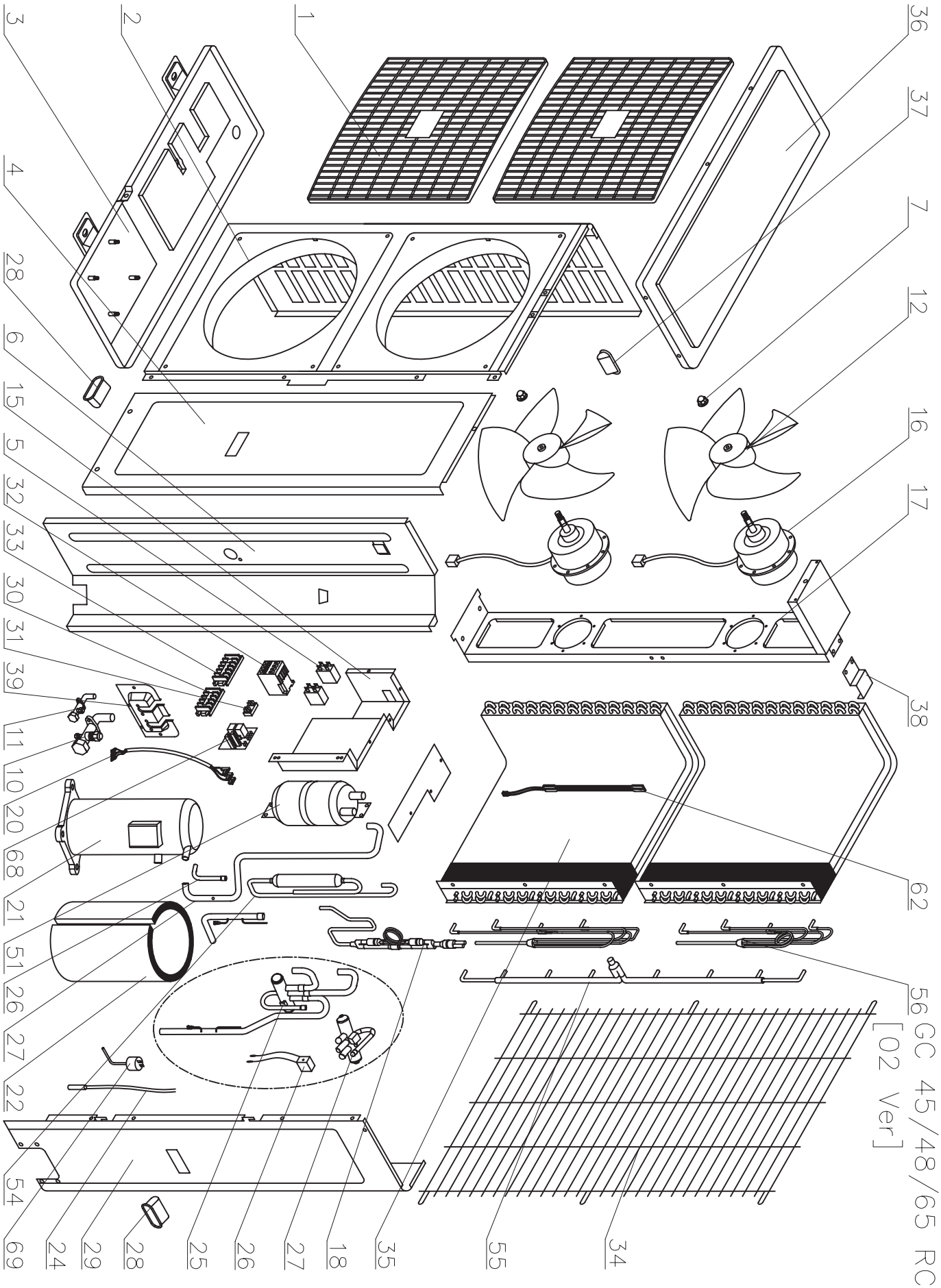
14.4 Outdoor unit : GCZ 22 RC



14.4 Outdoor unit : GCZ 22 RC

Level	Item	Description	Quan.
1	433218	Front Panel A	1
2	433221	Air Inlet Ring-420	1
3	452772500	Base Plate Painting Assy.	1
5	455000108	Double patch Capacitor for fan motor 2uF	1
6	433217	Partition Plate	1
7	4519300	Nut M5 L	1
8	455000513	Compressor Capacitor With Screw/60uF (CBB65)	1
9	201019	Nut M8	1
10	461010026	Gas Valve 1/2″ R22	1
10	463300506	Standard Valve Connect Pipe/Gas Valve/ TP2M 12.7*0.8/CON GCN ONG3	1
11	461000017	Liquid Valve 1/4″ R22	1
11	463300510	Standard Valve Connect Pipe/Liquid Valve/ TP2M 6.35*0.8/RC/GCN ONG3	1
12	4519251	Axial Fan OD=400	1
14	204107	Cable clip Nylon	1
15	453012700	Electric Panel	1
16	4520171R	Fan Motor (910rpm)	1
17	4527203	Motor Support	1
18	463600049	Capillary Assy. 3.2*1.9*(300+400)/ONG3-17	1
19	4510677	Nut With Flange M8 -D=24 GB6187-86	3
20	391498	Wire assy	1
21	460150018R	Compressor Assy./Panasonic 2V34S225BUC/R22	1
22	452987500	Comp. Jacket	1
24	4516637	Out sensor Black	1
25	461600062	4-Way Valve Welding Assy./ONG3-17 R22(2V34S225BUC)	1
26	4520071	4-W valve coil for R410A	1
27	4518952	4-W valve SHF-7H for R410A	1
28	433229	Valve Cover	1
29	4519606	Right side panel (painting plate)	1
31	236179	2 Poles terminal block	1
33	4514588	5 Poles terminal block	1
34	433228	Back Side Net	1
35	462300072	Condenser Assy./ONG3-17 R22	1
36	4519614	Painting Top Cover	1
37	433225	Handle	1
38	4526298	Bridge	1
40	4519607	Left Side Panel Painting Plate	1
41	433223	Painting Insulation Plate	1
70	452813200	coil stopper	1

