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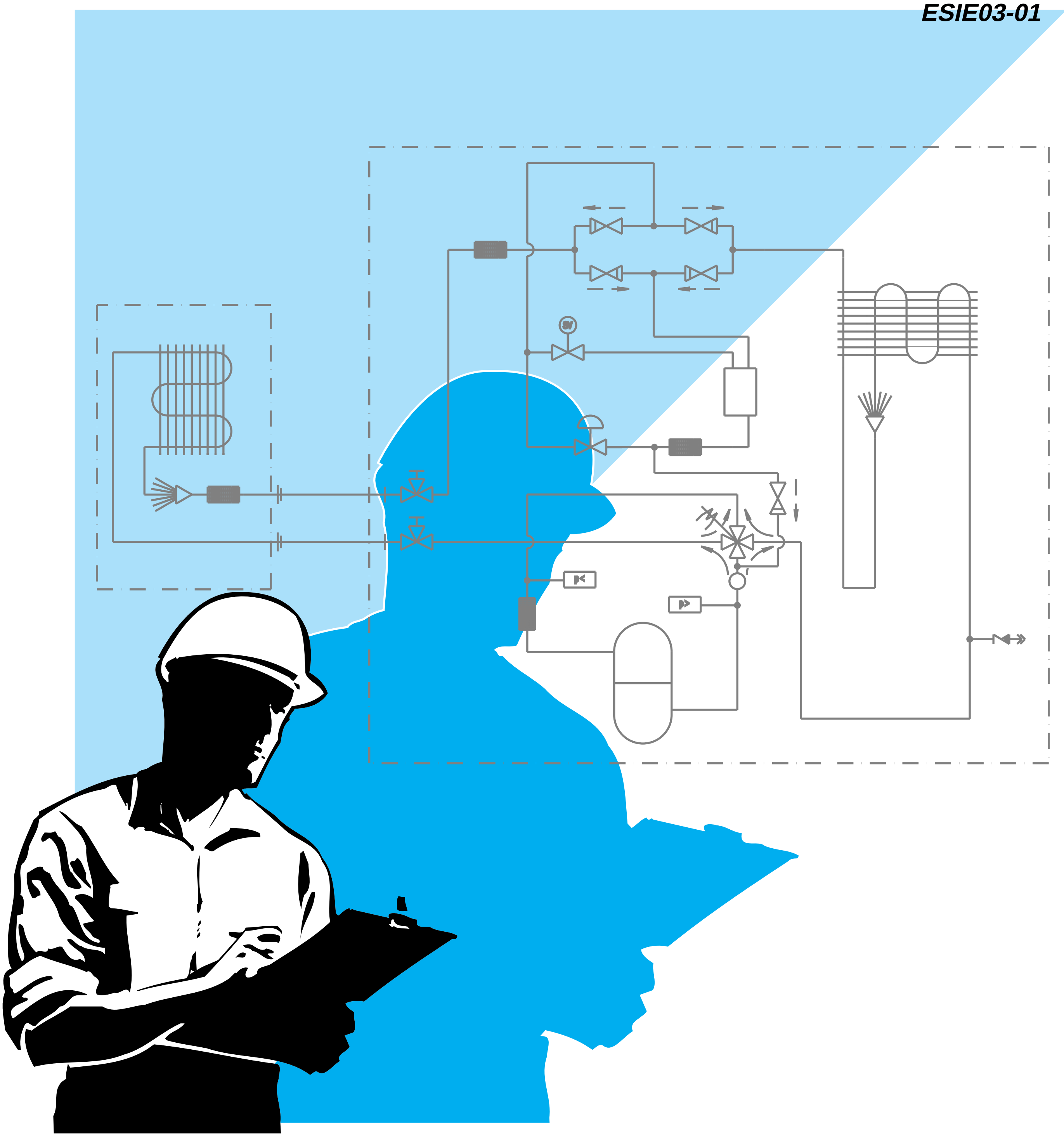
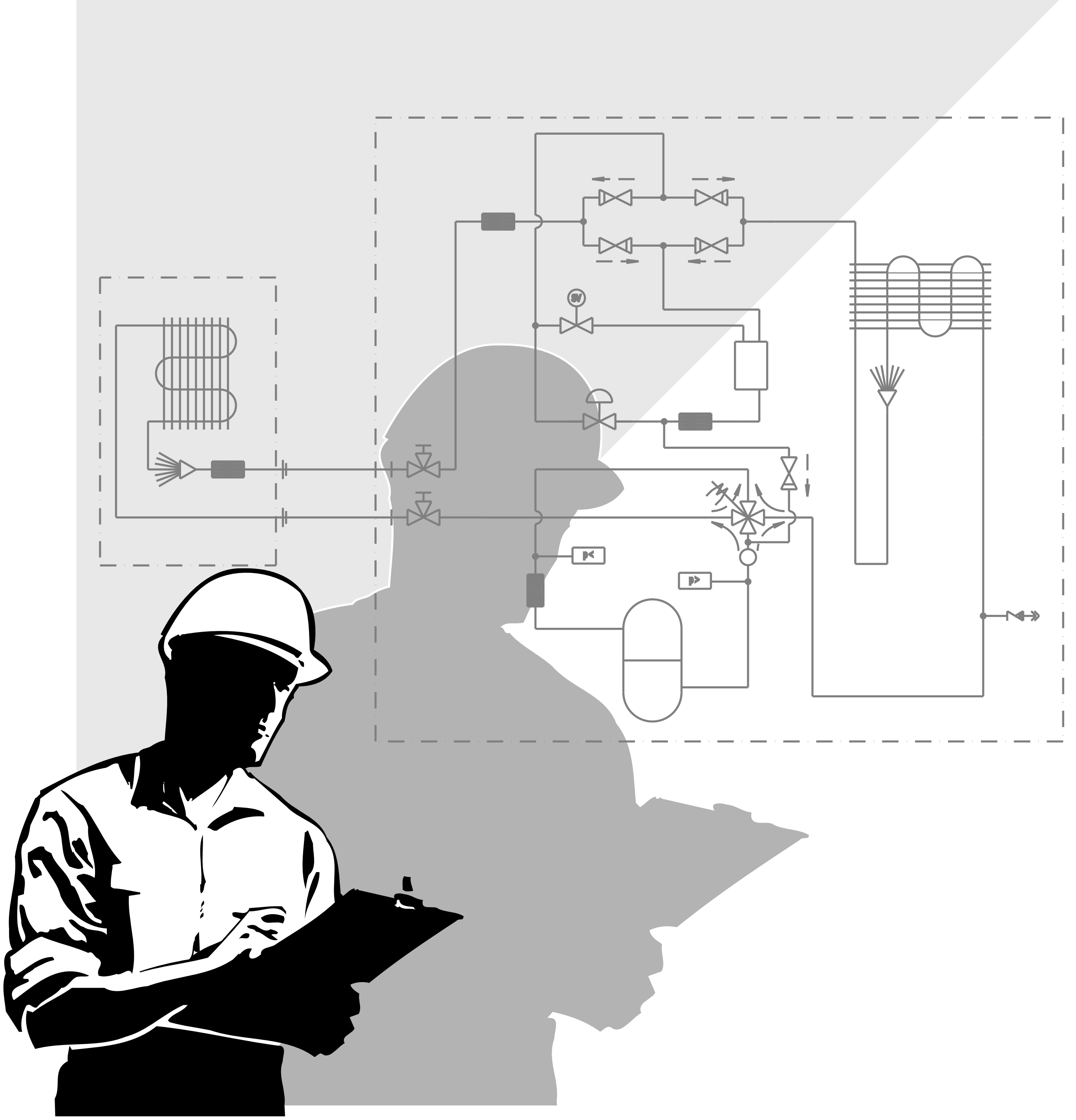


Service Manual
Sky Air R407C

L-series

DAIKIN EUROPE NV

ESIE03-01



Service Manual
Sky Air R407C

L-series

DAIKIN EUROPE NV

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1 Introduction

1.1 About This Manual

Target group

This service manual is intended for and should only be used by qualified engineers.

Purpose of this manual

This service manual contains all the information you need to do the necessary repair and maintenance tasks for the Sky Air L-series room air conditioners.

Five parts

This service manual consists of an introduction, five parts and an index:

Introduction overview

The introduction contains the following topics:

1.2 Combination Overview: Outdoor Units of the Sky Air L-Series

Introduction

In the tables in this section:

- "P" stands for pair combination.
- "T" stands for twin, triple or double twin combination.

FHYCP, FHYKP and FHYP

The table below contains the possible combinations between indoor units (FHYCP, FHYKP and FHYP) and outdoor units of the Sky Air L-series.

Outdoor unit \ Indoor unit		FHYCP35B7V1	FHYCP45B7V1	FHYCP60B7V1	FHYCP71B7V1	FHYCP100B7V1	FHYCP125B7V1	FHYKP35BV17	FHYKP45BV17	FHYKP60BV17	FHYKP71BV17	FHYP35BV1	FHYP45BV1	FHYP60BV1	FHYP71BV1	FHYP100BV1	FHYP125BV1
Large c/o	RP71L7V1	**T**	—	—	**P**	—	—	**T**	—	—	**P**	**T**	—	—	**P**	—	—
	RP71L7W1	**T**	—	—	**P**	—	—	**T**	—	—	**P**	**T**		—	**P**	—	—
	RP100L7V1	**T**	**T**	**T**	**T**	**P**	—	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**P**	—
	RP100L7W1	**T**	**T**	**T**	**T**	**P**	—	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**P**	—
	RP125L7W1	**T**	**T**	**T**	**T**	—	**P**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	—	**P**
Large h/p	RYP71L7V1	**T**	—	—	**P**	—	—	**T**	—	—	**P**	**T**	—	—	**P**	—	—
	RYP71L7W1	**T**	—	—	**P**	—	—	**T**	—	—	**P**	**T**		—	**P**	—	—
	RYP100L7V1	**T**	**T**	**T**	**T**	**P**	—	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**P**	—
	RYP100L7W1	**T**	**T**	**T**	**T**	**P**	—	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**P**	—
	RYP125L7W1	**T**	**T**	**T**	**T**	—	**P**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	—	**P**

FUYP, FAYP, FHYBP, FDYMP and FDYP

The table below contains the possible combinations between indoor units (FUYP, FAYP, FHYBP, FDYMP and FDYP) and outdoor units of the Sky Air L-series.

Outdoor unit \ Indoor unit		FUYP71BV17	FUYP100BV17	FUYP125BV17	FAYP71LV1	FAYP71LV1	FAYP100BV1	FHYBP35B7V1	FHYBP45B7V1	FHYBP60B7V1	FHYBP71B7V1	FHYBP100B7V1	FHYBP125B7V1	FDYMP71L7V1	FDYMP100L7V1	FDYMP125L7V1	FDYP125B7V1
Large c/o	RP71L7V1	**P**	—	—	**P**	**P**	—	**T**	—	—	**P**	—	—	**P**	—	—	—
	RP71L7W1	**P**	—	—	**P**	**P**	—	**T**	—	—	**P**	—	—	**P**	—	—	—
	RP100L7V1	**T**	**P**	—	**T**	**T**	**P**	**T**	**T**	**T**	**T**	**P**	—	**T**	**P**	—	—
	RP100L7W1	**T**	**P**	—	**T**	**T**	**P**	**T**	**T**	**T**	**T**	**P**	—	**T**	**P**	—	—
	RP125L7W1	**T**	—	**P**	**T**	**T**	—	**T**	**T**	**T**	**T**	—	**P**	**T**	—	**P**	**P**
Large h/p	RYP71L7V1	**P**	—	—	**P**	**P**	—	**T**	—	—	**P**	—	—	**P**	—	—	—
	RYP71L7W1	**P**	—	—	**P**	**P**	—	**T**	—	—	**P**	—	—	**P**	—	—	—
	RYP100L7V1	**T**	**P**	—	**T**	**T**	**P**	**T**	**T**	**T**	**T**	**P**	—	**T**	**P**	—	—
	RYP100L7W1	**T**	**P**	—	**T**	**T**	**P**	**T**	**T**	**T**	**T**	**P**	—	**T**	**P**	—	—
	RYP125L7W1	**T**	—	**P**	**T**	**T**	—	**T**	**T**	**T**	**T**	—	**P**	**T**	—	**P**	**P**

1

Part 1
System Outline

What is in this part?

This part contains the following chapters:

1 General Outline: Outdoor Units

1.1 What Is in This Chapter?

Introduction

This chapter contains the following information on the outdoor units:

- Outlook and dimensions
- Installation and service space
- Components.

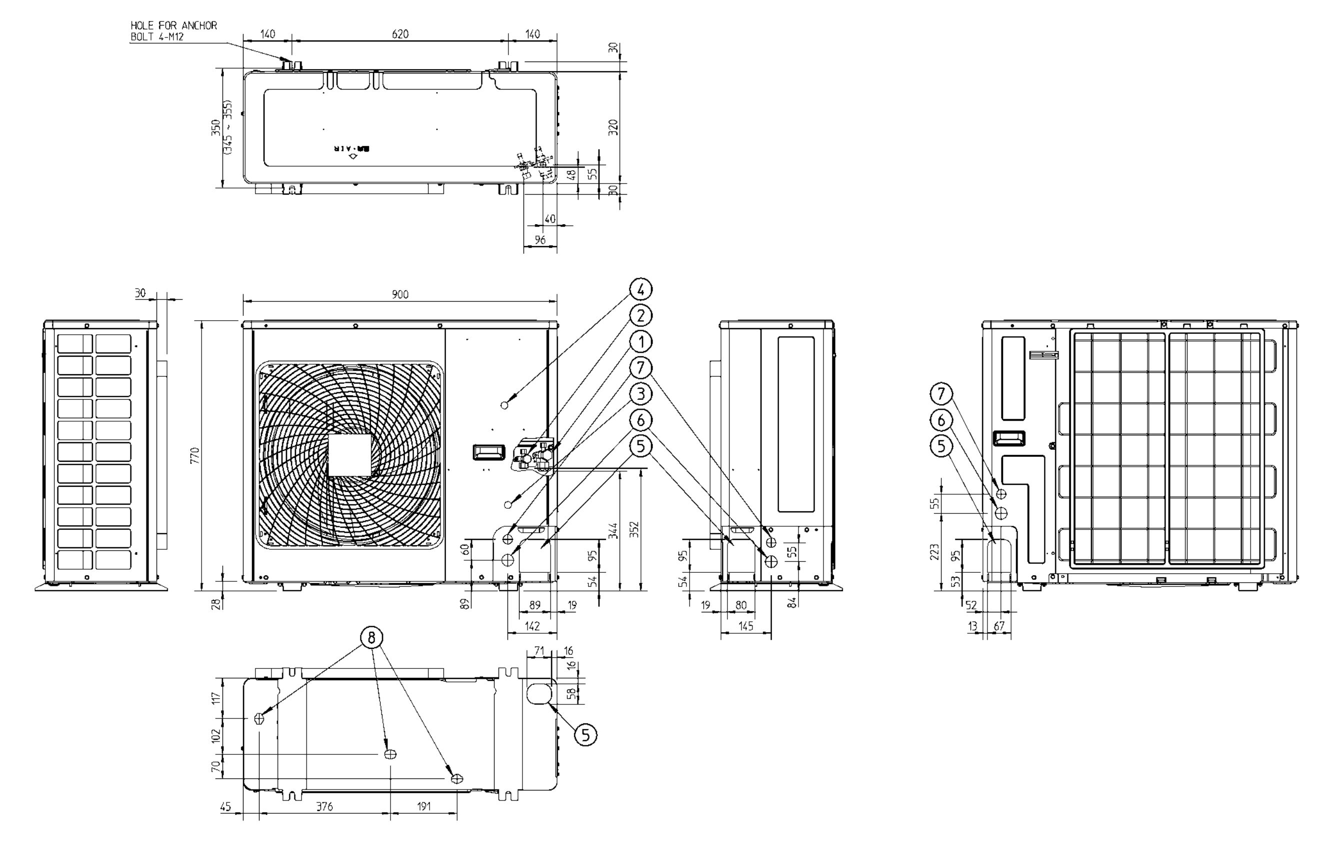
General outline

This chapter contains the following general outlines:

1.2 RP71L7V1, RP71L7W1, RYP71L7V1, RYP71L7W1

Outlook and dimensions

The illustration below shows the outlook and the dimensions of the unit (mm).



Installation and service space

See page 1–10.