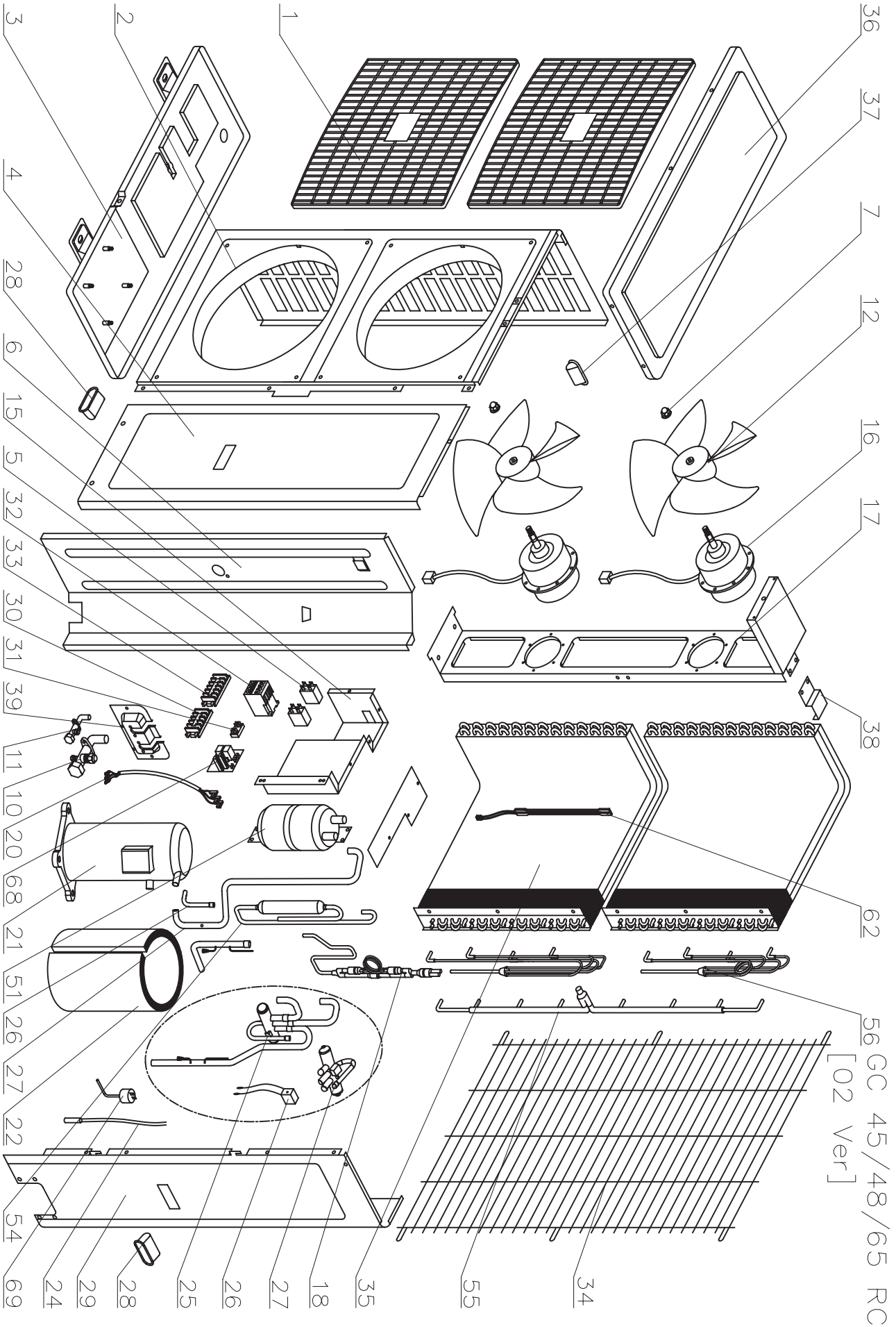
14.5 Outdoor unit : GC 10-34 RC



14.5 Outdoor unit : GC 10-34 RC

NO.	Item	Description	Quan.
1	4517144	FAN COVER PP+UV/GRILL A	1
2	4522238	Left front panel painted assy.	1
3	4520871	Base plate paint assy.	1
4	4517834	RIGHT FRONT PANEL PAINT ASSY	1
5	455000104	Double patch Capacitor for fan motor 4uF (CBB61S)	2
6	4521345	Dividing plate	1
7	4523141	Hexagon locked nut M10	2
10	4517536	low pressure stop valve	1
11	4517535	High pressure stop valae	1
12	4517004	Axial FAN D=450mm	2
15	4526128	Support for controller panel	1
16	4517740R	MOTOR YDK60-6P-3	2
17	4519199	MOTOR KICKSTAND	1
18	4522427	one way valve & filter assy	1
20	4518602	COMPRESSOR CABLE	1
21	4522400	COMPR. ASSY C-SB303H8A SANYO	1
22	4517783	COMPR. JACKET	1
24	4516429	Out sensor Black	1
25	C66033500	4-Way Valve Assy./EDC100H EDC120H	1
26	4520855	Discharge tube1(12.7*0.7)	1
27	4520847	Suction tube 1 (19.05*1)	1
28	4525681	big handle	1
29	4525814	Right-back plate painted assy.	1
30	4517308	TERMINAL BLOCK OF POWER SUPPLY	1
31	4517048	TERMINAL BLOCK OF NUETRAL	1
32	4517782	AC CONTACTOR EB25 OR D2501N	1
33	4517006	TERMINAL BLOCK OF CABLE	1
34	4524731	back grille paint assy	1
35	4522423	CONDSENER ASSY EDC 90H	1
36	4517832	TOP COVER PAINT ASSY	1
37	4517772	Little Handle	1
38	4525909	connect panel assy	1
39	4517833	VALVE BASE PAINT ASSY	1
51	4521286	Accumulator	1
54	4520863	Oil separator welding assy.	1
55	4522425	GATHERING GAS ASSY	1
56	4522426	DIVISION CAPILLARY ASSY	1
62	4517767	COMPR. SUB HEATER	1
68	4519695	MIX AND MISSING PHASE DEVICE	1
69	4519751	pressure switch(3.0MPa off/2.4MPa ON)	1

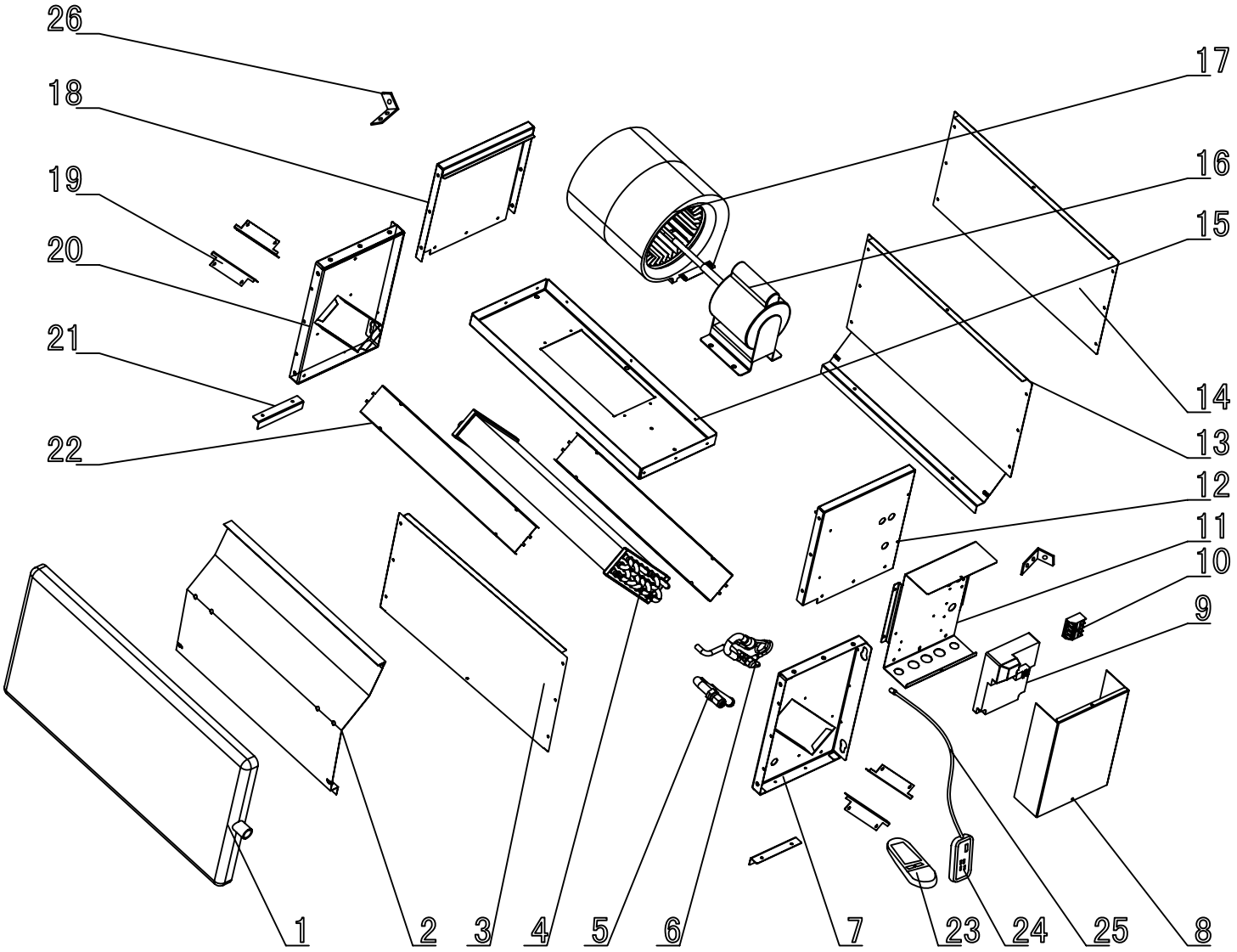
14.6 Outdoor unit : GC 45 RC



14.6 Outdoor unit : GC 45 RC

NO.	Item	Description	Quan.
1	4517144	FAN COVER PP+UV/GRILL A	1
2	4522238	Left front panel painted assy.	1
3	4520871	Base plate paint assy.	1
4	4517834	RIGHT FRONT PANEL PAINT ASSY	1
5	455000104	Double patch Capacitor for fan motor 4uF (CBB61S)	2
6	4521345	Dividing plate	1
7	4523141	Hexagon locked nut M10	2
10	4517536	low pressure stop valve	1
11	4517535	High pressure stop valae	1
12	4517004	Axial FAN D=450mm	2
15	4526128	Support for controller panel	1
16	4517740R	MOTOR YDK60-6P-3	2
17	4519199	MOTOR KICKSTAND	1
18	4521113	single-way and filter welding assy.	1
20	4518602	COMPRESSOR CABLE	1
21	4517743	compressor assy JT160BCBY1L	1
22	4517783	COMPR. JACKET	1
24	4516429	Out sensor Black	1
25	4520850	4-way valve welding assy.	1
26	4520854	Discharge tube1 (12.7*0.7)	1
27	4520847	Suction tube 1 (19.05*1)	1
28	4525681	big handle	1
29	4525814	Right-back plate painted assy.	1
30	4517308	TERMINAL BLOCK OF POWER SUPPLY	1
31	4517048	TERMINAL BLOCK OF NUETRAL	1
32	4517782	AC CONTACTOR EB25 OR D2501N	1
33	4517006	TERMINAL BLOCK OF CABLE	1
34	4524731	back grille paint assy	1
35	C66037900	Condenser Assy/Lower/GC48	1
36	4517832	TOP COVER PAINT ASSY	1
37	4517772	Little Handle	1
38	4525909	connect panel assy	1
39	4517833	VALVE BASE PAINT ASSY	1
51	4521286	Accumulator	1
54	4520863	Oil separator welding assy.	1
55	C65063600	Gas gather welding assy.	1
56	C66038000	Distributing Capillary Assy/GC48	1
62	4517767	COMPR. SUB HEATER	1
68	4519695	MIX AND MISSING PHASE DEVICE	1
69	4519751	pressure switch(3.0MPa off/2.4MPa ON)	1