Components

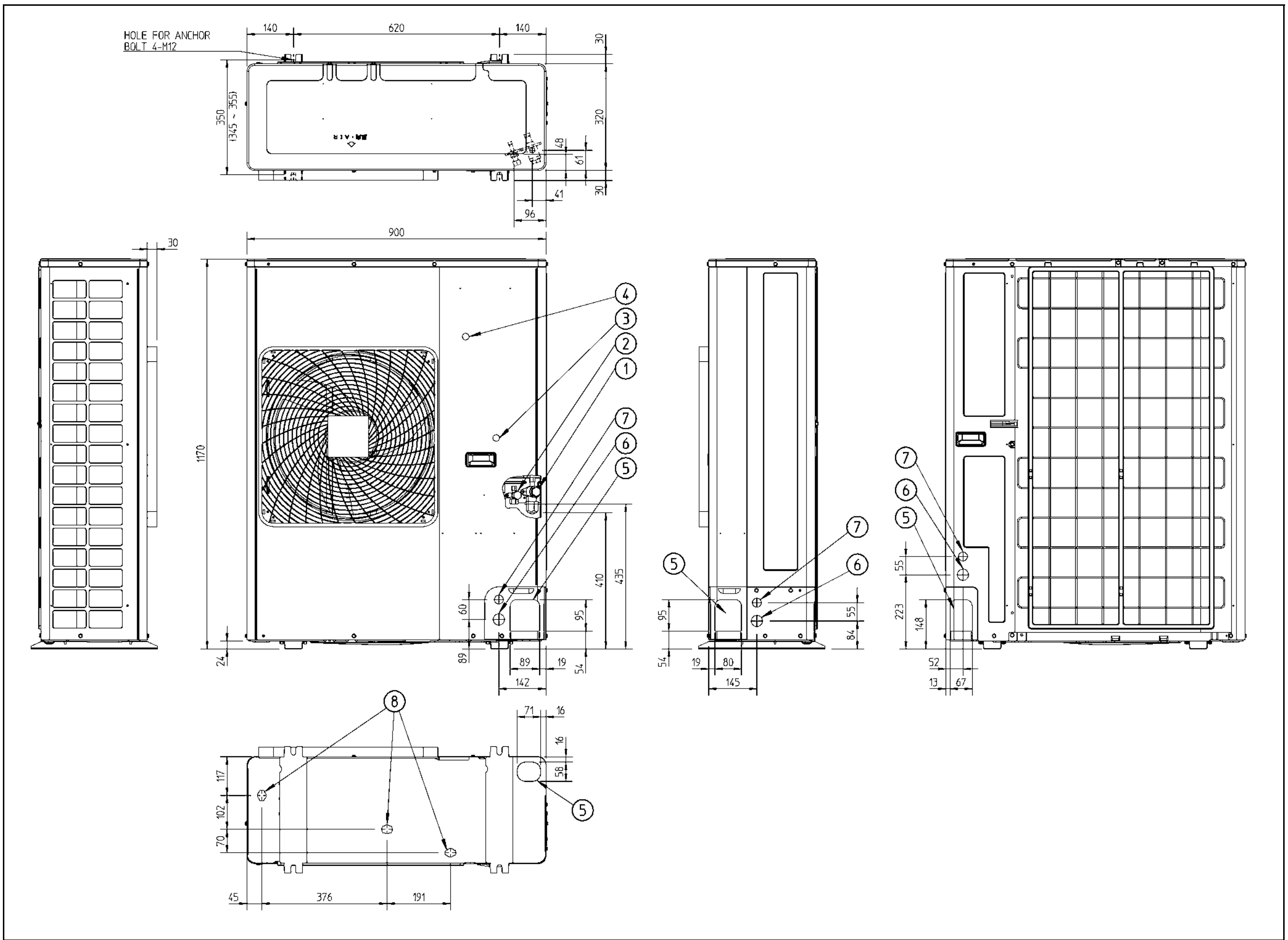
The table below contains the different components of the unit.

No.	Component
1	Gas pipe connection
2	Liquid pipe connection
3	Service port (inside the unit)
4	Grounding terminal M5 (inside the switch box)
5	Refrigerant piping intake
6	Power supply wiring intake
7	Control wiring intake
8	Drain outlet

1.3 RP100L7V1, RP100L7W1, RYP100L7V1, RYP100L7W1

Outlook and dimensions

The illustration below shows the outlook and the dimensions of the unit (mm).



Installation and service space

See page 1–10.

Components

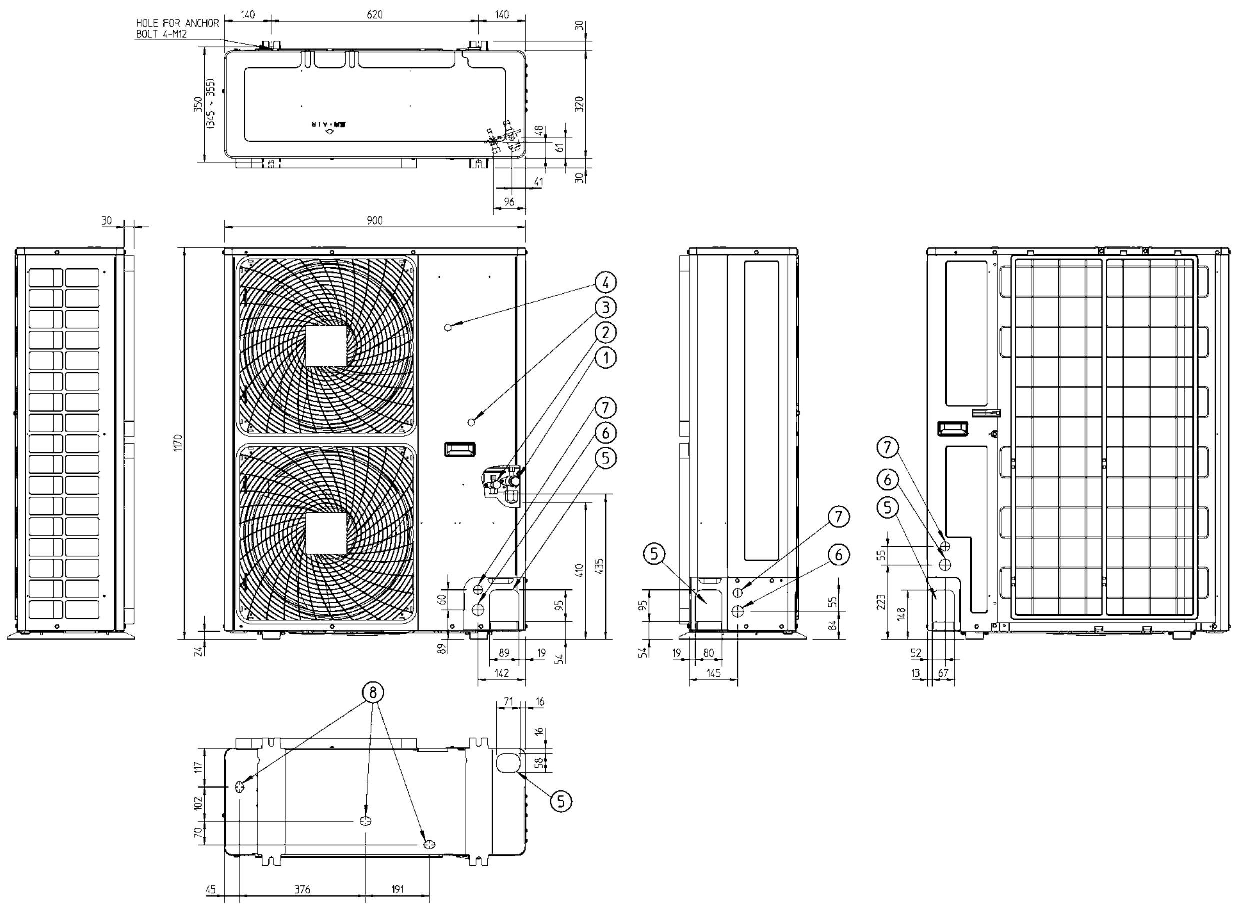
The table below contains the different components of the unit.

No.	Component
1	Gas pipe connection
2	Liquid pipe connection
3	Service port (inside the unit)
4	Grounding terminal M5 (inside the switch box)
5	Refrigerant piping intake
6	Power supply wiring intake
7	Control wiring intake
8	Drain outlet

1.4 RP125L7W1 and RYP125L7W1

Outlook and dimensions

The illustration below shows the outlook and the dimensions of the unit (mm).



Installation and service space

See page 1–10.

Components

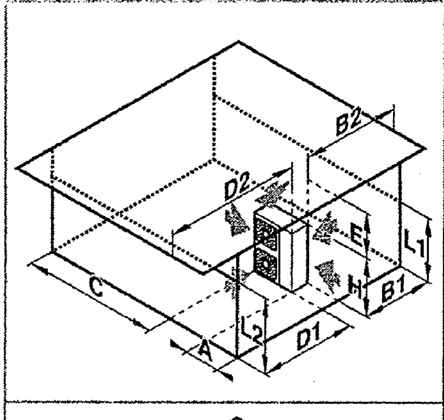
The table below contains the different components of the unit.

No.	Component
1	Gas pipe connection
2	Liquid pipe connection
3	Service port (inside the unit)
4	Grounding terminal M5 (inside the switch box)
5	Refrigerant piping intake
6	Power supply wiring intake
7	Control wiring intake
8	Drain outlet

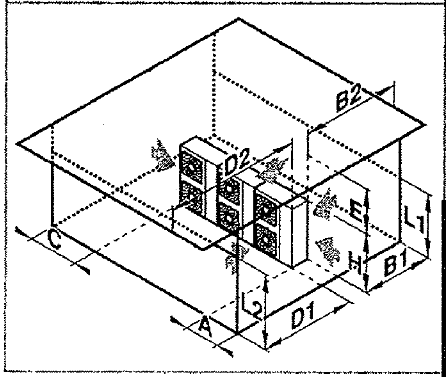
1.5 RP71L7V1, RP71L7W1, RP100L7V1, RP100L7W1, RP125L7W1, RYP71L7V1, RYP71L7W1, RYP100L7V1, RYP100L7W1, RYP125L7W1: Installation and Service Space

Non stacked

The illustrations and table below show the required installation and service space (mm). The values in brackets are for the 100 and 125 class.



							A	B1	B2	C	D1	D2	E	L1/L2	
✓								≥50(100)							
✓		✓	✓				≥100	≥100		≥100					
✓				✓				≥100				≤500	≥1000		
✓		✓	✓	✓			≥150	≥150		≥150		≤500	≥1000		
	✓										≥500				
	✓			✓					≤500		≥500		≥1000		
✓	✓				L1<L2			≥50(100)			≥500				
					L2<L1			≥50(100)			≥500				
✓	✓			✓	L1<L2	L1≤H		≥150(250)	≤500		≥750 ≥1000		≥1000	0<L1≤1/2H 0<L1≤1/2H	1
						H<L1	L1≤H								
					L2<L1	L2≤H		≥50(100) ≥100(200)			≥500	≥500	≥1000	0<L2≤1/2H 1/2H<L2≤H	
						H<L2	L2≤H								



							A	B1	B2	C	D1	D2	E	L1/L2	
✓		✓	✓				≥200	≥200(300)		≥1000					
✓		✓	✓	✓			≥200	≥200(300)		≥1000		≤500	≥1000		
	✓										≥1000				
	✓			✓					≤500		≥1000		≥1000		
✓	✓				L1<L2			≥200(300)			≥1000				
					L2<L1			≥150(250) ≥200(300)			≥1000			0<L2≤1/2H 1/2H<L2≤H	
✓	✓			✓	L1<L2	L1≤H		≥200(300)	≤500		≥1000 ≥1250		≥1000	0<L1≤1/2H 1/2H<L1≤H	1
						H<L1	L1≤H								
					L2<L1	L2≤H		≥150(250) ≥200(300)			≥1000	≤500	≥1000	0<L2≤1/2H 1/2H<L2≤H	2
						H<L2	L2≤H								

Suction side obstacle

Discharge side obstacle

Left side obstacle

Right side obstacle

Top side obstacle

✓ Obstacle is present

1 In these cases, close the bottom of the installation frame to prevent discharged air from being bypassed

2 In these cases, only 2 units can be installed

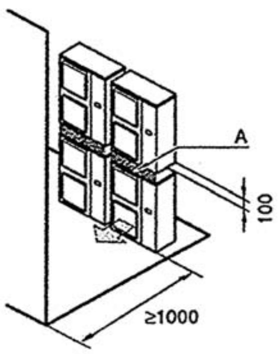
This situation is not allowed

Stacked

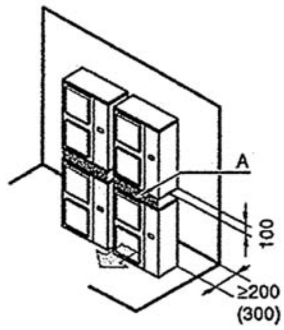
The illustration below shows the required installation and service space (mm). The values in brackets are for the 100 and 125 class.

- ➤ Do not stack more than one unit.
- ➤ ± 100 mm is required for the drain pipe.
- ➤ Seal A in order to prevent outlet air from bypassing.

With obstacles in front of the air outlet side



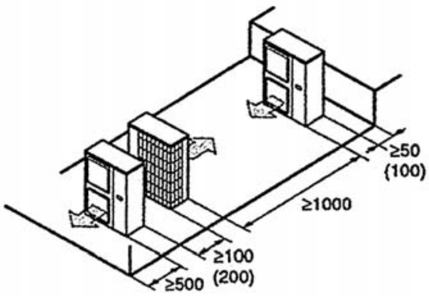
With obstacles in front of the air inlet side



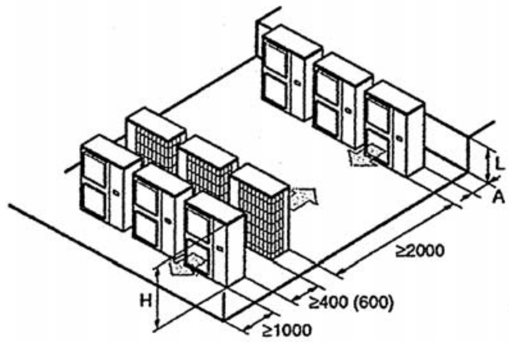
Multiple rows

The illustration below shows the required installation and service space (mm). The values in brackets are for the 100 and 125 class.

One unit per row



Multiple units per row



	L	A
L≤H	0<L≤1/2H	150 (250)
	1/2H < L	200 (300)
H < L	installation impossible	

2 General Outline: Indoor Units

2.1 What Is in This Chapter?

Introduction

This chapter contains the following information on the indoor units:

- Outlook and dimensions
- Installation and service space
- Components.

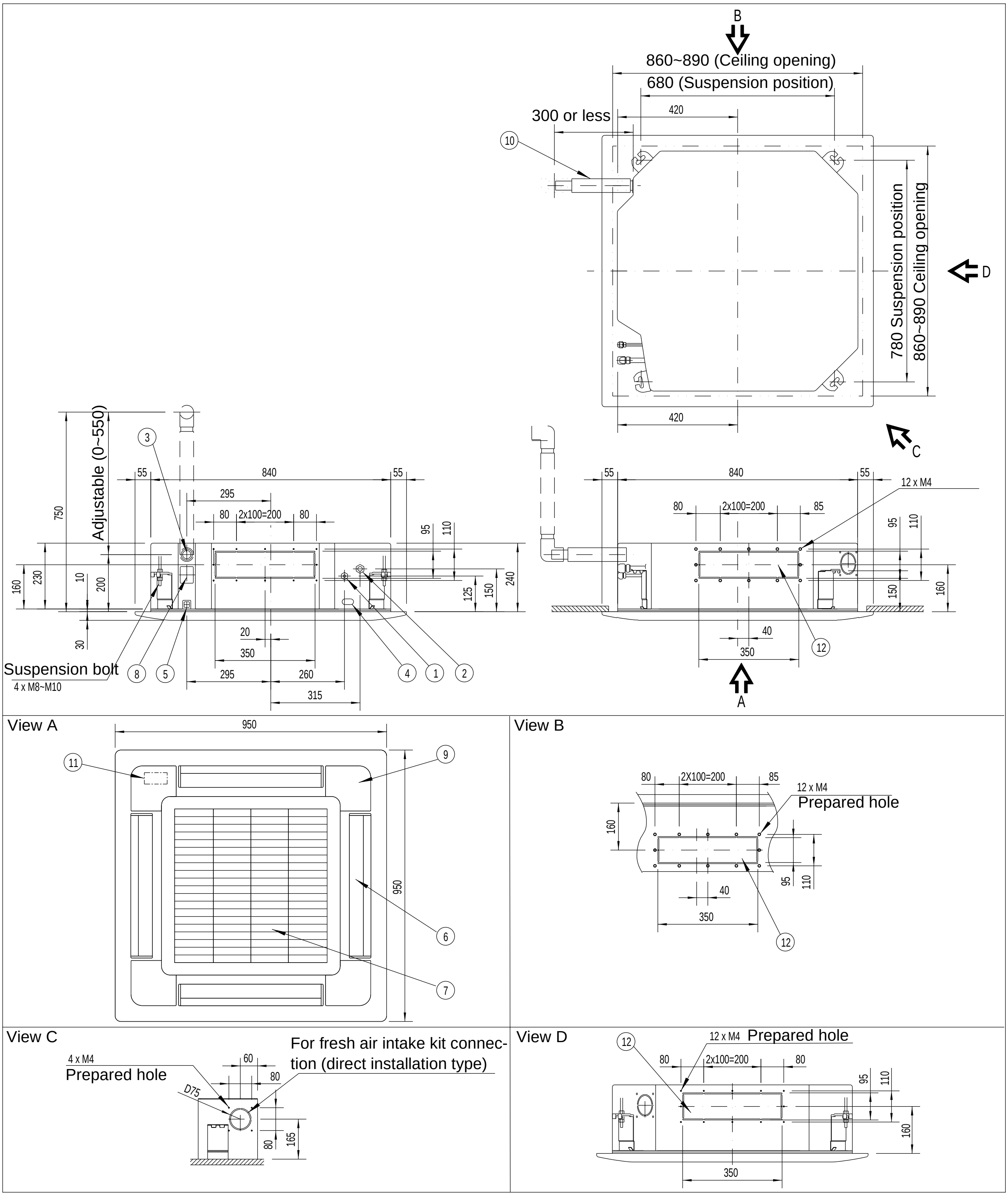
General outline

This chapter contains the following general outlines:

2.2 FHYCP35B7V1, FHYCP45B7V1, FHYCP60B7V1 and FHYCP71B7V1

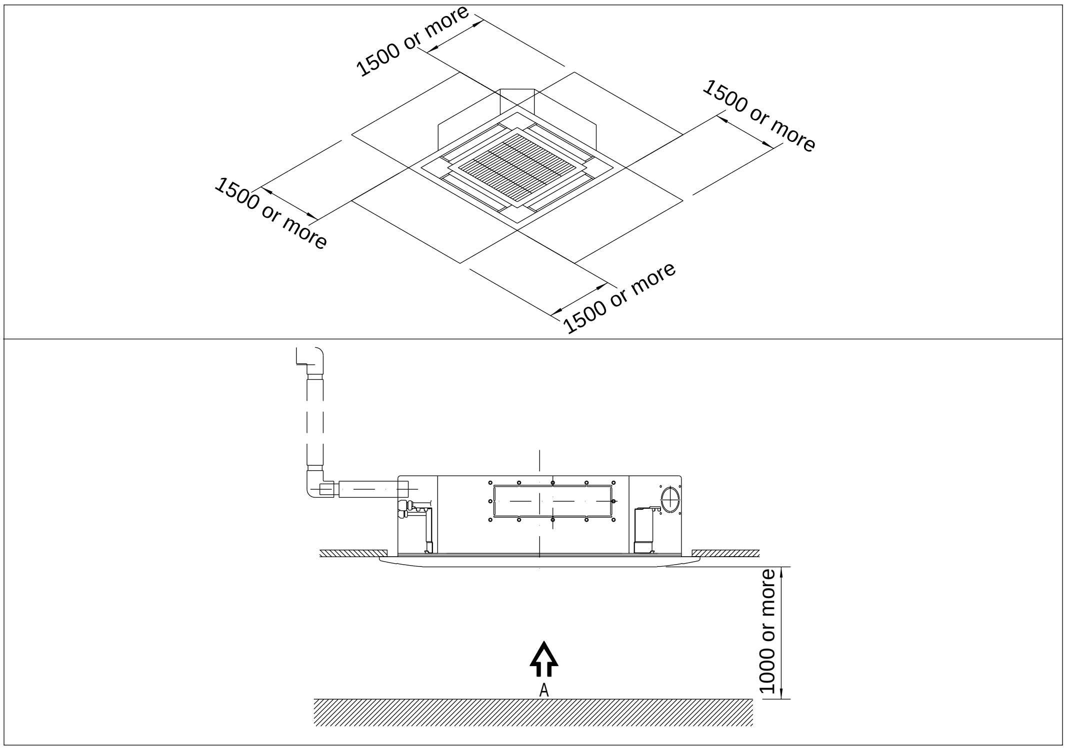
Outlook and dimensions

The illustration below shows the outlook and the dimensions of the unit (mm).



Installation and service space

The illustration below shows the required installation and service space. When a discharge grille is closed (e.g. 3-way blow application), the required space is 200 mm or more (mm).



Components

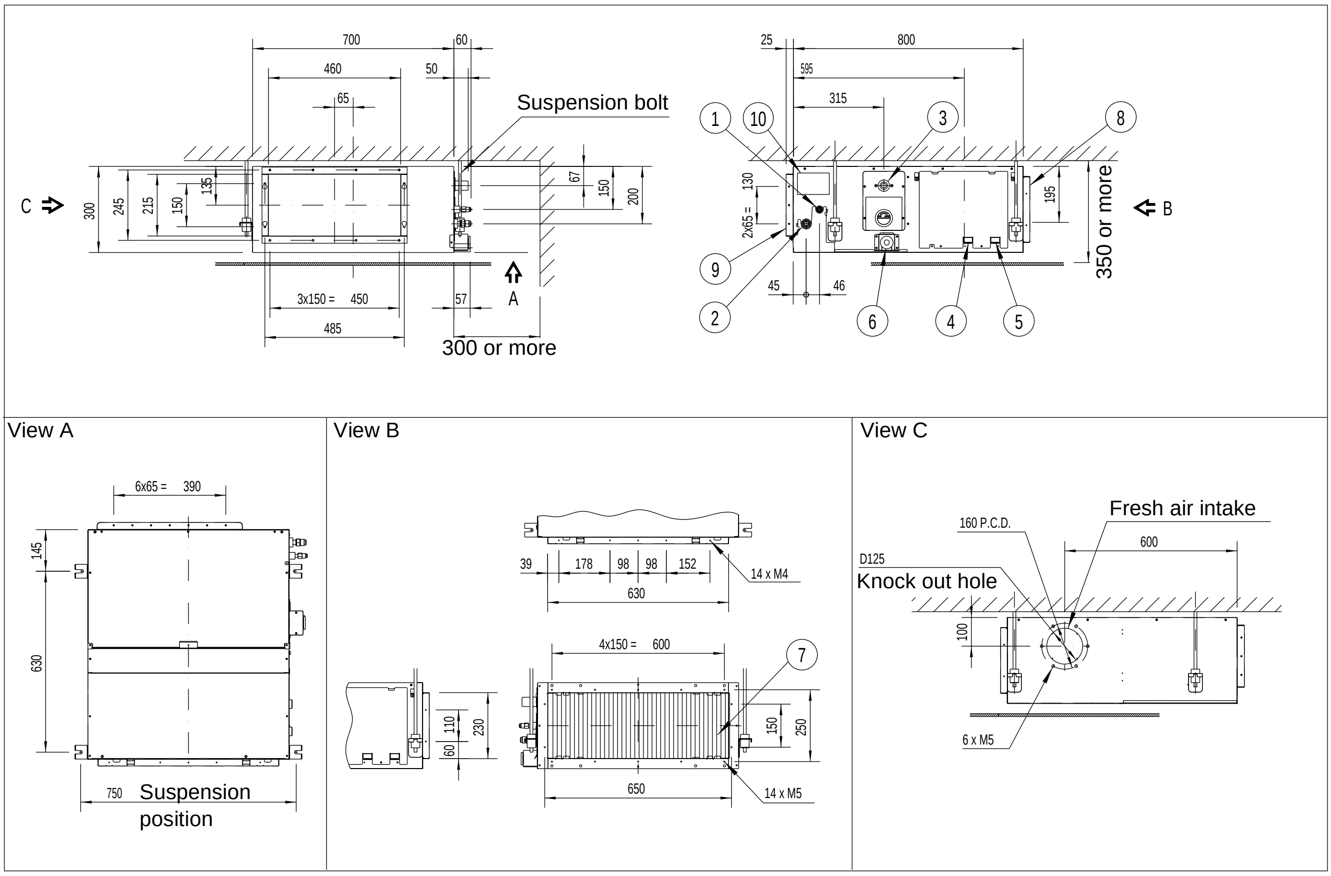
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection
4	Power supply connection
5	Transmission wiring connection
6	Air discharge grille
7	Air suction grille
8	Water supply intake
9	Corner decoration cover
10	Drain hose
11	In case a wireless remote controller is used, this position is a signal receiver.
12	Branch duct connection

2.3 FHYBP35B7V1 and FHYBP45B7V1

Outlook, dimensions and installation and service space

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

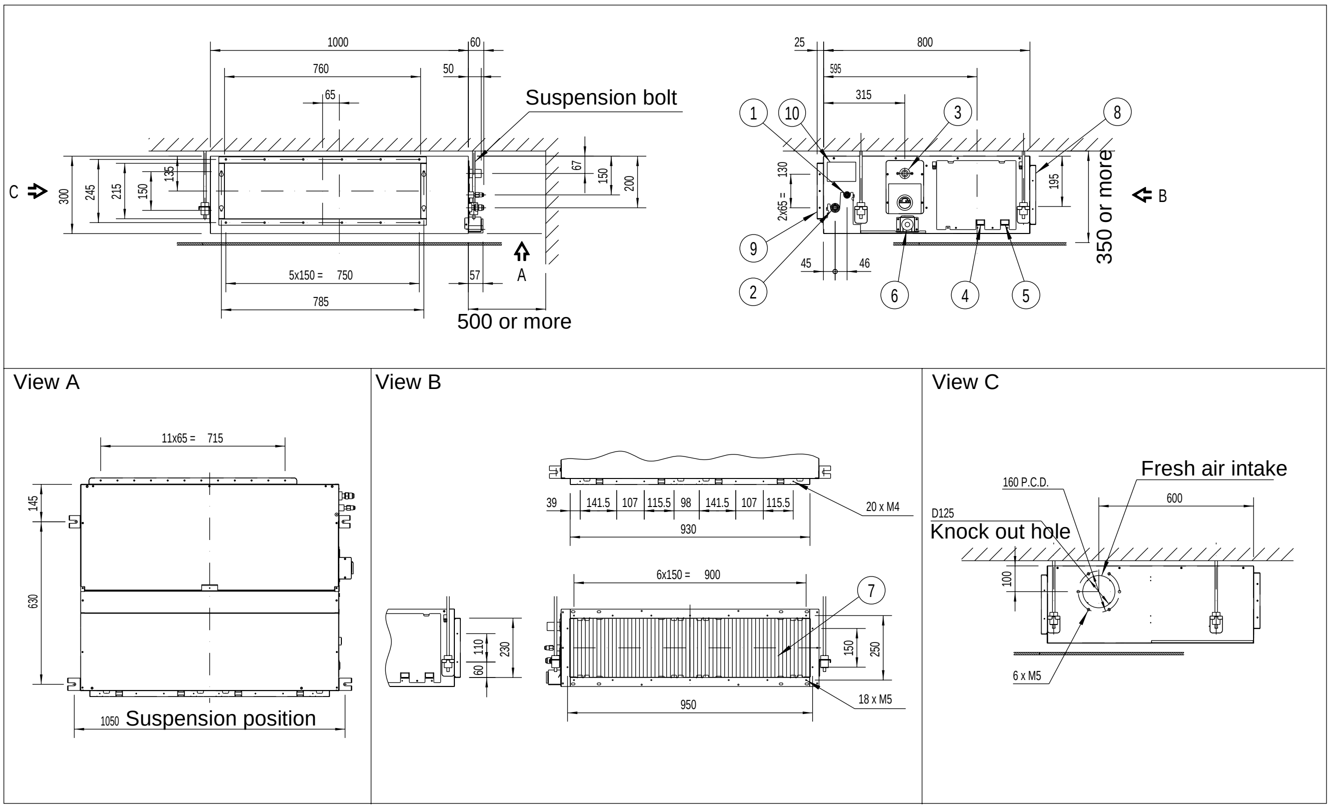
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection (O.D. 32 mm, I.D. 25 mm)
4	Remote controller wiring connection
5	Power supply connection
6	Drain hole (O.D. 32 mm, I.D. 25 mm)
7	Air filter
8	Air suction side
9	Air discharge side
10	Name plate

2.4 FHYBP60B7V1 and FHYBP71B7V1

Outlook, dimensions and installation and service space

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

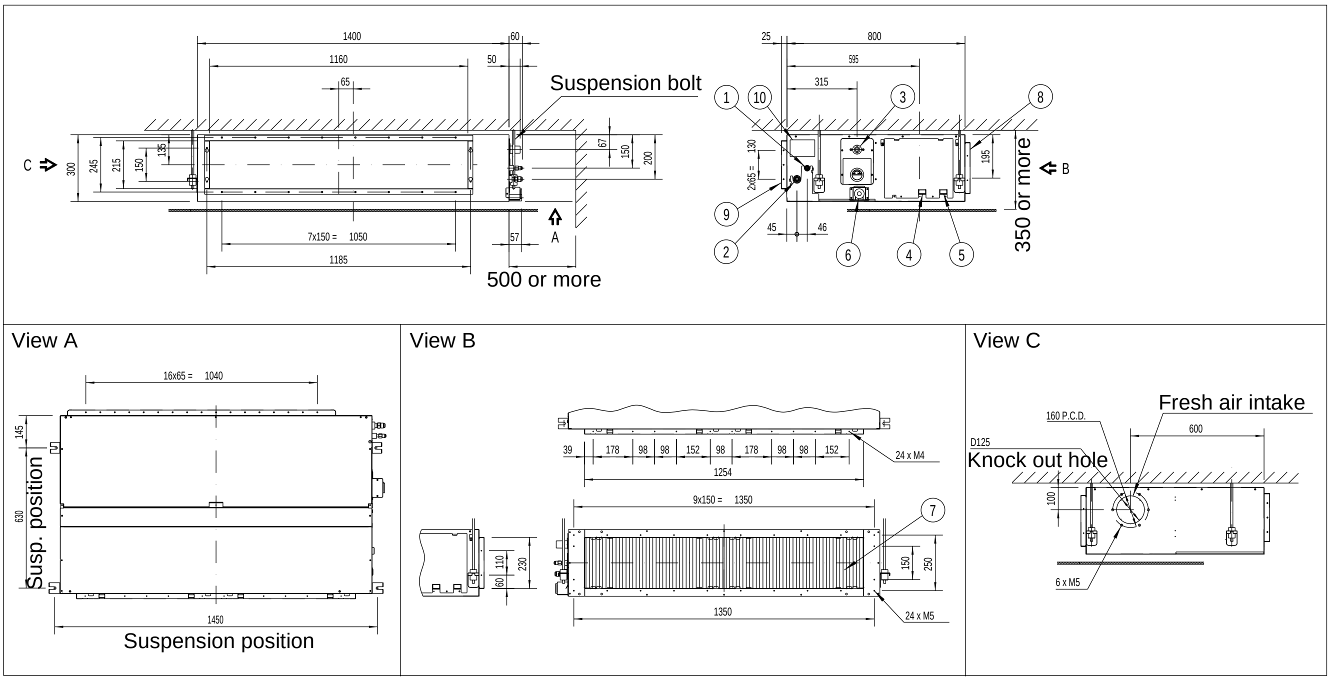
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection (O.D. 32 mm, I.D. 25 mm)
4	Remote controller wiring connection
5	Power supply connection
6	Drain hole (O.D. 32 mm, I.D. 25 mm)
7	Air filter
8	Air suction side
9	Air discharge side
10	Name plate

2.5 FHYBP100B7V1 and FHYBP125B7V1

Outlook, dimensions and installation and service space

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

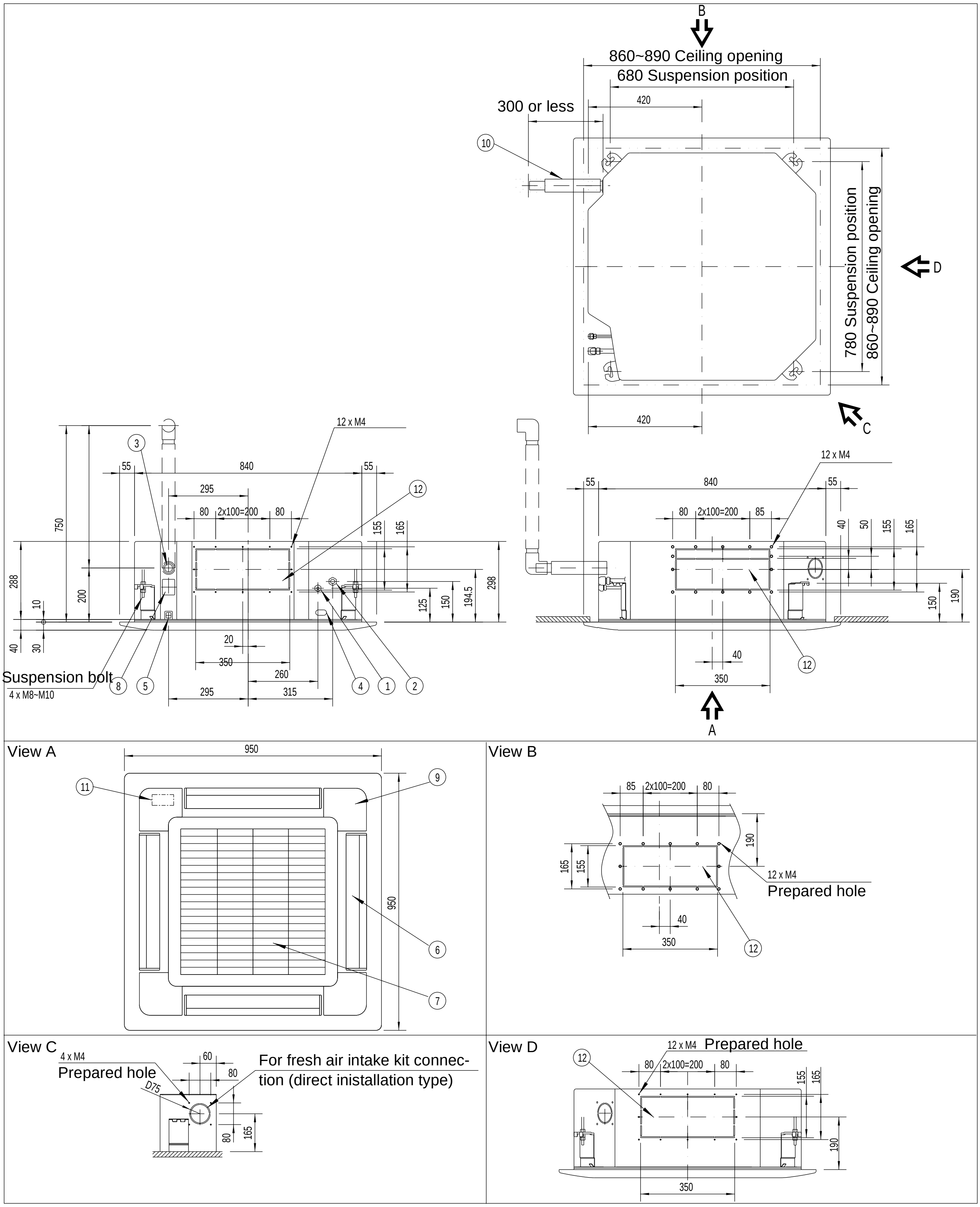
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection (O.D. 32 mm, I.D. 25 mm)
4	Remote controller wiring connection
5	Power supply connection
6	Drain hole (O.D. 32 mm, I.D. 25 mm)
7	Air filter
8	Air suction side
9	Air discharge side
10	Name plate