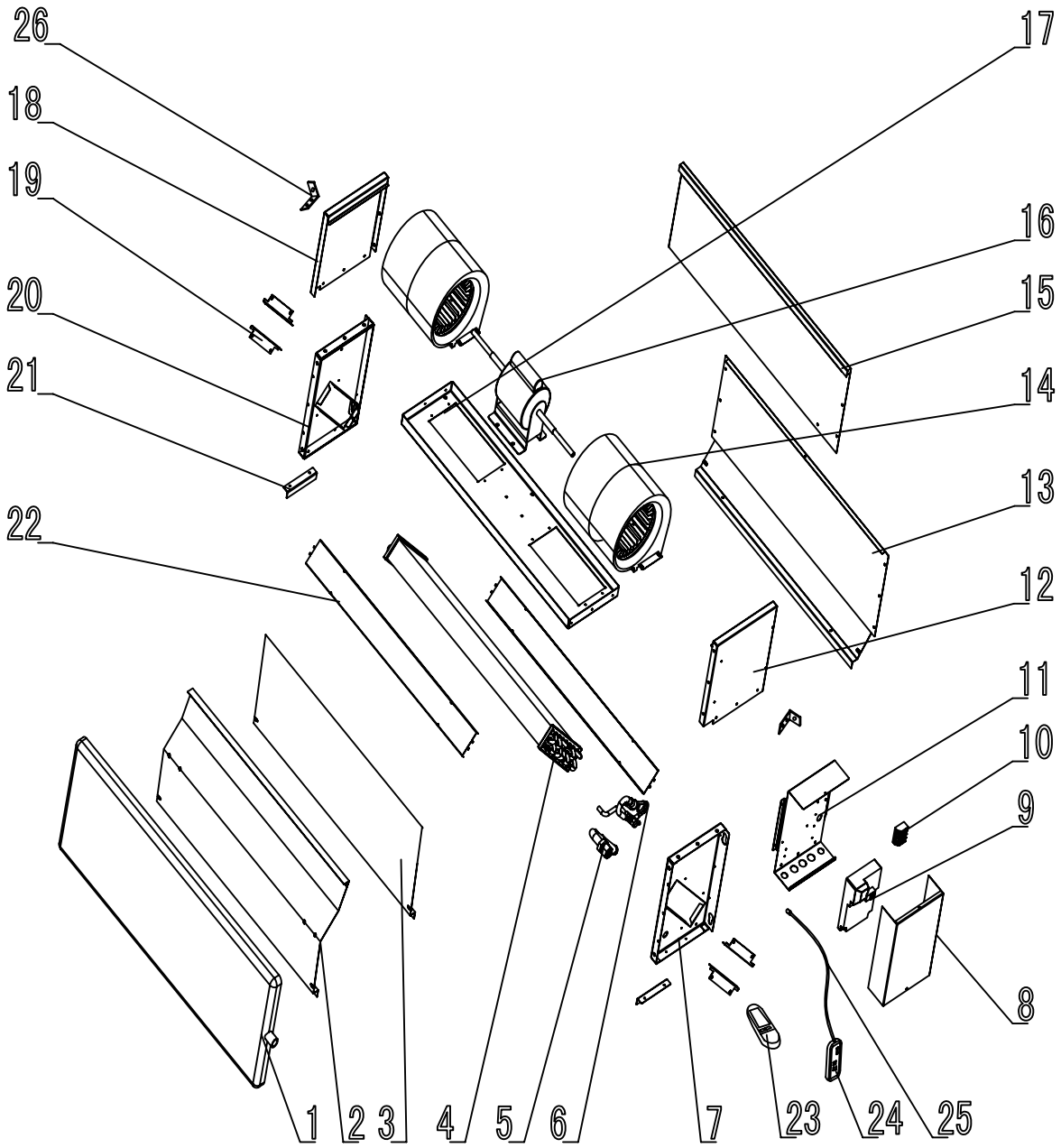
14.7 Outdoor unit : EDS 25



14.7 Outdoor unit : EDS 25

Item	Description	NO.	Qty.
4521405	DRAIN PAN	1	1
4521412	BASE PLATE ASSEMBLY	2	1
4522828	LOWER COVER ASSEMBLY OF REAR RETURN BOX (EDS25)	3	1
4521416	EVAPORATOR ASSEMBLY	4	1
4521420	GAS TUBE ASSEMBLY	5	1
4520811	LIQUID TUBE ASSEMBLY	6	1
4520817	LEFT PANEL ASSEMBLY	7	1
4520815	ELECTRIC BOX COVER	8	1
452852700R	H&T Simple STORM Controller	9	1
4522469	4 LEVEL TERMINAL BLOCK	10	1
4520814	ELECTRIC BOX PLATE	11	1
4522831	LEFT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	12	1
4521407	TOP COVER ASSEMBLY	13	1
4522829	TOP COVER ASSEMBLY OF REAR RETURN BOX(EDS25)	14	1
4521415	FANS SUPPORT	15	1
4521406	1-Phase Asynchronous Motor 27W/YDK27-4L4/YONG AN	16	1
4520832	AIR HOUSING AND IMPELLER ASSEMBLY (LEFT TYPE)	17	1
4522832	RIGHT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	18	1
4520823	FIX PLATE OF EVAPORATOR	19	4
4520818	RIGHT PANEL ASSEMBLY	20	1
4521174	LEFT AND RIGHT AIR OUTLET SUPPORT	21	2
4521411	COVER PLATE OF EVAPORATOR	22	2
402713R	DISPLAY BOX(EHK 906A071-00)	23	1
402730	CABLE(EHK 157-071-90)	24	1
C64028700	hunger	26	2

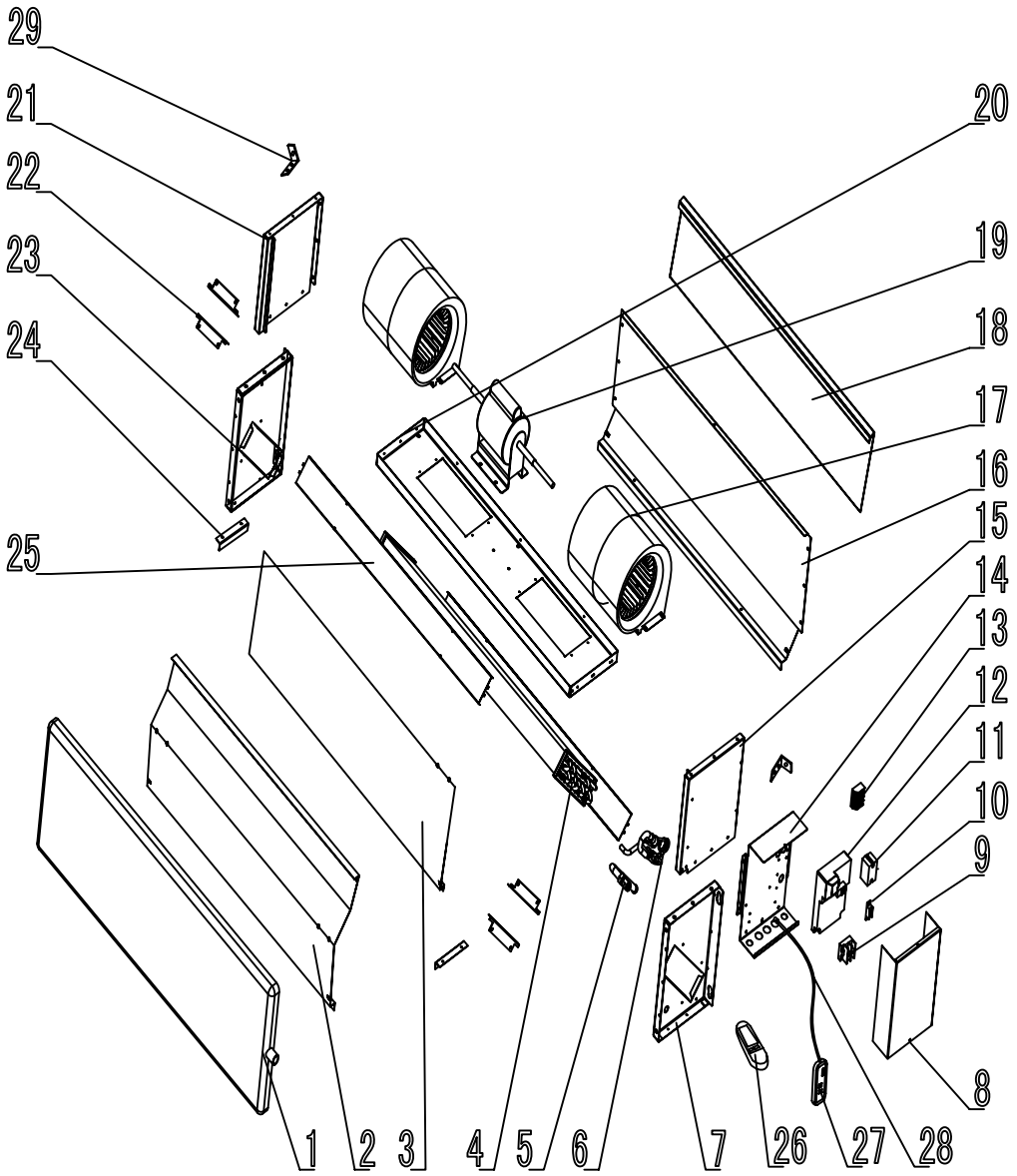
14.8 Outdoor unit : EDS 35



14.8 Outdoor unit : EDS 35

Item	Description	NO.	QTY.
4520824	DRAIN PAN	1	1
4520816	BASE PLATE ASSEMBLY	2	1
4522842	LOWER COVER ASSEMBLY OF REAR RETURN BOX (EDS35)	3	1
4520828	EVAPORATOR ASSEMBLY	4	1
4520810	GAS TUBE ASSEMBLY	5	1
4520811	LIQUID TUBE ASSEMBLY	6	1
4520817	LEFT PANEL ASSEMBLY	7	1
4520815	ELECTRIC BOX COVER	8	1
452852700R	H&T Simple STORM Controller	9	1
4522469	4 LEVEL TERMINAL BLOCK	10	1
4520814	ELECTRIC BOX PLATE	11	1
4522831	LEFT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	12	1
4521112	TOP COVER ASSEMBLY	13	1
4520832	AIR HOUSING AND IMPELLER ASSEMBLY (LEFT TYPE)	14	2
4522843	TOP COVER ASSEMBLY OF REAR RETURN BOX(EDS35)	15	1
4520831	1-Phase Asynchronous Motor 25W/YSK25-4L4/YONG AN	16	1
4520825	FANS SUPPORT	17	1
4522832	RIGHT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	18	1
4520823	FIX PLATE OF EVAPORATOR	19	4
4520818	RIGHT PANEL ASSEMBLY	20	1
4521174	LEFT AND RIGHT AIR OUTLET SUPPORT	21	2
4520822	COVER PLATE OF EVAPORATOR	22	2
402713R	DISPLAY BOX(EHK 906A071-00)	23	1
402730	CABLE(EHK 157-071-90)	24	1
C64028700	hunger	26	2

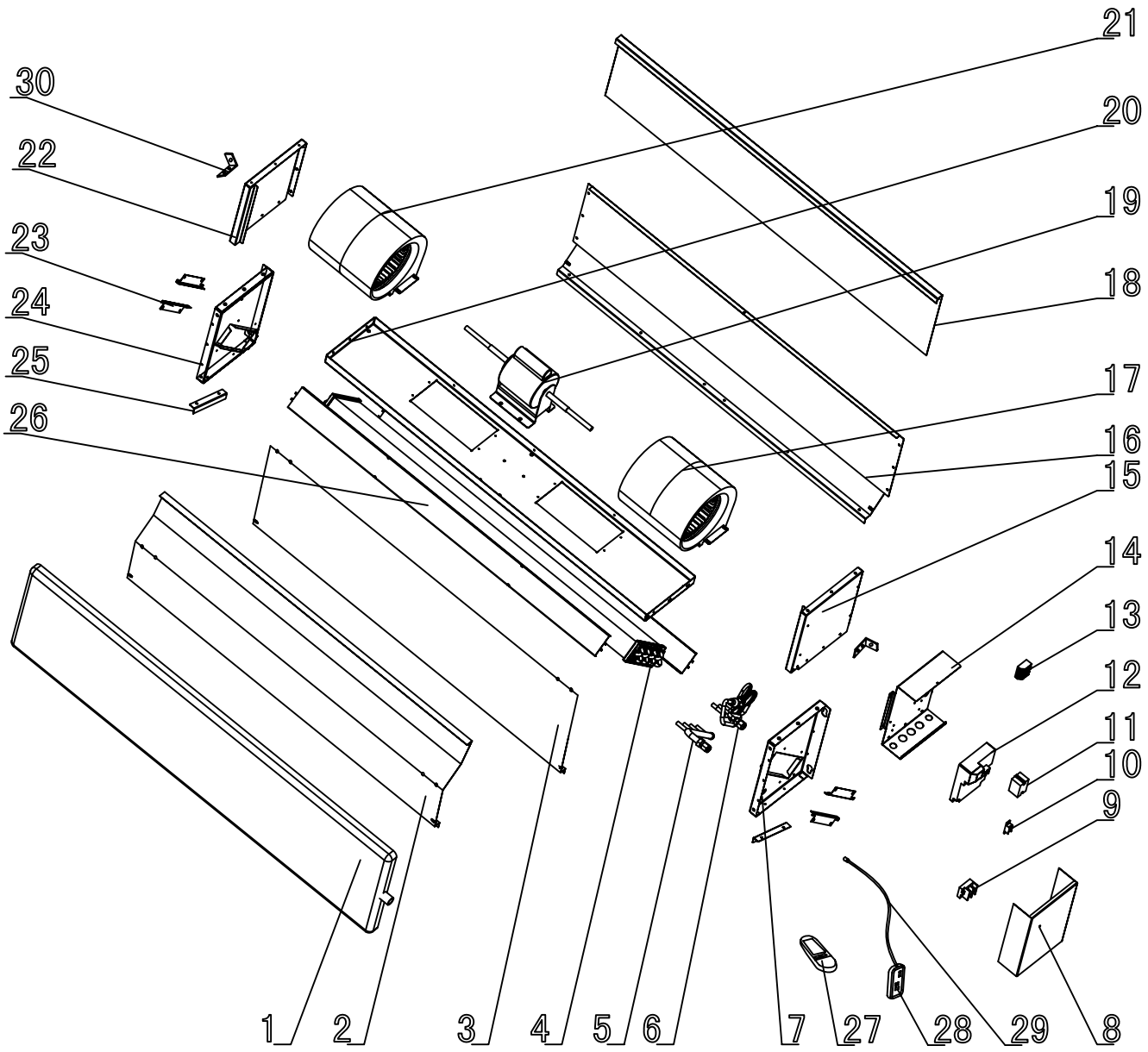
14.9 Outdoor unit : EDS 52



14.9 Outdoor unit : EDS 52

Item	Description	NO.	QTY.
4521383	DRAIN PAN	1	1
4521390	BASE PLATE ASSEMBLY	2	1
4522848	LOWER COVER ASSEMBLY OF REAR RETURN BOX (EDS52)	3	1
4521394	EVAPORATOR ASSEMBLY	4	1
4521398	GAS TUBE ASSEMBLY	5	1
4521399	LIQUID TUBE ASSEMBLY	6	1
4520817	LEFT PANEL ASSEMBLY	7	1
4520815	ELECTRIC BOX COVER	8	1
4521818	Level Terminal 10 mm2	9	1
4521817	One Level Terminal 4 mm2	10	1
230356	Relay JQX-116F-2 30A220V No6531230	11	1
452852700R	H&T Simple STORM Controller	12	1
4522469	4 LEVEL TERMINAL BLOCK	13	1
4520814	ELECTRIC BOX PLATE	14	1
4522831	LEFT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	15	1
4521385	TOP COVER ASSEMBLY	16	1
4520832	AIR HOUSING AND IMPELLER ASSEMBLY (LEFT TYPE)	17	2
4522849	TOP COVER ASSEMBLY OF REAR RETURN BOX(EDS52)	18	1
4521384	1-Phase Asynchronous Motor 55W/YSK55-4L4/YONG AN	19	1
4521393	FANS SUPPORT	20	1
4522832	RIGHT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	21	1
4520823	FIX PLATE OF EVAPORATOR	22	4
4520818	RIGHT PANEL ASSEMBLY	23	1
4521174	LEFT AND RIGHT AIR OUTLET SUPPORT	24	2
4521389	COVER PLATE OF EVAPORATOR	25	2
402713R	DISPLAY BOX(EHK 906A071-00)	26	1
402730	CABLE(EHK 157-071-90)	27	1
C64028700	hunger	29	2