2.6 FHYCP100B7V1 and FHYCP125B7V1

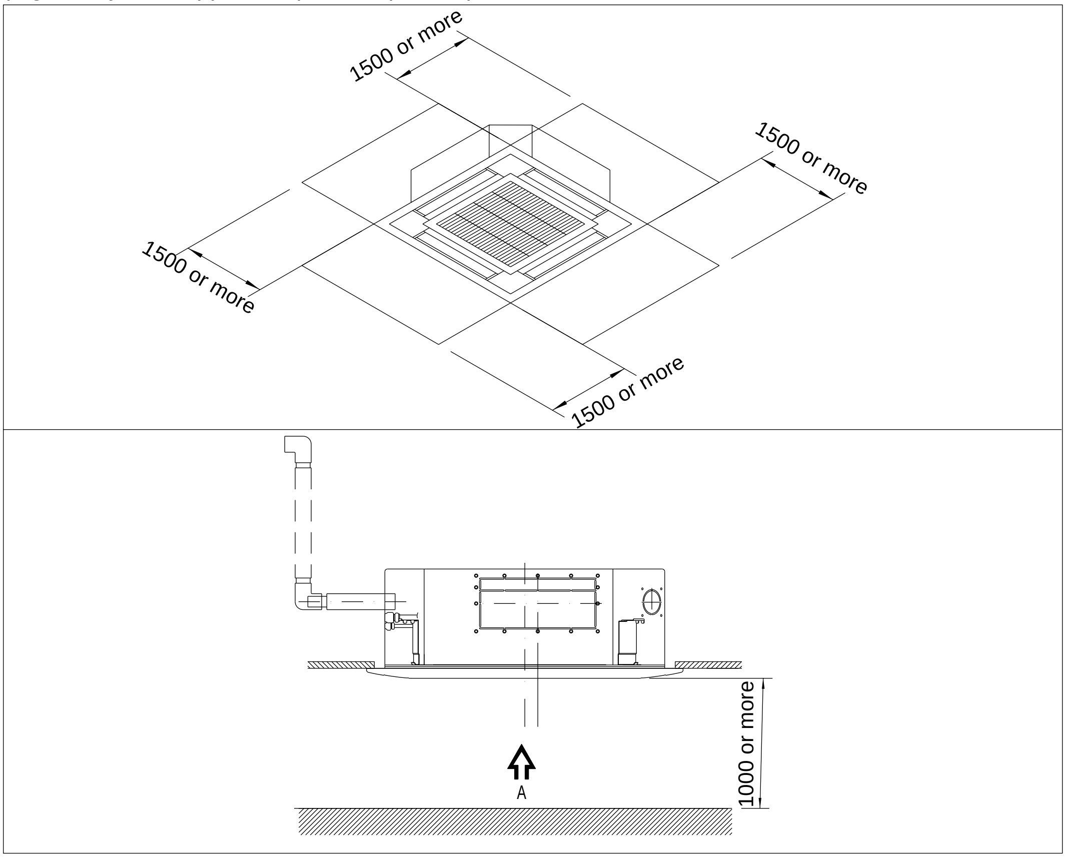
Outlook and dimensions

The illustration below shows the outlook and the dimensions of the unit (mm).



Installation and service space

The illustration below shows the installation and service space (mm). When a discharge grille is closed (e.g. 3-way blow application), the required space is 200 mm or more.



Components

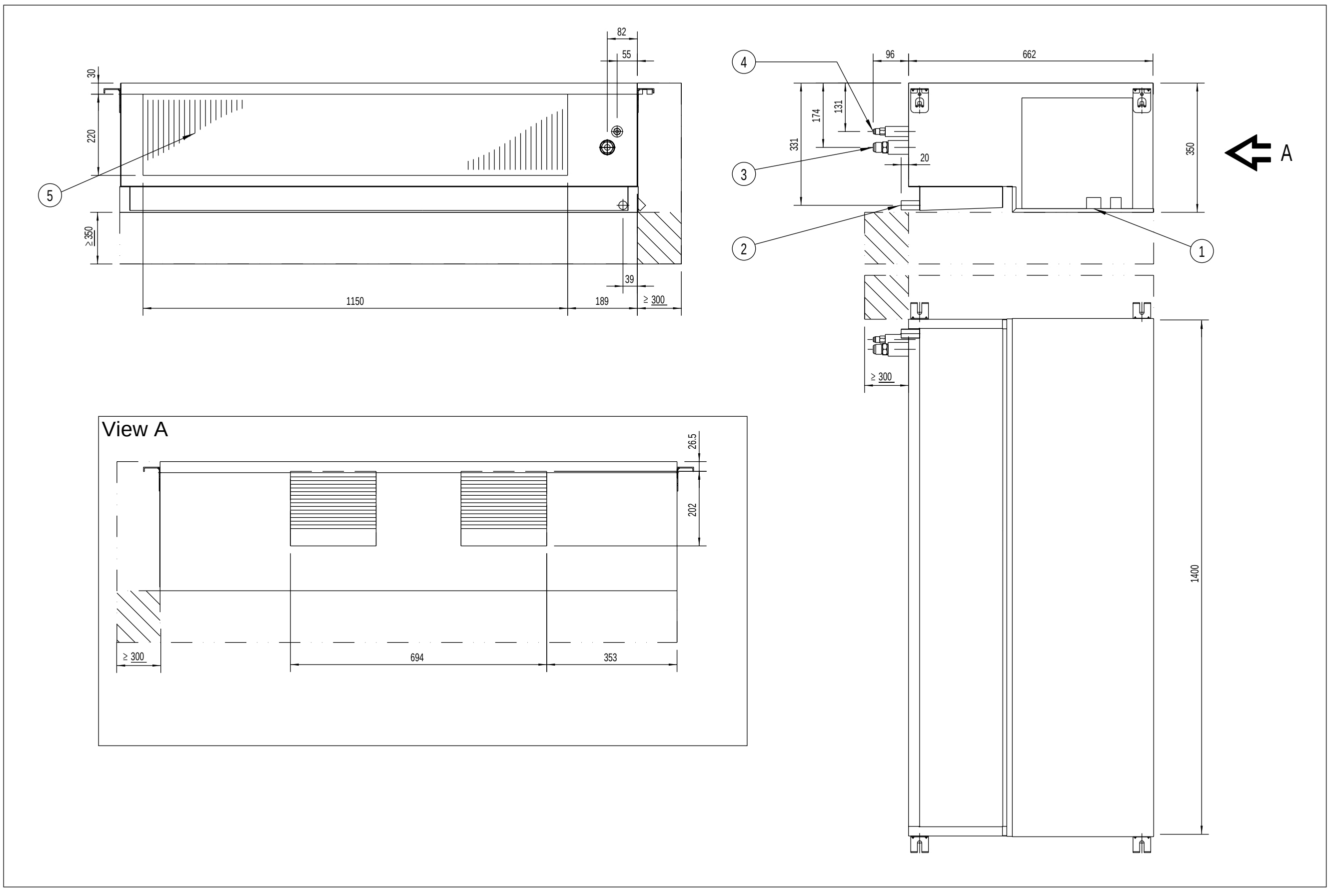
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection (O.D. 32 mm, I.D. 25 mm)
4	Power supply connection
5	Transmission wiring connection
6	Air discharge grille
7	Air suction grille
8	Water supply intake
9	Corner decoration cover
10	Drain hose (O.D. 32 mm)
11	In case a wireless remote controller is used, this position is a signal receiver.
12	Branch duct connection

2.7 FDYP125B7V1

Outlook, dimensions and installation and service space

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Service space

Components

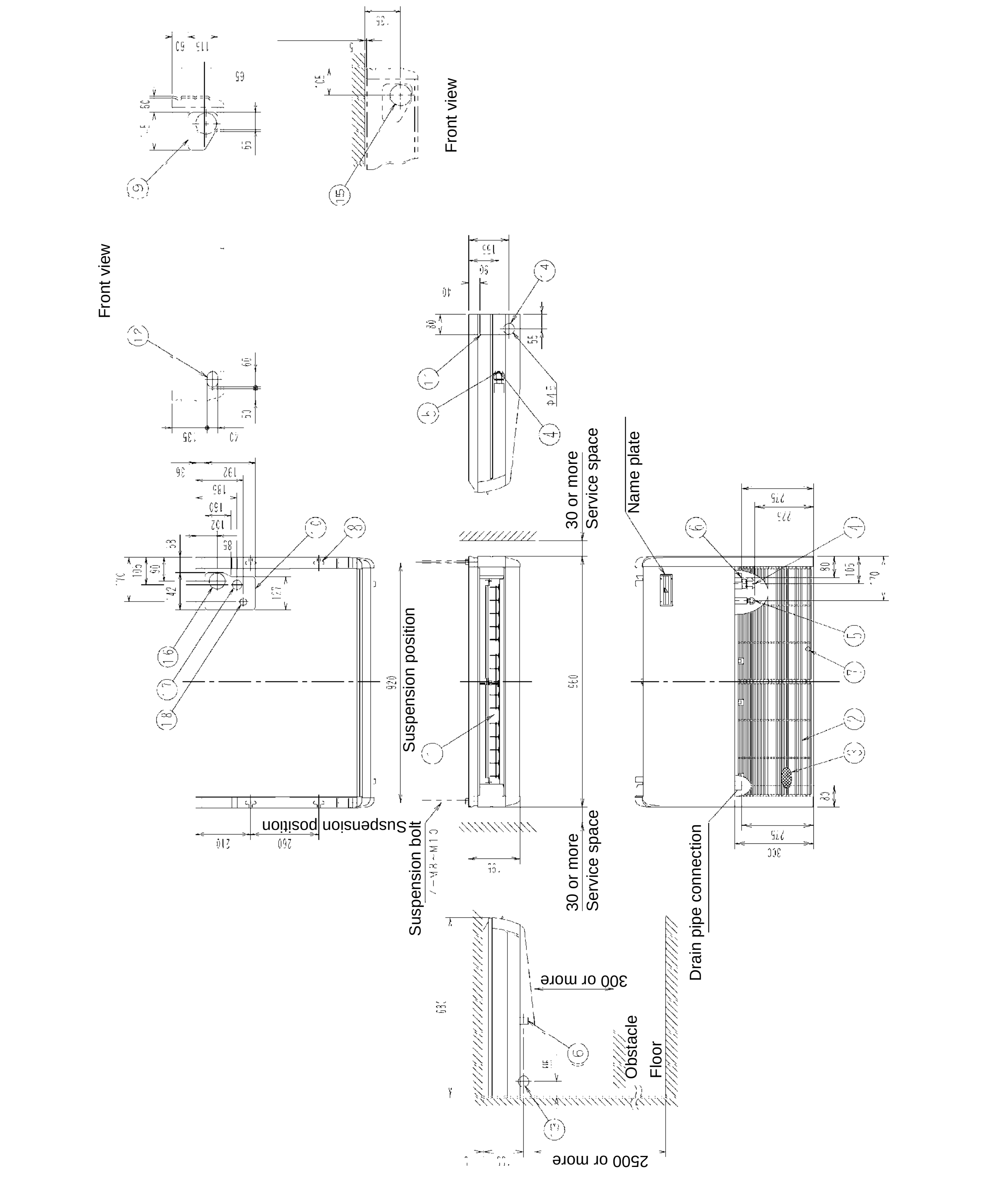
The table below contains the different components of the unit.

No.	Component
1	Power supply intake
2	Drain connection (O.D. 25 mm)
3	Gas pipe connection
4	Liquid pipe connection
5	Filter

2.8 FHYP35BV1 and FHYP45BV1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

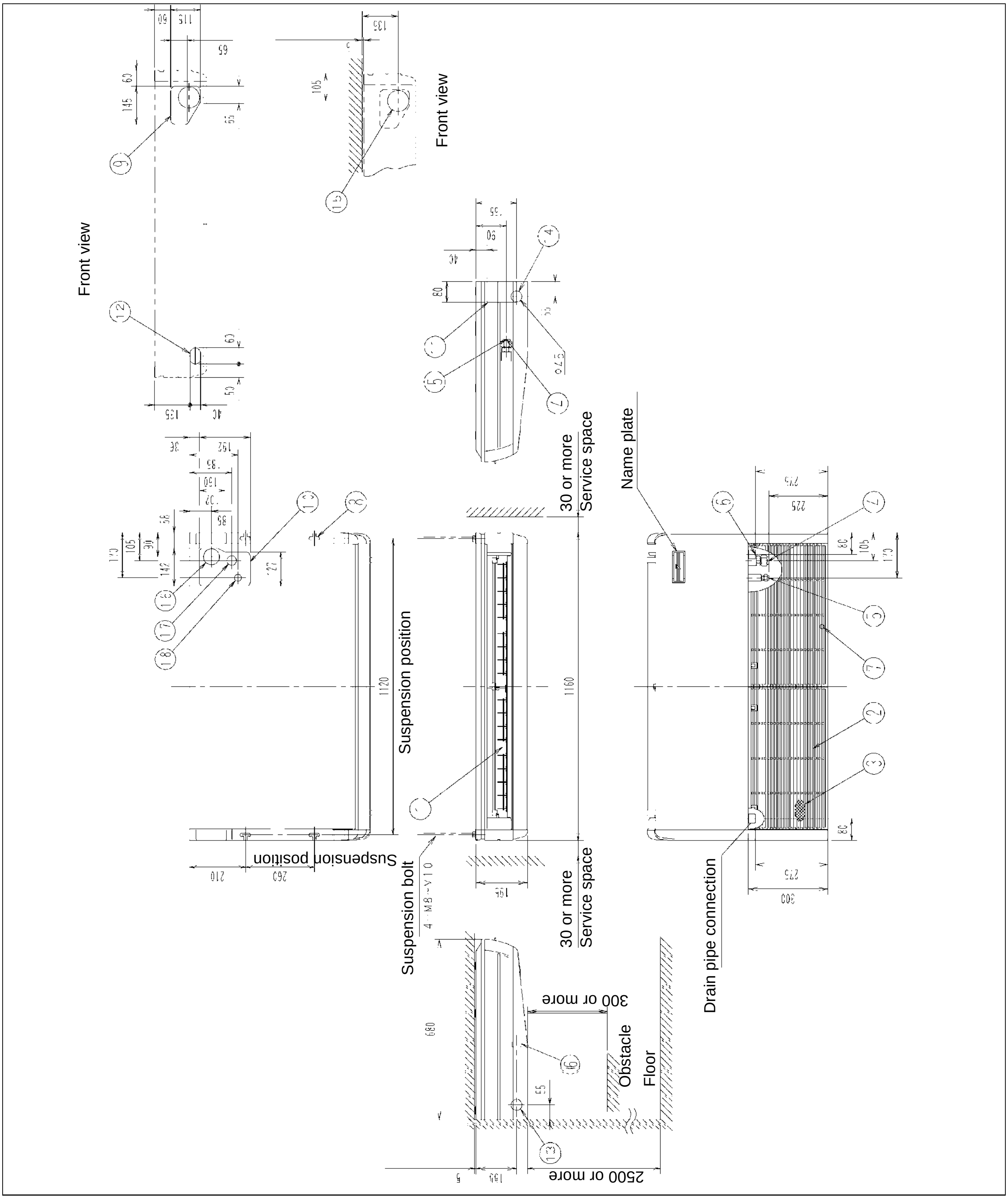
The table below contains the different components of the unit.