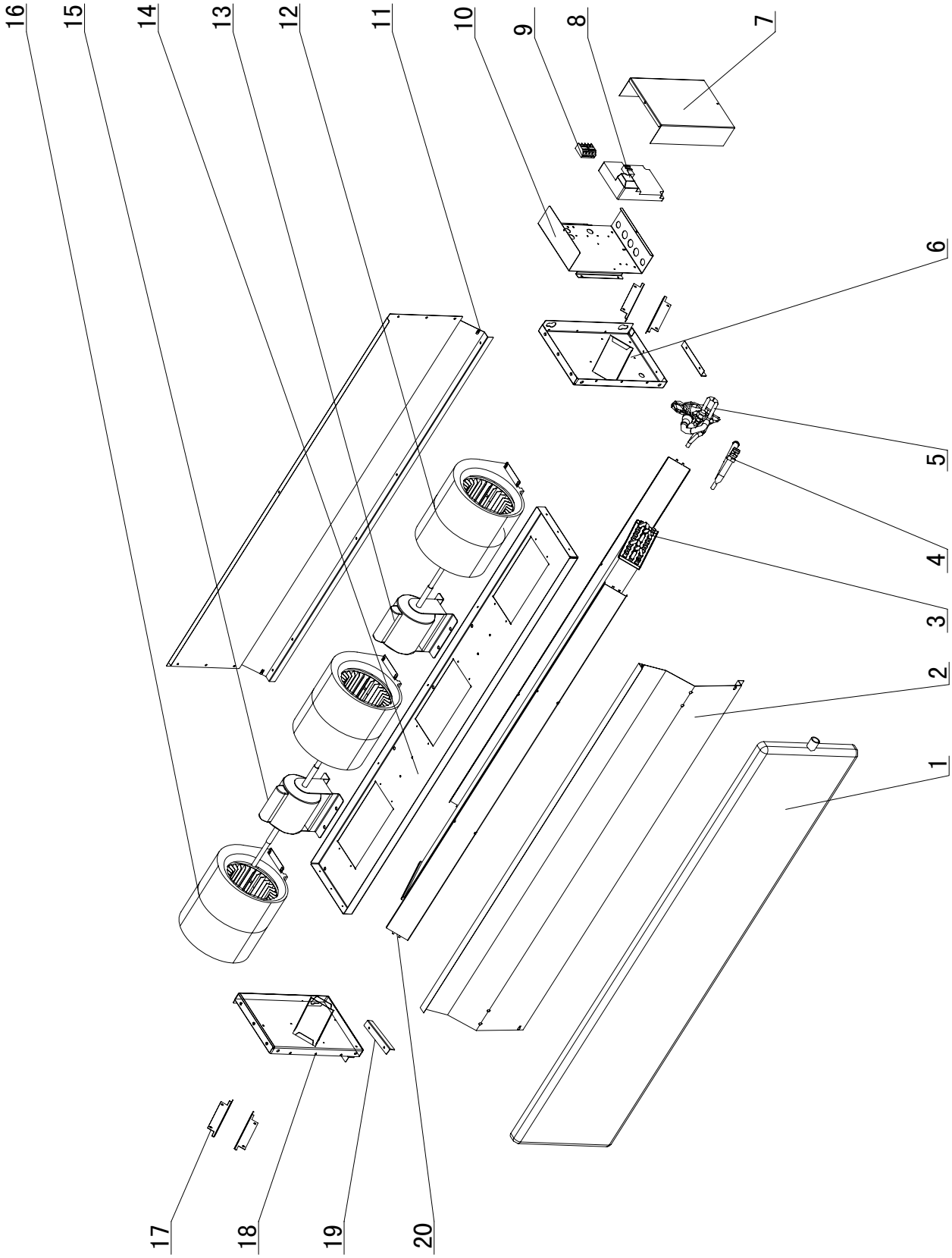
14.10 Outdoor unit : EDS 73



14.10 Outdoor unit : EDS 73

Item	Description	NO.	QTY.
4521599	DRAIN PAN ASSEMBLY	1	1
4521606	BASE PLATE ASSEMBLY	2	1
4522854	LOWER COVER ASSEMBLY OF REAR RETURN BOX (EDS73)	3	1
4521609	EVAPORATOR ASSEMBLY	4	1
4521808	GAS TUBE ASSEMBLY	5	1
4521809	LIQUID TUBE ASSEMBLY	6	1
4520817	LEFT PANEL ASSEMBLY	7	1
4520815	ELECTRIC BOX COVER	8	1
4521818	2 Level Terminal 10 mm2	9	1
4521817	One Level Terminal 4 mm2	10	1
230356	Relay JQX-116F-2 30A220V No6531230	11	1
452852700R	H&T Simple STORM Controller	12	1
4522469	4 LEVEL TERMINAL BLOCK	13	1
4520814	ELECTRIC BOX PLATE	14	1
4522831	LEFT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	15	1
4521600	TOP COVER ASSEMBLY	16	1
4520832	AIR HOUSING AND IMPELLER ASSEMBLY (LEFT TYPE)	17	2
4522855	TOP COVER ASSEMBLY OF REAR RETURN BOX(EDS73)	18	1
4521546	1-Phase Asynchronous Motor 100W/YSK100-4L4/YONG AN	19	1
4521608	FANS SUPPORT	20	1
4522832	RIGHT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	21	1
4520823	FIX PLATE OF EVAPORATOR	22	4
4520818	RIGHT PANEL ASSEMBLY	23	1
4521174	LEFT AND RIGHT AIR OUTLET SUPPORT	24	2
4521605	COVER OF EVAPORATOR	25	2
402713R	DISPLAY BOX(EHK 906A071-00)	26	1
2730	CABLE(EHK 157-071-90)	27	1
C64028700	hunger	29	2