No.	Component
1	Air discharge grille
2	Air suction grille
3	Air filter
4	Gas pipe connection
5	Liquid pipe connection
6	Drain pipe connection
7	Grounding terminal (inside the electric components box) M4
8	Suspension bracket
9	Backward piping and wiring connection opening lid
10	Upward piping and wiring connection opening lid
11	Right side pipe connection (slit hole)
12	Left back drain pipe connection (slit hole)
13	Left side drain pipe connection (slit hole)
14	Right side drain pipe connection (slit hole)
15	Wall hole for taking out in piping back (∅ 100 mm)
16	Upward drain pipe connection (∅ 60 mm)
17	Upward gas pipe connection (∅ 36 mm)
18	Upward liquid pipe connection (∅ 26 mm)
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.9 FHYP60BV1 and FHYP71BV1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

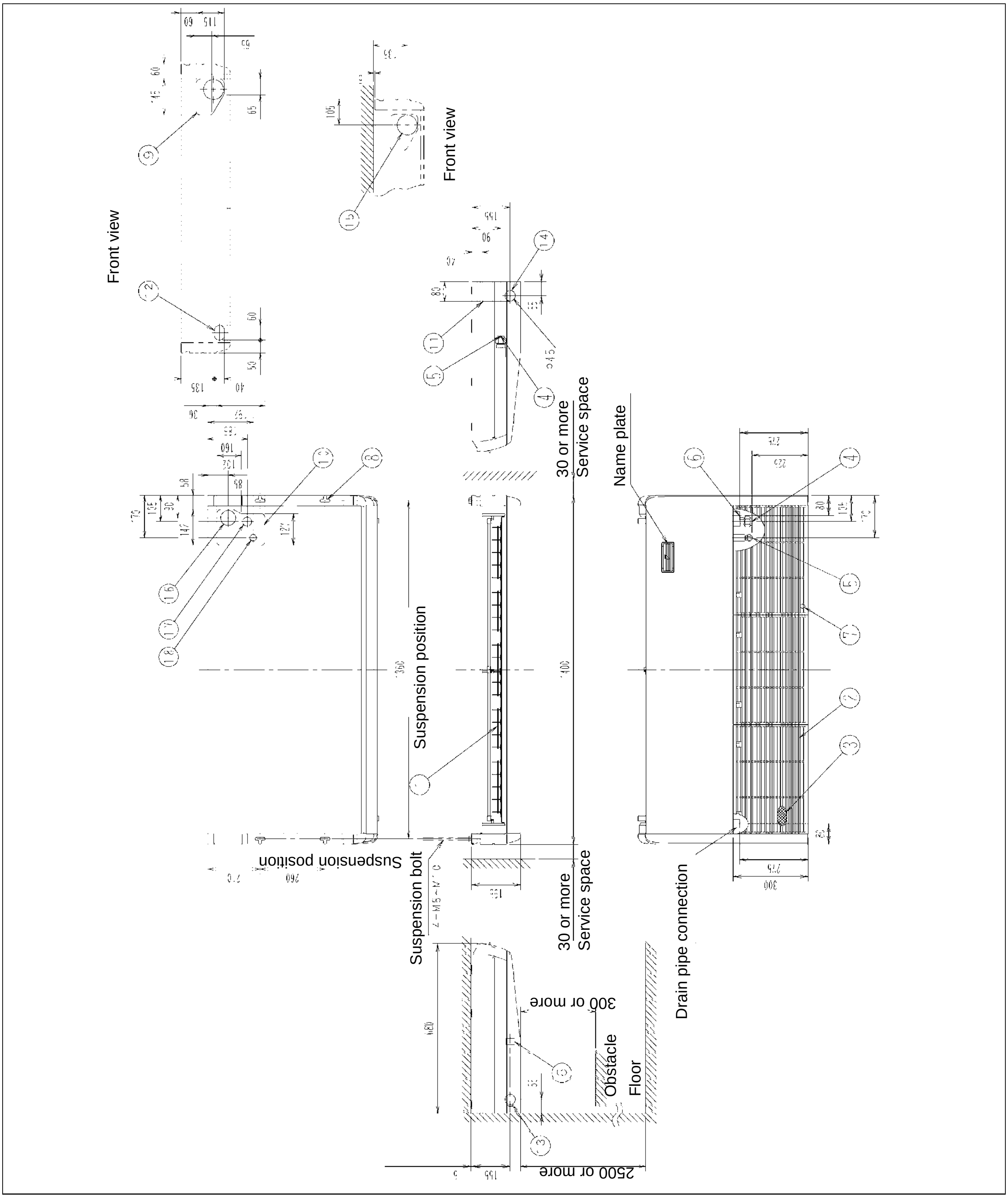
The table below contains the different components of the unit.

No.	Component
1	Air discharge grille
2	Air suction grille
3	Air filter
4	Gas pipe connection
5	Liquid pipe connection
6	Drain pipe connection
7	Grounding terminal (inside the electric components box) M4
8	Suspension bracket
9	Backward piping and wiring connection opening lid
10	Upward piping and wiring connection opening lid
11	Right side pipe connection (slit hole)
12	Left back drain pipe connection (slit hole)
13	Left side drain pipe connection (slit hole)
14	Right side drain pipe connection (slit hole)
15	Wall hole for taking out in piping back (∅ 100 mm)
16	Upward drain pipe connection (∅ 60 mm)
17	Upward gas pipe connection (∅ 36 mm)
18	Upward liquid pipe connection (∅ 26 mm)
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.10 FHYP100BV1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

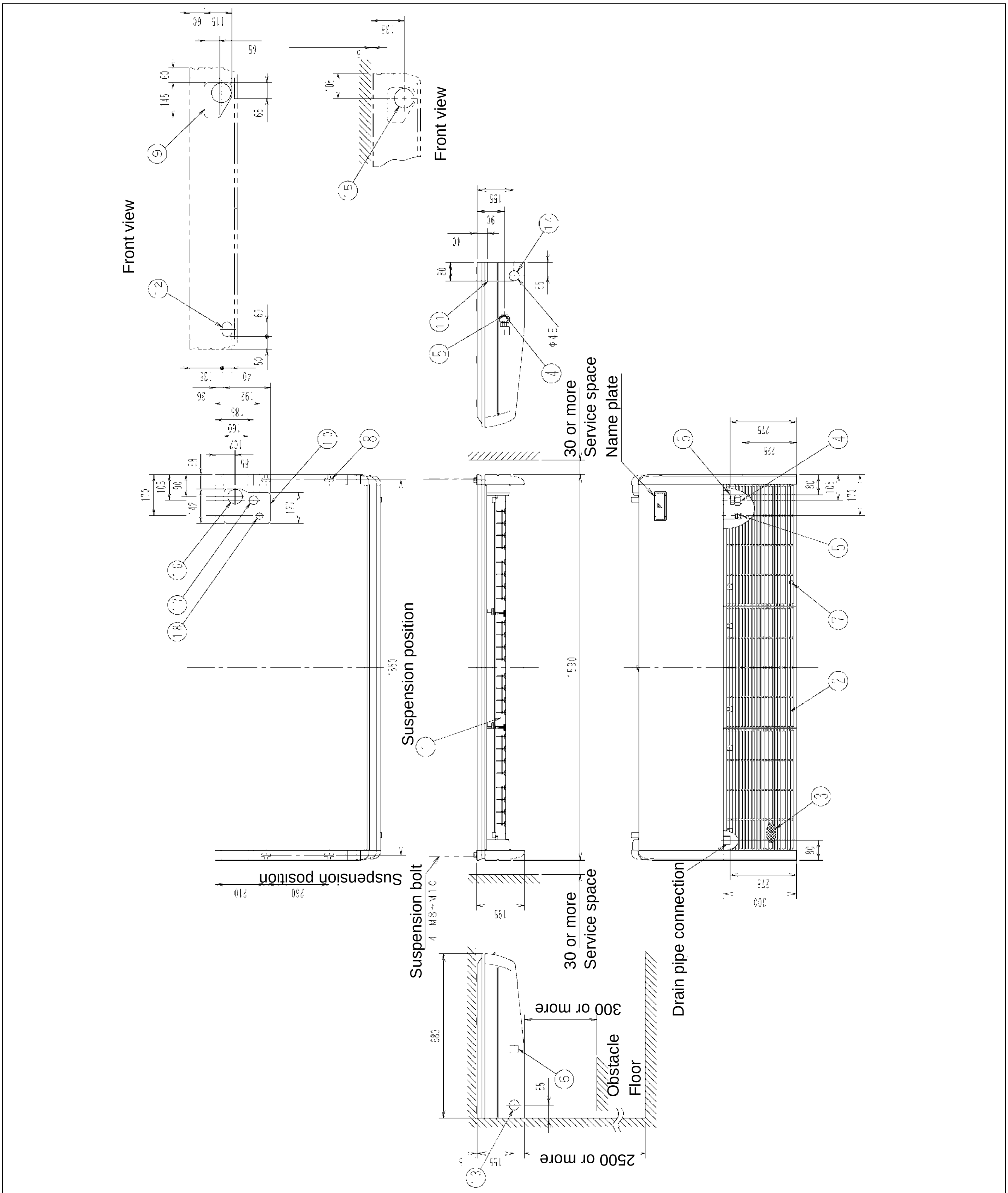
The table below contains the different components of the unit.

No.	Component
1	Air discharge grille
2	Air suction grille
3	Air filter
4	Gas pipe connection
5	Liquid pipe connection
6	Drain pipe connection
7	Grounding terminal (inside the electric components box) M4
8	Suspension bracket
9	Backward piping and wiring connection opening lid
10	Upward piping and wiring connection opening lid
11	Right side pipe connection (slit hole)
12	Left back drain pipe connection (slit hole)
13	Left side drain pipe connection (slit hole)
14	Right side drain pipe connection (slit hole)
15	Wall hole for taking out in piping back (∅ 100 mm)
16	Upward drain pipe connection (∅ 60 mm)
17	Upward gas pipe connection (∅ 36 mm)
18	Upward liquid pipe connection (∅ 26 mm)
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.11 FHYP125BV1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

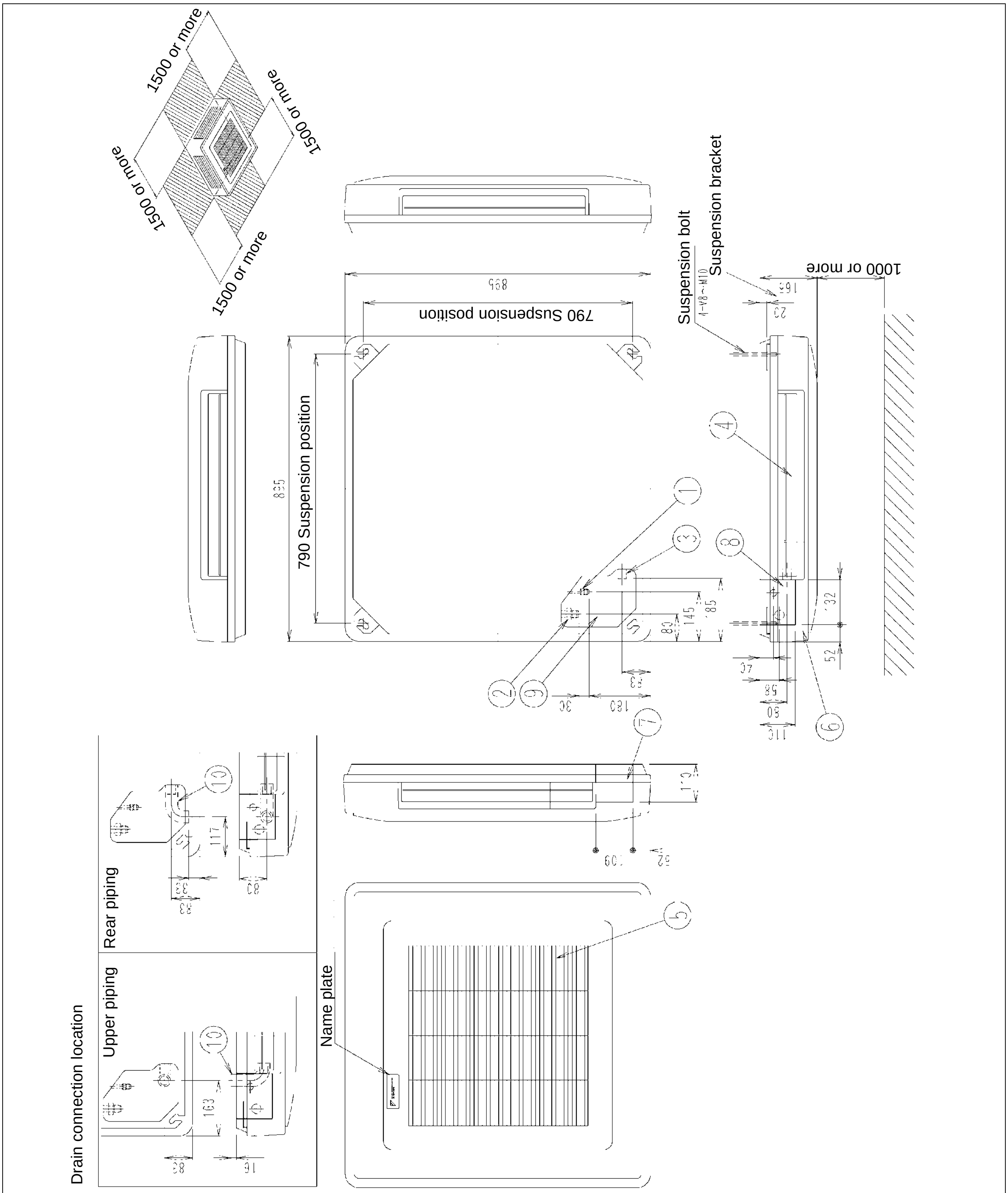
The table below contains the different components of the unit.

No.	Component
1	Air discharge grille
2	Air suction grille
3	Air filter
4	Gas pipe connection
5	Liquid pipe connection
6	Drain pipe connection
7	Grounding terminal (inside the electric components box) M4
8	Suspension bracket
9	Backward piping and wiring connection opening lid
10	Upward piping and wiring connection opening lid
11	Right side pipe connection (slit hole)
12	Left back drain pipe connection (slit hole)
13	Left side drain pipe connection (slit hole)
14	Right side drain pipe connection (slit hole)
15	Wall hole for taking out in piping back (∅ 100 mm)
16	Upward drain pipe connection (∅ 60 mm)
17	Upward gas pipe connection (∅ 36 mm)
18	Upward liquid pipe connection (∅ 26 mm)
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.12 FUYP71BV17

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

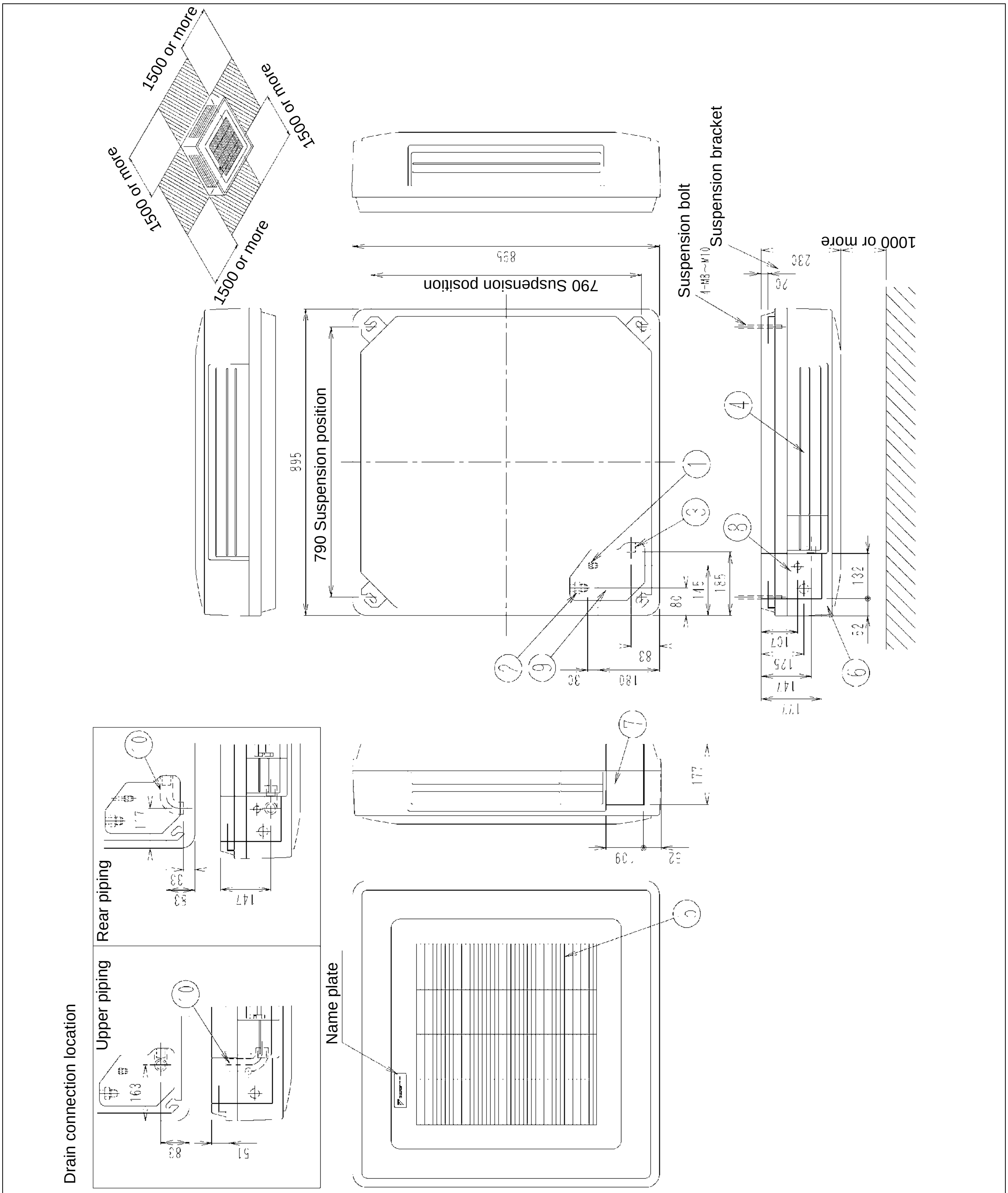
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection
4	Air outlet
5	Air suction grille
6	Corner decoration panel
7	Right pipe / wiring connection
8	Rear pipe / wiring connection
9	Pipe through cover
10	Accessory drain elbow
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.13 FUYP100BV17 and FUYP125BV17