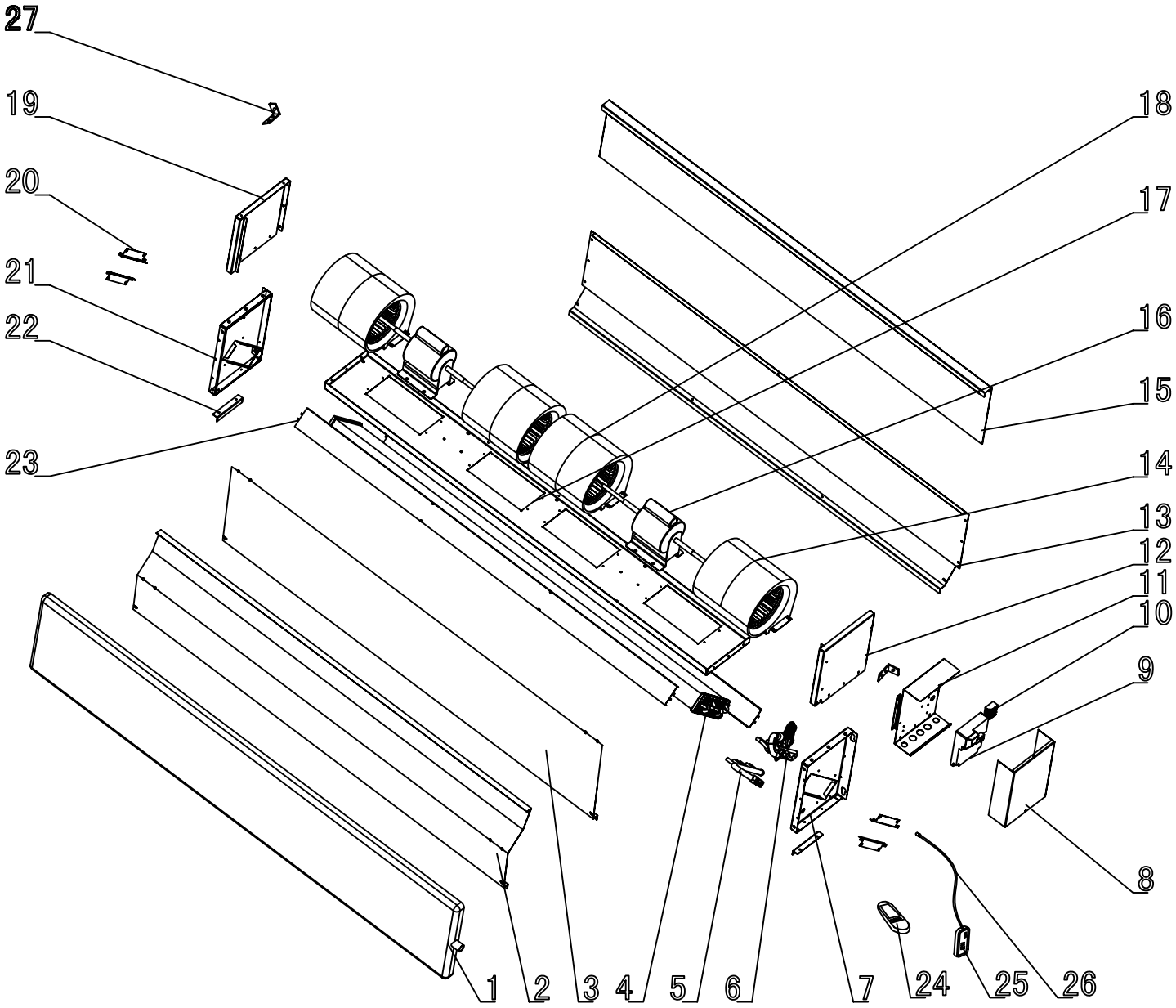
14.11 Outdoor unit : EDS 100



14.11 Outdoor unit : EDS 100

Item	Description	NO.	QTY.
4521581	DRAIN PAN ASSEMBLY	1	1
4521588	BASE PLATE ASSEMBLY	2	1
4522860	LOWER COVER ASSEMBLY OF REAR RETURN BOX (EDS100)	3	1
4521591	EVAPORATOR ASSEMBLY	4	1
4521810	GAS TUBE ASSEMBLY	5	1
4521811	LIQUID TUBE ASSEMBLY	6	1
4520817	LEFT PANEL ASSEMBLY	7	1
4520815	ELECTRIC BOX COVER	8	1
452852700R	H&T Simple STORM Controller	9	1
4522469	4 LEVEL TERMINAL BLOCK	10	1
4520814	ELECTRIC BOX PLATE	11	1
4522831	LEFT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	12	1
4521582	TOP COVER ASSEMBLY	13	1
4522583	AIR HOUSING AND IMPELLER ASSEMBLY (RIGHT TYPE)	14	1
4522861	TOP COVER ASSEMBLY OF REAR RETURN BOX(EDS100)	15	1
4521384	1-Phase Asynchronous Motor 55W/YSK55-4L4/YONG AN	16	1
4521590	FANS SUPPORT	17	2
4522237	1-Phase Asynchronous Motor 27W/YDK27-4L4/YONG AN	18	1
4520832	AIR HOUSING AND IMPELLER ASSEMBLY (LEFT TYPE)	19	1
4522832	RIGHT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	20	1
4520823	FIX PLATE OF EVAPORATOR	21	1
4520818	RIGHT PANEL ASSEMBLY	22	4
4521174	LEFT AND RIGHT AIR OUTLET SUPPORT	23	1
4521587	COVER PLATE OF EVAPORATOR	24	2
402713R	DISPLAY BOX(EHK 906A071-00)	25	2
402730	CABLE(EHK 157-071-90)	26	1
C64028700	hunger	27	1

14.12 Outdoor unit : EDS 120



14.12 Outdoor unit : EDS 120

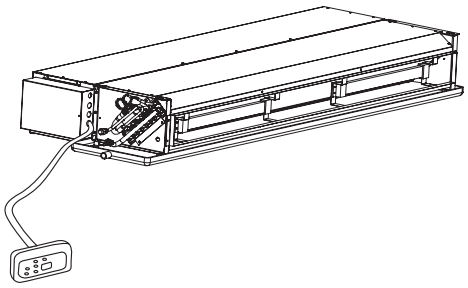
Item	Description	NO.	QTY.
4521562	DRAIN PAN ASSEMBLY	1	1
4521570	BASE PLATE ASSEMBLY	2	1
4522866	LOWER COVER ASSEMBLY OF REAR RETURN BOX (EDS120)	3	1
4521573	EVAPORATOR ASSEMBLY	4	1
4521810	GAS TUBE ASSEMBLY	5	1
4521576	LIQUID TUBE ASSEMBLY	6	1
4520817	LEFT PANEL ASSEMBLY	7	1
4520815	ELECTRIC BOX COVER	8	1
452852700R	H&T Simple STORM Controller	9	1
4522469	4 LEVEL TERMINAL BLOCK	10	1
4520814	ELECTRIC BOX PLATE	11	1
4522831	LEFT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	12	1
4521564	TOP COVER ASSEMBLY	13	1
4522583	AIR HOUSING AND IMPELLER ASSEMBLY (RIGHT TYPE)	14	2
4522867	TOP COVER ASSEMBLY OF REAR RETURN BOX(EDS120)	15	1
4521384	1-Phase Asynchronous Motor 55W/YSK55-4L4/YONG AN	16	2
4521572	FANS SUPPORT	17	1
4520832	AIR HOUSING AND IMPELLER ASSEMBLY (LEFT TYPE)	18	2
4522832	RIGHT PANEL ASSEMBLY OF REAR RETURN BOX(EDS SERIES)	19	1
4520823	FIX PLATE OF EVAPORATOR	20	4
4520818	RIGHT PANEL ASSEMBLY	21	1
4521174	LEFT AND RIGHT AIR OUTLET SUPPORT	22	2
4521569	COVER PLATE OF EVAPORATOR	23	2
402713R	DISPLAY BOX(EHK 906A071-00)	24	1
402730	CABLE(EHK 157-071-90)	25	1
C64028700	hunger	27	2

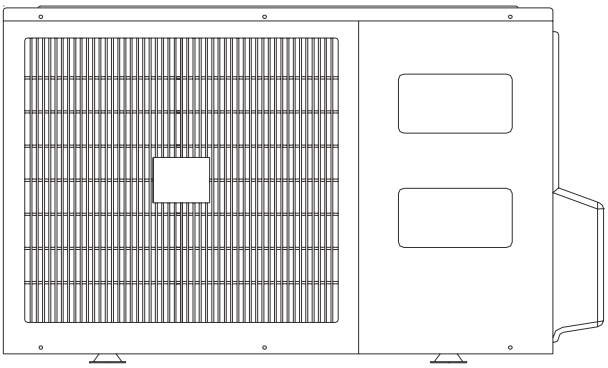
CLIMATISATION

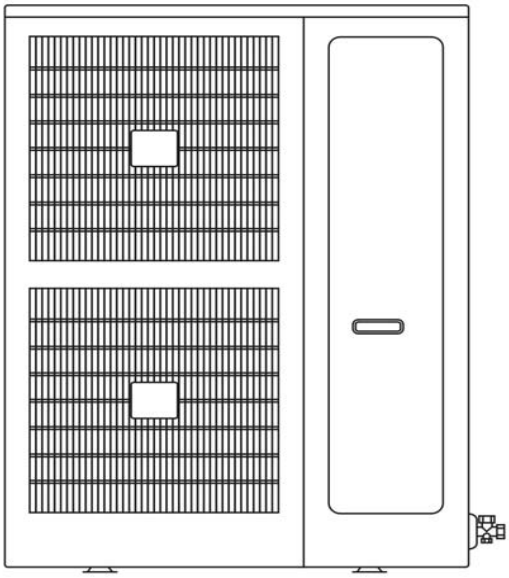
Comfort Range

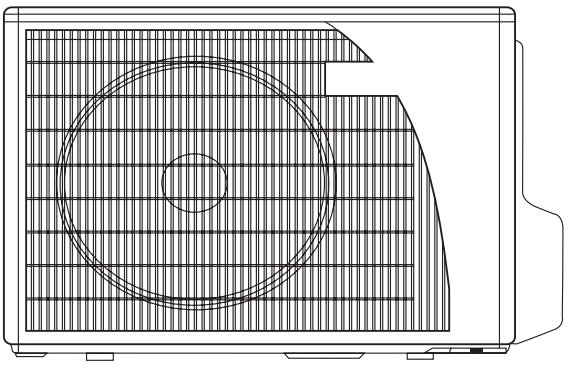
Ductable Pressurized Split System Air Conditioners

EDS Series









OPERATION AND INSTALLATION MANUAL

Part No:468140066/02

IT IS MANDATORY TO CUTOFF POWER SUPPLY BEFORE STARTING TO WORK IN THE ELECTRIC CASING BOXES

GENERAL RECOMMENDATIONS

- Congratulations for having selected an our air conditioner.

SAFETY DIRECTIONS

- Follow the safety rules in forces when you are working on your appliance.
- Installation and maintenance of the equipment should be performed by qualified specialists.
- Make sure that the power supply and its frequency are adapted to the required electric current of operation, taking into account specific conditions of the location and the current required for any other appliance connected with the same circuit.
- Maximal installation altitude is 1000m.
- The appliance shall be installed in accordance with national wiring regulation.

WARNING

- Cut off power supply before starting to work on the appliance.
- The manufacturer declines any responsibility and the warranty becomes void if these instructions are not respected.
- If you meet a problem, please call the Technical Department of your area.
- If possible, assemble the mandatory or optional accessories before placing the appliance on its final location. (see instructions provided with each accessory).

The information contained in these instructions are subject to modification without advance notice.