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

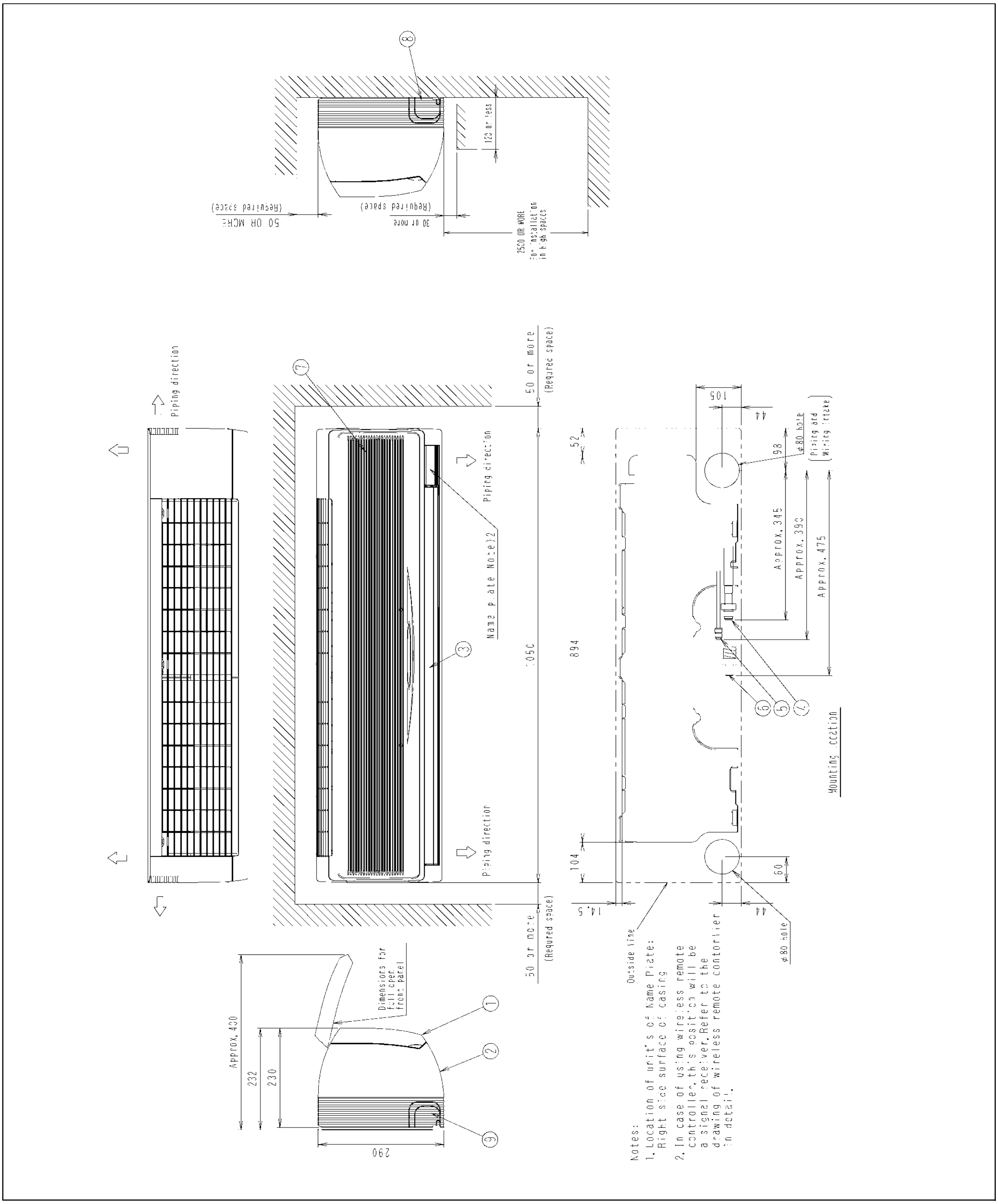
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection
4	Air outlet
5	Air suction grille
6	Corner decoration panel
7	Right pipe / wiring connection
8	Rear pipe / wiring connection
9	Pipe through cover
10	Accessory drain elbow
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.14 FAYP71LV1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).Components



Components

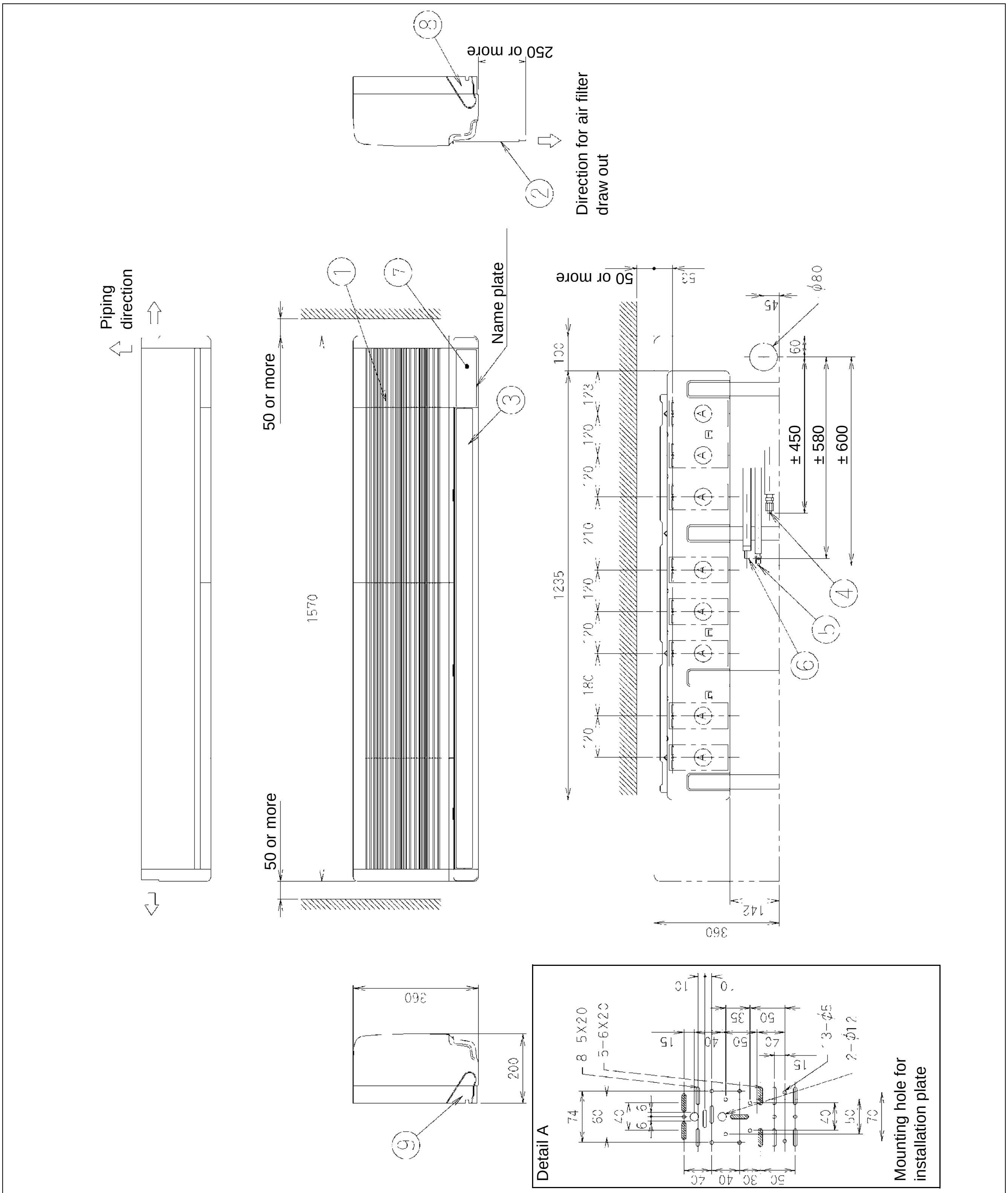
The table below contains the different components of the unitThe table below contains the different components of the unit.

No.	Component
1	Front panel
2	Front grill
3	Air outlet
4	Gas pipe
5	Liquid pipe
6	Drain hose
7	Grounding terminal
8	Right side pipe connection hole
9	Left side pipe connection hole

2.15 FAYP100BV1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

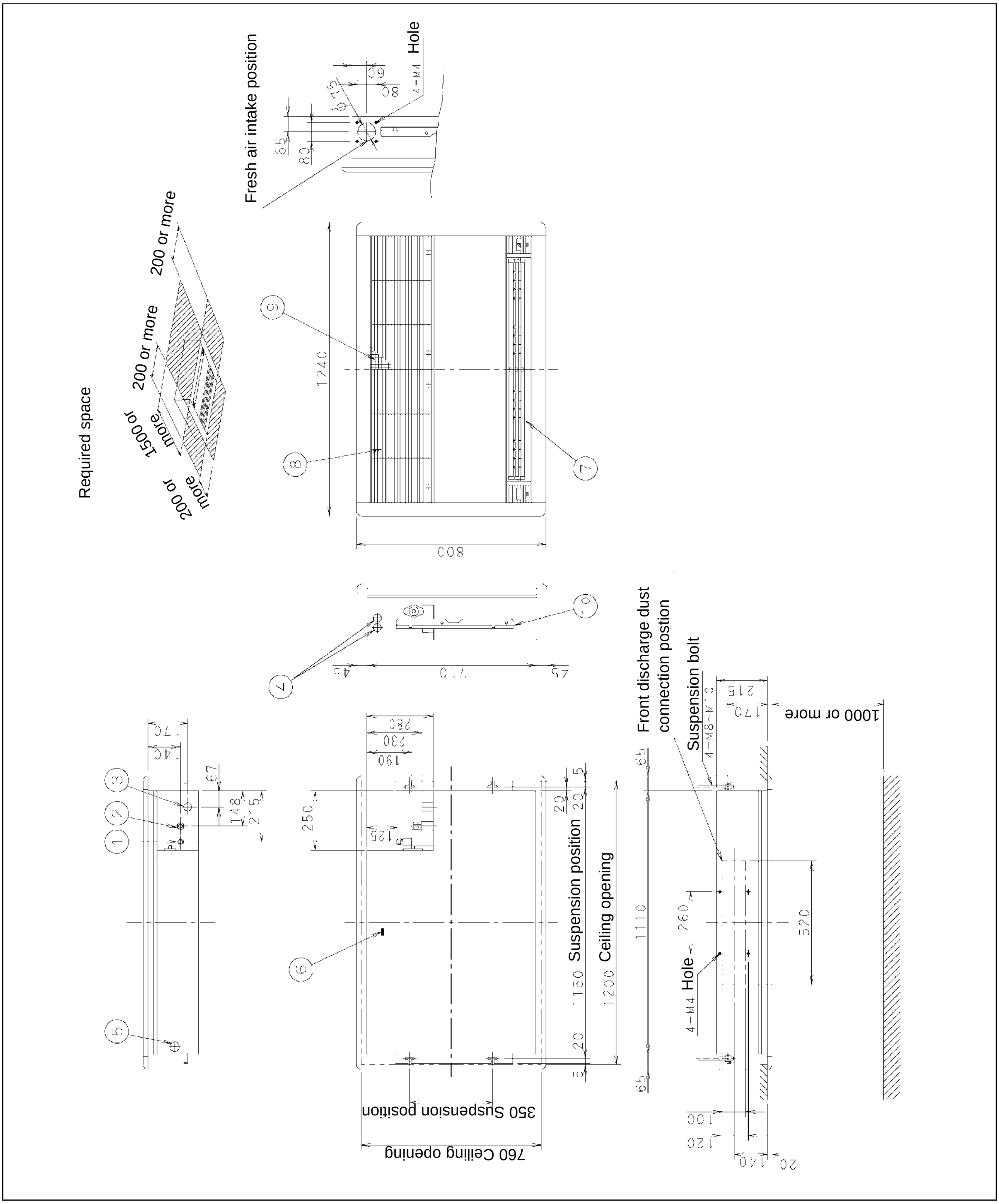
The table below contains the different components of the unit.

No.	Component
1	Front grille
2	Air filter
3	Discharge outlet
4	Gas pipe connection
5	Liquid pipe connection
6	Drain pipe connection (O.D. 26 mm)
7	Grounding terminal M4 (inside the cover)
8	Slit hole for right piping connection
9	Slit hole for left piping connection
—	Name plate: In case of a wireless remote controller, this position is a signal receiver.

2.16 FHYKP35BV17 and FHYKP45BV17

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

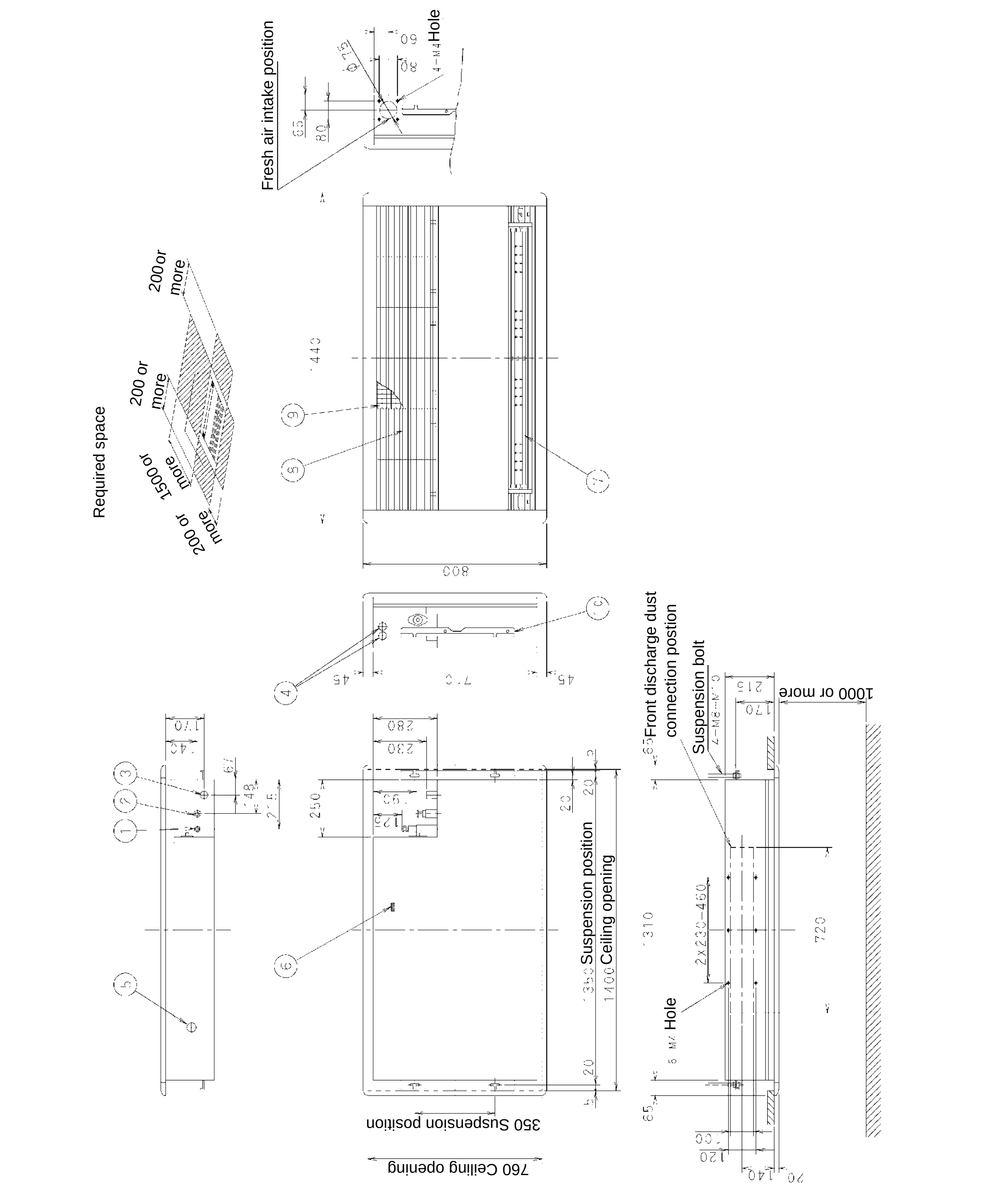
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection
4	Wire intake
5	Wire intake for remote control
6	Grounding terminal M4 (inside the switch box)
7	Air discharge grille
8	Air suction grille
9	Air filter
10	Suspension bracket

2.17 FHYKP60BV17 and FHYKP71BV17

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

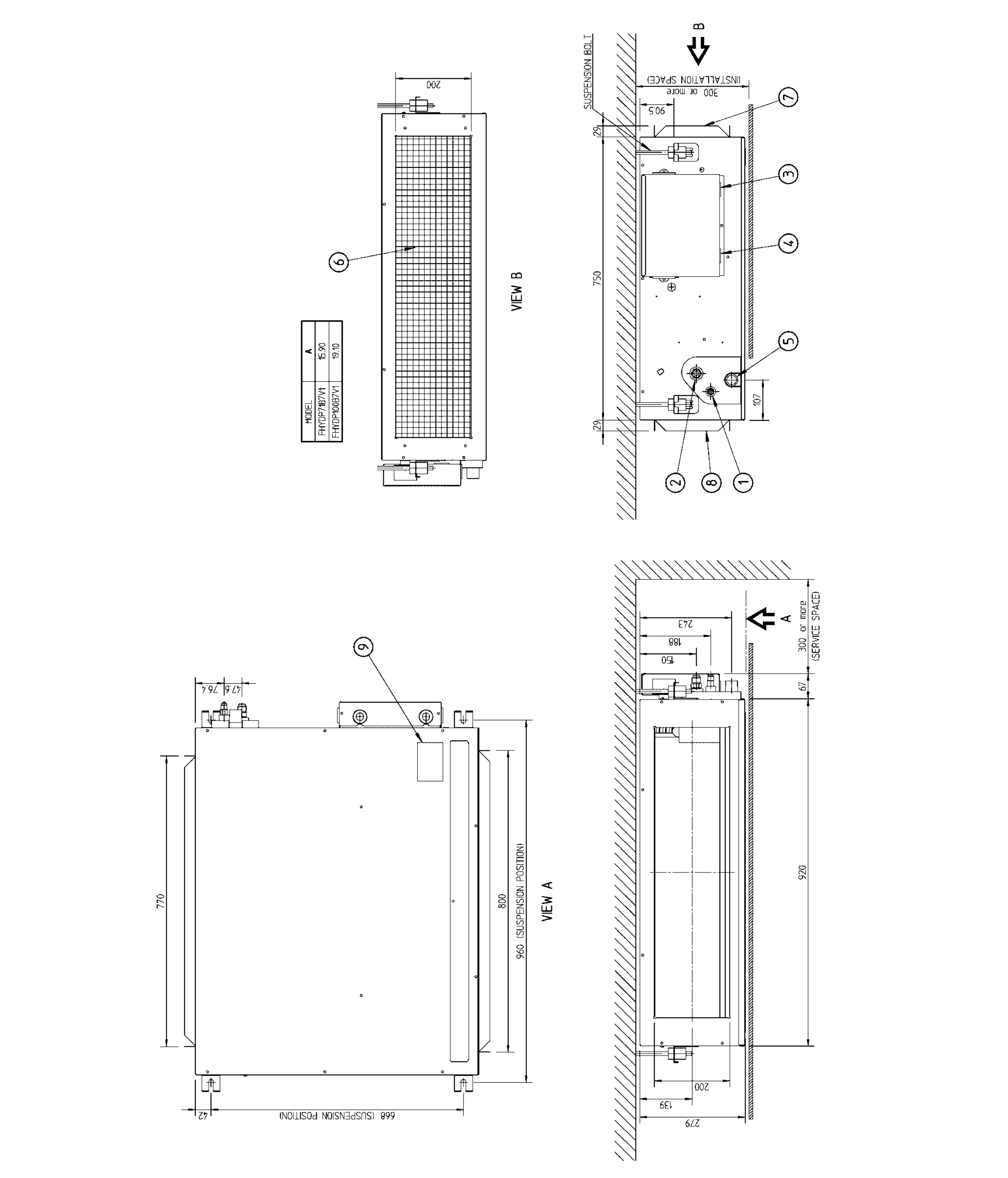
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Drain pipe connection
4	Wire intake
5	Wire intake for remote control
6	Grounding terminal M4 (inside the switch box)
7	Air discharge grille
8	Air suction grille
9	Air filter
10	Suspension bracket

2.18 FDYMP71~100L7V1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



Components

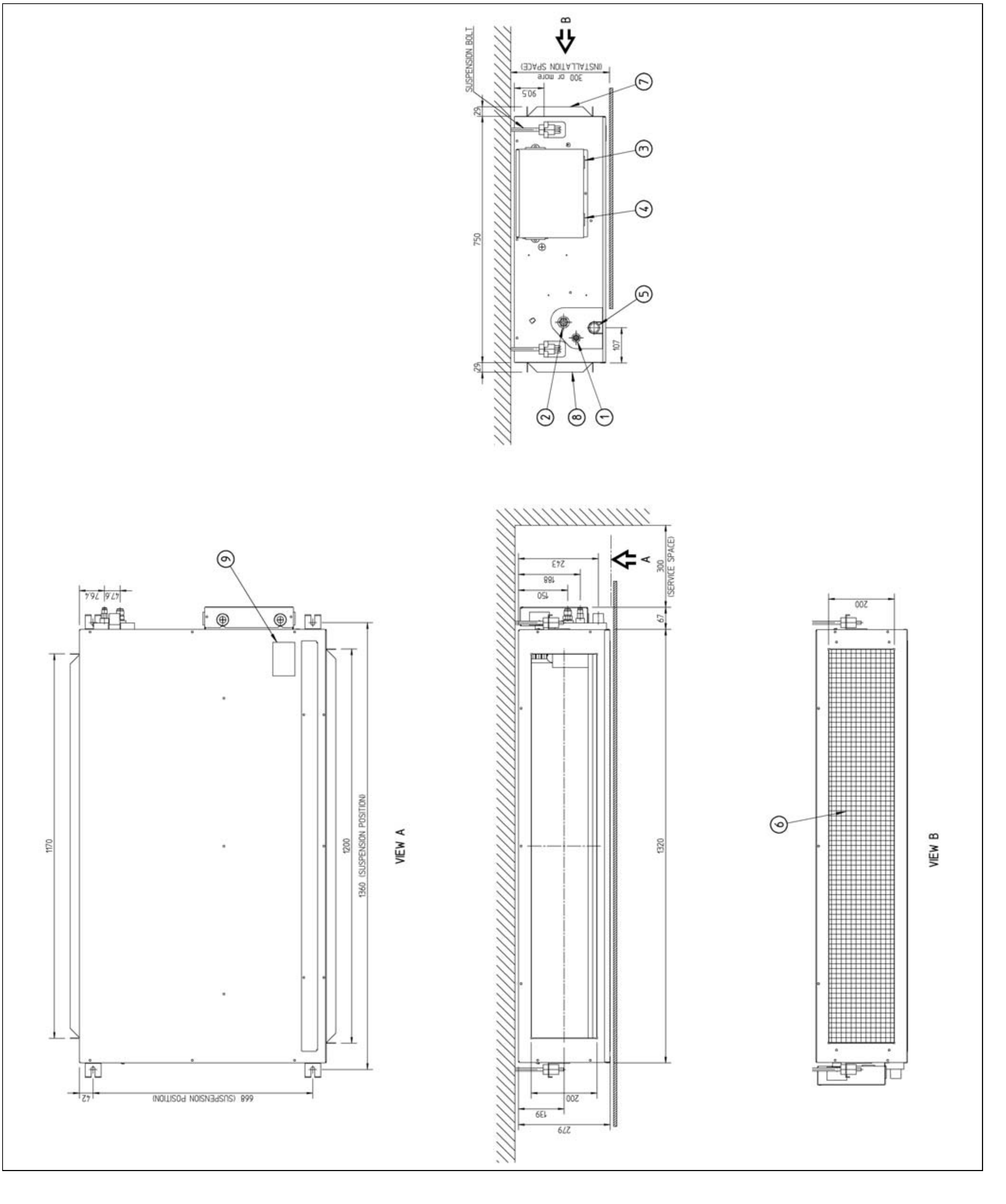
The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Remote controller wiring connection
4	Power supply connection
5	Drain pipe connection (O.D. 32 mm)
6	Air filter
7	Air suction side
8	Air discharge side
9	Nameplate

2.19 FDYMP125L7V1

Outlook and dimensions

The illustration below shows the outlook, the dimensions and the installation and service space of the unit (mm).



1

Components

The table below contains the different components of the unit.

No.	Component
1	Liquid pipe connection
2	Gas pipe connection
3	Remote controller wiring connection
4	Power supply connection
5	Drain pipe connection (O.D. 32 mm)
6	Air filter
7	Air suction side
8	Air discharge side
9	Nameplate

3 Specifications

3.1 What Is in This Chapter?

Introduction

This chapter contains the following information:

- ➤ Technical specifications
- ➤ Electrical specifications.

Options

For possible options, refer to OHE03-2 or the installation manual.

Outdoor units

This chapter contains the following specifications:

Indoor units

This chapter contains the following specifications:

3.2 RP71

Technical specifications

The table below contains the technical specifications.

Specification		RP71L7V1	RP71L7W1
Compressor	Model x No.	JT90FA-V1N x 1	JT90FA-YE x 1
	Type	Hermetically sealed scroll type	
	Refrigerant oil type	DAPHNE FVC68D	
	Speed	rpm	
	Oil charge	1200 cc	
Outdoor Heat exchanger	Length	859 mm	
	Rows x stages x fin pitch	2 x 34 x 2.0 mm	
	No of passes	6	
	Face area	0.634 m²	
	Tube type	HI-XSS Cooling tube	
	Fin type	Non sym. waffle louvre	
	Empty tubeplate hole	0	
	No of fans	1	
Fan	Nominal air flow (230V) cooling	48 m³/min	
	Fan motor model	P47L11S	
	Fan speed	3 steps	
Refrigerant circuit	Type	R407C	
	Charge	2.8 kg	
Safety and functional devices		See page 1–63 and 3–19	
Heat insulation		Both liquid and gas pipes	
Weight		79 kg	78 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		RP71L7V1	RP71L7W1
Unit	Phase	1~	3N~
	Voltage	230 V	400 V
	Frequency	50 Hz	
	No. of wire connections	3 wires for power supply (including earth wire)	5 wires for power supply (including earth wire)
		4 wires for connection with indoor (including earth wire	
	Power supply intake	Outdoor unit only	
Compressor	Phase	1~	3~
	Voltage	230 V	400 V
	Starting method	Direct	
	No. x motor output	1 x 2200 W	
Fan motor	Phase	1~	
	Voltage	230 V	
	No. of motors x output	1 x 65W	

Electrical Data

The table below contains the electrical specifications.

Unit combination		Power supply					Compressor		OFM		IFM	
Indoor unit	Outdoor unit	Hz-Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FHYCP71	RP71L7V1	50-230	Max.50Hz-264V Min.50Hz-198V	15.1	23.2	32	72	11.1	0.065	0.6	0.045	0.6
FUYP71	RP71L7V1	50-230		15.0	23.2	32	72	11.0	0.065	0.6	0.045	0.6
FHYP71	RP71L7V1	50-230		15.0	23.2	32	72	11.0	0.065	0.6	0.062	0.6
FHYKP71	RP71L7V1	50-230		14.6	23.1	32	72	10.8	0.065	0.6	0.045	0.5
FAYP71	RP71L7V1	50-230		14.5	22.9	32	72	10.9	0.065	0.6	0.046	0.3
FHYBP71	RP71L7V1	50-230		15.1	23.5	32	72	10.9	0.065	0.6	0.125	0.9
FDYMP71	RP71L7V1	50-230		15.1	23.5	32	72	10.9	0.065	0.6	0.125	0.9
FHYCP71	RP71L7W1	50-400/230	Max.50Hz-440/253V Min.50Hz-360/197V	6.6	11.2	16	37	4.3	0.065	0.6	0.045	0.6
FUYP71	RP71L7W1	50-400/230		6.6	11.2	16	37	4.3	0.065	0.6	0.045	0.6
FHYP71	RP71L7W1	50-400/230		6.6	11.2	16	37	4.3	0.065	0.6	0.062	0.6
FHYKP71	RP71L7W1	50-400/230		6.4	11.1	16	37	4.2	0.065	0.6	0.045	0.5
FAYP71	RP71L7W1	50-400/230		6.3	10.9	16	37	4.3	0.065	0.6	0.046	0.3
FHYBP71	RP71L7W1	50-400/230		6.8	11.5	16	37	4.2	0.065	0.6	0.125	0.9
FDYMP71	RP71L7W1	50-400/230		6.8	11.5	16	37	4.2	0.065	0.6	0.125	0.9

Symbols:

MCA: Min. Circuit Amps

TOCA: Total Over-current Amps

MFA: Max. Fuse Amps (see note 7)

LRA : Locked Rotor Amps

RLA : Rated Load Amps

OFM : Outdoor Fan Motor

IFM : Indoor Fan Motor

FLA : Full Load Amps

kW : Fan Motor Rated Output

Notes:

1. RLA is based on the following conditions:
   Indoor temp.: 27°CDB/19.5°CWB
   Outdoor temp. : 35°CDB.
2. TOCA means the total value of each OC set.
3. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed operation range limits.
4. Maximum allowable voltage unbalance between phases is 2%.
5. MCA/MFA
   MCA = 1.25 x RLA + all FLA, MFA = < 2.25 x RLA + all FLA
   (next lower standard fuse rating Min. 16A).
6. Select wire size based on the larger value of MCA or TOCA.
7. Instead of fuse, use circuit breaker.

3.3 RP100 and RP125

Technical specifications

The table below contains the technical specifications.

Specification		RP100L7V1	Rp100L7W1	Rp125L7W1
Compressor	Model x No.	JT125FA-V1N x1	JT125FA-YE x 1	JT160FA-YE x 1
	Type	Hermetically sealed scroll type		
	Crankcase heater	—		
	Refrigerant oil type	DAPHNE FVC68D		
	Speed	rpm		
	Oil charge	1500 cc		
Outdoor Heat exchanger	Length	859 mm		
	Rows x stages x fin pitch	2 X 52 X 2.0 mm		
	No of passes	10		
	Face area	0.983 m²		
	Tube type	HI-XSS Cooling tube		
	Fin type	Non sym. waffle louvre		
	Empty tubeplate hole	0		
	No of fans	1		2
Fan	Nominal air flow (230V) cooling	55 m³/min		89 m³/min
	Fan motor model	P47L11S		P47L11S x 2
	Fan speed	3 steps		
Refrigerant circuit	Type	R407C		
	Charge	3.7 kg		
Safety and functional devices		See page 1–63 and 3–19		
Heat insulation		Both liquid and gas pipes		
Weight		100 kg	99 kg	104 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		RP100L7V1	Rp100L7W1	Rp125L7W1
Unit	Phase	1~	3N~	
	Voltage	230 V	400 V	
	Frequency	50 Hz		
	No. of wire connections	3 wires for power supply (including earth wire)	5 wires for power supply (including earth wire)	
		4 wires for connection with indoor (including earth wire)		
	Nominal running current (cooling)	See electrical data		
	Max. running current	See electrical data		
	Power supply intake	Outdoor unit only		
Compressor	Phase	1~	3~	
	Voltage	230 V	400 V	
	Starting method	Direct		
	No. x motor output	1 x 3000 W		1 x 3750 W
Fan motor	Phase	1~		
	Voltage	230 V		
	No. of motors x output	90 W		85 +65 W

Electrical Data

The table below contains the electrical specifications.

Unit combination		Power supply					Compressor		OFM		IFM	
Indoor unit	Outdoor unit	Hz-Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FHYCP100	RP100L7V1	50-230	Max.50Hz-264V Min.50Hz-198V	22.7	34.8	40	97	16.7	0.090	0.8	0.090	1.0
FUYP100	RP100L7V1	50-230		22.4	34.8	40	97	16.5	0.090	0.8	0.090	1.0
FHYP100	RP100L7V1	50-230		22.5	34.5	40	97	16.8	0.090	0.8	0.130	0.7
FAYP100	RP100L7V1	50-230		21.7	34.2	40	97	16.4	0.090	0.8	0.049	0.4
FHYBP100	RP100L7V1	50-230		22.6	34.8	40	97	16.6	0.090	0.8	0.135	1.0
FDYMP100	RP100L7V1	50-230		22.4	34.8	40	97	16.5	0.090	0.8	0.135	1.0
FHYCP100	RP100L7W1	50-400/230	Max.50Hz-440/253V Min.50Hz-360/197V	9.2	11.8	16	47	5.9	0.090	0.8	0.090	1.0
FUYP100	RP100L7W1	50-400/230		9.4	11.8	16	47	6.1	0.090	0.8	0.090	1.0
FHYP100	RP100L7W1	50-400/230		9.3	11.5	16	47	6.2	0.090	0.8	0.130	0.7
FAYP100	RP100L7W1	50-400/230		8.7	11.2	16	47	6.0	0.090	0.8	0.049	0.4
FHYBP100	RP100L7W1	50-400/230		9.3	11.8	16	47	6.0	0.090	0.8	0.135	1.0
FDYMP100	RP100L7W1	50-400/230		9.4	11.8	16	47	6.1	0.090	0.8	0.135	1.0

Unit combination		Power supply					Compressor		OFM		IFM	
Indoor unit	Outdoor unit	Hz-Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FHYCP125	RP125L7W1	50-400/230	Max.50Hz-440/253V Min.50Hz-360/197V	11.6	15.3	20	59	7.4	0.065+ 0.085	0.6+ 07	0.09	1.0
FUYP125	RP125L7W1	50-400/230		11.6	15.3	20	59	7.4	0.065+ 0.085	0.6+ 0.7	0.09	1.0
FHYP125	RP125L7W1	50-400/230		11.4	15.0	20	59	7.5	0.065+ 0.085	0.6+ 0.7	0.13	0.7
FHYBP125	RP125L7W1	50-400/230		12.1	15.7	20	59	7.5	0.065+ 0.085	0.6+ 0.7	0.225	1.4
FDYMP125	RP125L7W1	50-400/230		12.1	15.7	20	59	7.5	0.065+ 0.085	0.6+ 0.7	0.225	1.4
FDYP125	RP125L7W1	50-400/230		14.9	18.5	20	59	7.5	0.065+ 0.085	0.6+ 0.7	0.5	4.2

Symbols:

MCA: Min. Circuit Amps

TOCA: Total Over-current Amps

MFA: Max. Fuse Amps (see note 7)

LRA : Locked Rotor Amps

RLA : Rated Load Amps

OFM : Outdoor Fan Motor

IFM : Indoor Fan Motor

FLA : Full Load Amps

kW : Fan Motor Rated Output

Notes:

1. RLA is based on the following conditions:
   Indoor temp.: 27°CDB/19.5°CWB
   Outdoor temp. : 35°CDB.
2. TOCA means the total value of each OC set.
3. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed operation range limits.
4. Maximum allowable voltage unbalance between phases is 2%.
5. MCA/MFA
   MCA = 1.25 x RLA + all FLA, MFA = < 2.25 x RLA + all FLA
   (next lower standard fuse rating Min. 16A).
6. Select wire size based on the larger value of MCA or TOCA.
7. Instead of fuse, use circuit breaker.