In order to become fully familiar with the appliance,we suggest to read also our Technical Instructions.

TRANSPORTATION AND STORAGE

Upon receipt of the equipment, check for carton visible damage, make a notation on the shipper's delivery ticket before signing. If there is any evidence rough handling, immediately open the carton to check for concealed damage, if any damage is found, notify the carrier within 48 hours to establish your claim and request their inspection and a report. The Warranty Claim Department should then be contacted.

Do not stand or transport the machines on end. For storing, each carton is marked with "up" arrows.

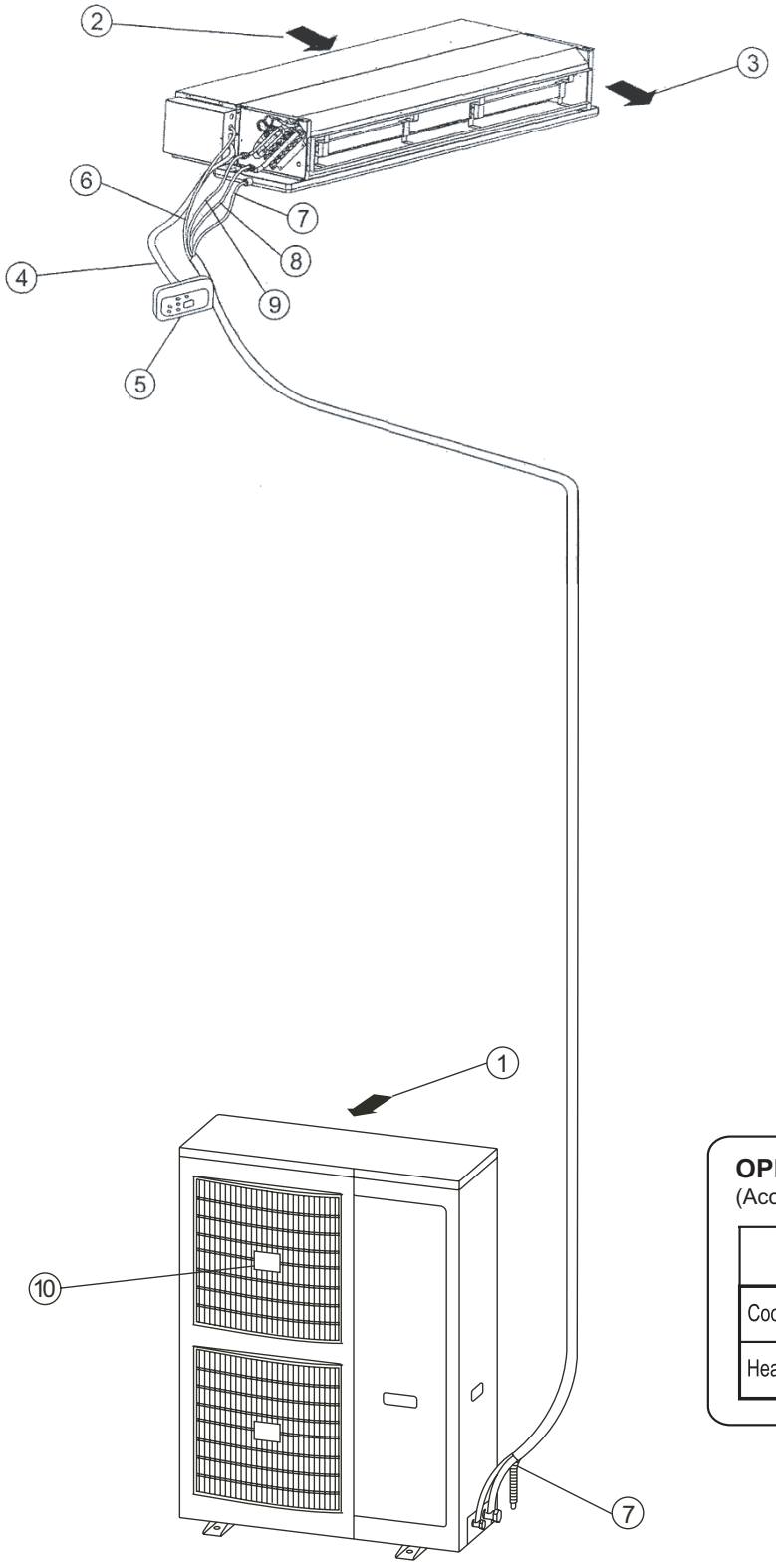
In the event that elevator transfer makes up-ended positioning unavoidable. absolutely make sure that the machine is in the normal upright position for at least 24 hours before operating.

Temporary storage at the job site must be indoors, completely sheltered from rain, snow, etc. high or low temperature naturally associated with weather pattern will not harm the conditioners. The transport and storage temperature range is from -25℃ to 55℃, otherwise, may deteriorate certain plastic materials and cause permanent damage.

Note: Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and are experienced with this type of equipment.
Caution: Sharp edges are a potential injury hazard. Avoid contact with them.

OPERATION INSTRUCTIONS

SYSTEM DESCRIPTION



1.Outdoor Unit Air Intake

2.Return Air Intake

3.Supply Air Outlet

4.Central Control Unit Cord

5.Central Control Unit Display

6.Interconnecting Cable

7.Condensate Tube

8.Suction Tube

9.Liquid Tube

10.Outdoor Unit Air Outlet

OPERATING TEMPERATURE RANGE

(According to T1 temperature condition)

R22		Indoor		Outdoor	
		DB[°C]	WB[°C]	DB[°C]	WB[°C]
Cooling	Upper Limit	32	23	46	NA
	Lower Limit	21	15	21	NA
Heating	Upper Limit	27	NA	24	18
	Lower Limit	15	NA	-5	-6

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MODES OF OPERATION,FUNCTIONS AND FEATURES

COOL	Cools, dehumidifies and filters the room air. Maintains desired room temperature.
HEAT	Heats and filters the room air. Maintains desired room temperature.
AUTO	Automatically switches from COOLING to HEATING or from HEATING to COOLING, maintaining the desired temperature according to the room conditions.
DRY	Dehumidifies and softly cools the room In DRY Mode, the air conditioner operates at an increased dehumidifying power. This function is recommended to be used when temperature is rather low but the humidity is high.
FAN	Recirculates and filters the room air. Maintains constant air movement in the room.
AUTO FAN	The air conditioner automatically selects the FAN speed in accordance with the room temperature. At the start, the unit operates at high fan speed. As the room air approaches to the desired temperature, the fan switches to a lower speed for quieter operation.
I FEEL	Switches the temperature sensing point to the place where the remote control is located. (Generally the temperature sensor is located behind the intake grille of the air conditioner). This function is designed to provide a personalized environment by transmitting the temperature control command from the location next to you. The communication between the Remote Control and the unit is done by infra-red signal. Therefore, in using this function, the Remote Control should always be aimed, without obstructions, at the air conditioner.
TIMER	Real time control and display, automatically turns the air conditioner ON and OFF according to the time of day setting, ensuring comfort conditions before returning home, without wasting electricity. It turns the air conditioner off automatically when sleeping.
SLEEP	Designed to create comfortable sleeping conditions. When in COOLING mode, the temperature rises one degree centigrade after each consecutive hour, up to three hours, from the start of the mode. The temperature rise prevents the feeling of over-cooling while sleeping (when your body is at rest). In HEATING mode the reverse occurs; the air conditioner lowers its temperature one degree every hour. When in SLEEP mode, the air conditioner will be automatically turned off after seven hours. The result is a more comfortable and invigorating sleep, which leaves you feeling fresh and energetic in the morning.

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