3.4 RYP71, RYP100 and RYP125

Technical specifications

The table below contains the technical specifications.

Specification		RYP71L7V1	RYP71L7W1	RYP100L7V1	RYP100L7W1	RYP125L7W1
Compressor	Model x No.	JT90FA-V1N x 1	JT90FA-YE x 1	JT125FA-V1N x 1	JT125FA-YE x 1	JT160FA-YE x 1
	Type	Hermetically sealed scroll type				
	Crankcase heater	—				
	Refrigerant oil type	DAPHNE FVC68D				
	No. x motor output	1 x 2200 W		1 x 3000 W		1 x 3750 W
	Speed	—				
	Oil charge	1200 cc		1500 cc		
Outdoor Heat exchanger	Length	859 mm				
	Rows x stages x fin pitch	2 x 34 x 2.0 mm		2 x 52 x 2.0 mm		
	No of passes	6		10		
	Face area	0.364 m²		0.983 m²		
	Tube type	HI-XSS Cooling tube				
	Fin type	Non sym. waffle louvre				
	Empty tubeplate hole	0				
	No. of fans	1				2
Fan	Nominal air flow (230 V) cooling	48 m³/min		55 m³/min		89 m³/min
	Nominal air flow (230 V) Heating	43 m³/min		50 m³/min		80 m³/min
	Fan motor model	P47L11S				P47L11S x 2
	Fan speed	3 steps				
Refrigerant circuit	Type	R407C				
	Charge	2.8 kg		3.7 kg		
Safety and functional devices		See page 1–63 and 3–19				
Heat insulation		Both liquid and gas pipes				
Weight		80 kg	79 kg	102 kg	101 kg	106 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		RYP71L7V1	RYP71L7W1	RYP100L7V1	RYP100L7W1	RYP125L7W1
Unit	Phase	1~	3N~	1~	3N~	3N~
	Voltage	230 V	400 V	230 V	400 V	400 V
	Frequency	50 Hz				
	No. of wire connections	3 wires for power supply (including earth wire) 4 wires for connection with indoor (including earth wire)	5 wires for power supply (including earth wire) 4 wires for connection with indoor (including earth wire)	3 wires for power supply (including earth wire) 4 wires for connection with indoor (including earth wire)	5 wires for power supply (including earth wire) 4 wires for connection with indoor (including earth wire)	5 wires for power supply (including earth wire) 4 wires for connection with indoor (including earth wire)
	Power supply intake	Outdoor unit only				
Compressor	Phase	1~	3~	1~	3~	
	Voltage	230 V	400 V	230 V	400 V	
	Starting method	Direct				
	No. x motor output	1 x 2200 W		1 x 3000 W		1 x 3750 W
Fan motor	Phase	1~				
	Voltage	230 V				
	No. of motors x output	1 x 65 W		90 W		85 + 65 W

Electrical Data

The table below contains the electrical specifications.

Unit combination		Power supply					Compressor		OFM		IFM	
Indoor unit	Outdoor unit	Hz-Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FHYCP71	RYP71L7V1	50-230	Max.50Hz-264V Min.50Hz-198V	15.1	23.2	32	72	11.1	0.065	0.6	0.045	0.6
FUYP71	RYP71L7V1	50-230		14.7	23.2	32	72	10.8	0.065	0.6	0.045	0.6
FHYP71	RYP71L7V1	50-230		15.6	23.2	32	72	11.5	0.065	0.6	0.062	0.6
FHYKP71	RYP71L7V1	50-230		14.4	23.1	32	72	10.6	0.065	0.6	0.045	0.5
FAYP71	RYP71L7V1	50-230		14.3	22.9	32	72	10.7	0.065	0.6	0.046	0.3
FHYBP71	RYP71L7V1	50-230		14.8	23.5	32	72	10.6	0.065	0.6	0.125	0.9
FDYMP71	RYP71L7V1	50-230		14.8	23.5	32	72	10.6	0.065	0.6	0.125	0.9
FHYCP71	RYP71L7W1	50-400/230	Max.50Hz-440/253V Min.50Hz-360/197V	6.6	11.2	16	37	4.3	0.065	0.6	0.045	0.6
FUYP71	RYP71L7W1	50-400/230		6.5	11.2	16	37	4.2	0.065	0.6	0.045	0.6
FHYP71	RYP71L7W1	50-400/230		6.7	11.2	16	37	4.4	0.065	0.6	0.062	0.6
FHYKP71	RYP71L7W1	50-400/230		6.4	11.1	16	37	4.2	0.065	0.6	0.045	0.5
FAYP71	RYP71L7W1	50-400/230		6.2	10.9	16	37	4.2	0.065	0.6	0.046	0.3
FHYBP71	RYP71L7W1	50-400/230		6.8	11.5	16	37	4.2	0.065	0.6	0.125	0.9
FDYMP71	RYP71L7W1	50-400/230		6.8	11.5	16	37	4.2	0.065	0.6	0.125	0.9

Unit combination		Power supply					Compressor		OFM		IFM	
Indoor unit	Outdoor unit	Hz-Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FHYCP100	RYP100L7V1	50-230	Max.50Hz-264V Min.50Hz-198V	22.7	34.8	40	97	16.7	0.090	0.8	0.090	1.0
FUYP100	RYP100L7V1	50-230		22.3	34.8	40	97	16.4	0.090	0.8	0.090	1.0
FHYP100	RYP100L7V1	50-230		22.5	34.5	40	97	16.8	0.090	0.8	0.130	0.7
FAYP100	RYP100L7V1	50-230		22.1	34.2	40	97	16.7	0.090	0.8	0.049	0.4
FHYBP100	RYP100L7V1	50-230		22.3	34.8	40	97	16.4	0.090	0.8	0.135	1.0
FDYMP100	RYP100L7V1	50-230		22.4	34.8	40	97	16.5	0.090	0.8	0.135	1.0
FHYCP100	RYP100L7W1	50-400/230	Max.50Hz-440/253V Min.50Hz-360/197V	9.3	11.8	16	47	6.0	0.090	0.8	0.090	1.0
FUYP100	RYP100L7W1	50-400/230		9.3	11.8	16	47	6.0	0.090	0.8	0.090	1.0
FHYP100	RYP100L7W1	50-400/230		9.3	11.5	16	47	6.2	0.090	0.8	0.130	0.7
FAYP100	RYP100L7W1	50-400/230		8.8	11.2	16	47	6.1	0.090	0.8	0.049	0.4
FHYBP100	RYP100L7W1	50-400/230		9.3	11.8	16	47	6.0	0.090	0.8	0.135	1.0
FDYMP100	RYP100L7W1	50-400/230		9.4	11.8	16	47	6.1	0.090	0.8	0.135	1.0

Unit combination		Power supply					Compressor		OFM		IFM	
Indoor unit	Outdoor unit	Hz-Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FHYCP125	RY(E)P125L7W1	50-400/230	Max.50Hz-440/253V Min.50Hz-360/197V	12.2	15.3	20	59	7.9	0.065+ 0.085	0.6+ 07	0.09	1.0
FUYP125	RY(E)P125L7W1	50-400/230		11.4	15.3	20	59	7.3	0.065+ 0.085	0.6+ 0.7	0.09	1.0
FHYP125	RY(E)P125L7W1	50-400/230		12.1	15.0	20	59	8.1	0.065+ 0.085	0.6+ 0.7	0.13	0.7
FHYBP125	RY(E)P125L7W1	50-400/230		12.0	15.7	20	59	7.4	0.065+ 0.085	0.6+ 0.7	0.225	1.4
FDYMP125	RY(E)P125L7W1	50-400/230		12.0	15.7	20	59	7.4	0.065+ 0.085	0.6+ 0.7	0.225	1.4
FDYP125	RY(E)P125L7W1	50-400/230		14.8	18.5	20	59	7.4	0.065+ 0.085	0.6+ 0.7	0.5	4.2

Symbols:

MCA: Min. Circuit Amps

TOCA: Total Over-current Amps

MFA: Max. Fuse Amps (see note 7)

LRA : Locked Rotor Amps

RLA : Rated Load Amps

OFM : Outdoor Fan Motor

IFM : Indoor Fan Motor

FLA : Full Load Amps

kW : Fan Motor Rated Output

Notes:

1. RLA is based on the following conditions:
   Indoor temp.: 27°CDB/19.5°CWB
   Outdoor temp. : 35°CDB.
2. TOCA means the total value of each OC set.
3. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed operation range limits.
4. Maximum allowable voltage unbalance between phases is 2%.
5. MCA/MFA
   MCA = 1.25 x RLA + all FLA, MFA = < 2.25 x RLA + all FLA
   (next lower standard fuse rating Min. 16A).
6. Select wire size based on the larger value of MCA or TOCA.
7. Instead of fuse, use circuit breaker.

3.5 FHYCP

Technical specifications

The table below contains the technical specifications.

Specification		FHYCP35B7V1	FHYCP45B7V1	FHYCP60B7V1	FHYCP71B7V1	FHYCP100B7V1	FHYCP125B7V1
Heat exchanger	Rows x stages x fin pitch	2 x 8 x 1.5 mm				2 x 12 x 1.5 mm	
	Face area	0.331 m²				0.497 m²	
	Tube type	Hi-XA					
	Fin type	Cross fin coil					
Fan	Nominal air flow (cooling)	H: 14 m³/min L: 10 m³/min	H: 15 m³/min L: 11 m³/min	H: 18 m³/min L: 14 m³/min		H: 28 m³/min L: 21 m³/min	H: 31 m³/min L: 24 m³/min
	Nominal air flow (heating)	H: 14 m³/min L: 10 m³/min	H: 15 m³/min L: 11 m³/min	H: 18 m³/min L: 14 m³/min		H: 28 m³/min L: 21 m³/min	H: 31 m³/min L: 24 m³/min
	Fan motor model	QTS46B14M				QTS46A17M	
	Fan speed	2 steps					
	Fan type	Turbo fan					
	Drive	Direct drive					
Refrigerant circuit	Type	R407C					
Safety and functional devices		See page 1–63 and 3–18					
Air filter	Filter class	Resin net (mold resistant)					
	Max. temperature						
	Cleaning						
Temperature control		Computerized control					
Insulation	Heat	Foamed polystyrene					
	Sound absorbing						
Weight		Unit: 23 kg Decoration panel: 5 kg				Unit: 27 kg Decoration panel: 5 kg	

Electrical specifications

The table below contains the electrical specifications.

Specification		FHYCP35B7V1	FHYCP45B7V1	FHYCP60B7V1	FHYCP71B7V1	FHYCP100B7V1	FHYCP125B7V1
Unit	Phase	1~					
	Voltage	230 V					
	Frequency	50 Hz					
Fan motor	FLA (Full Load Amps)	0.6 A				1.0 A	
	Power consumption	140 W		161 W		204 W	238 W
	No. of motors x output	1 x 45 W				1 x 90 W	

3.6 FHYBP

Technical specifications

The table below contains the technical specifications.

Specification		FHYBP35B7V1	FHYBP45B7V1	FHYBP60B7V1	FHYBP71B7V1	FHYBP100B7V1	FHYBP125B7V1
Heat exchanger	Length	450 mm		750 mm		1150 mm	
	Rows x stages x fin pitch	3 x 14 x 1.75 mm					
	No. of passes	4	6	7		10	13
	Face area	0.132 m²		0.221 m²		0.338 m²	
	Tube type	Hi-XA					
	Fin type	Fin Rhombus type					
	Empty tube hole	4	0			14	0
	No. of fans	1		2		3	
Fan	Nominal air flow (cooling)	H: 11.5 m³/min L: 9 m³/min	H: 14 m³/min L: 10 m³/min	H: 19 m³/min L: 14 m³/min		H: 27 m³/min L: 20 m³/min	H: 35 m³/min L: 24 m³/min
	Nominal air flow (heating)	H: 11.5 m³/min L: 9 m³/min	H: 14 m³/min L: 10 m³/min	H: 19 m³/min L: 14 m³/min		H: 27 m³/min L: 20 m³/min	H: 35 m³/min L: 24 m³/min
	Fan speed	2 steps					
	Fan type	Sirocco fan					
	Drive	Direct drive					
	Static external pressure (50/60 Hz)	—		H: 88 M: 49 L: 20		H: 88 M: 49	
Refrigerant circuit	Type	R407C					
Safety and functional devices		See page 1–63 and 3–18					
Insulation	Heat	Both liquid and gas pipes					
	Sound absorbing	Flame and heat resistant foamed polyethylene, regular foamed polyethylene and foamed PU		Foamed polyurethane			
Weight		30 kg	31 kg	41 kg		51 kg	52 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		FHYBP35B7V1	FHYBP45B7V1	FHYBP60B7V1	FHYBP71B7V1	FHYBP100B7V1	FHYBP125B7V1
Unit	Phase	1~					
	Voltage	230 V					
	Frequency	50 Hz					
	Recommended fuses	16 A	20 A	—			
Fan motor	Phase	1~					
	Voltage	230 V					
	Nominal running current	0.5 A	0.7 A	0.9 A		1.0 A	1.4 A
	No. of motors x output	1 x 65 W	1 x 85 W	1 x 125 W		1 x 135 W	1 x 225 W
	Power consumption	65 W	85 W	125 W		135 W	225 W

3.7 FDYP

Technical specifications

The table below contains the technical specifications.

Specification		FDYP125B7V1
Heat exchanger	Rows x stages x fin pitch	3 x 14 x 1.75 mm
	Face area	0.338 m²
	Tube type	Hi-XA
	Fin type	MLH7 fin hydrophilia
Fan	Nominal air flow (cooling)	43 m³/min
	Fan motor model	DPA216-178NB
	Fan speed	3 steps
	Drive	Direct drive
	Static external pressure (50/60 Hz)	0-150 Pa
Refrigerant circuit	Type	R407C
Safety and functional devices		See page 1–63 and 3–18
Air filter	Filter class	Eurovent 4/5 (EU2), EN 779 5G2)
	Max. temperature	100°C
	Cleaning	Hot water 30-40°C or compressed air
Temperature control		Computerized control
Insulation	Sound absorbing	Flame and heat resistant foamed felt
Weight		59 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		FDYP125B7V1
Unit	Phase	1~
	Voltage	230 V
	Frequency	50 Hz
Fan motor	No. of motors x output	500 W

3.8 FHYP

Technical specifications

The table below contains the technical specifications.

Specification		FHYP35BV1	FHYP45BV1	FHYP60BV1	FHYP71BV1	FHYP100BV1	FHYP125BV1
Heat exchanger	Length	722 mm		922 mm		1162 mm	1352 mm
	Rows x stages x fin pitch	2 x 12 x 1.75 mm	3 x 12 x 1.75 mm				
	No. of passes	6				11	
	Face area	0.182 m²		0.233 m²		0.293 m²	0.341 m²
	Tube type	N-hiX tubes					
	Fin type	Cross fin coil (multi louvre fins)					
	Empty tube hole	0					
Fan	Nominal air flow (cooling)	H: 13 m³/min L: 10 m³/min		H: 16m³/min L: 13 m³/min	H: 17 m³/min L: 14 m³/min	H: 24 m³/min L: 20 m³/min	H: 30 m³/min L: 25 m³/min
	Nominal air flow (heating)	H: 13 m³/min L: 10 m³/min		H: 16 m³/min L: 13 m³/min	H: 17 m³/min L: 14 m³/min	H: 24 m³/min L: 20 m³/min	H: 30 m³/min L: 25 m³/min
	Fan motor model	3D12K1AA1		4D12K1AA1		3D12K2AA1	4D12K2AA1
	Fan speed	2 steps					
	Fan type	Sirroco fan					
Refrigerant circuit	Type	R407C					
Safety and functional devices		See page 1–63 and 3–18					
Insulation	Heat	Foamed polystyrene / foamed polyethylene					
	Sound absorbing	Foamed polyurethane / glass wool					
Weight		23 kg	24 kg	26 kg	27 kg	32 kg	35 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		FHYP35BV1	FHYP45BV1	FHYP60BV1	FHYP71BV1	FHYP100BV1	FHYP125BV1
Unit	Phase	1~					
	Voltage	230 V					
	Frequency	50 Hz					
Fan motor	Phase	1~					
	Voltage	230 V					
	Power consumption	111 W		115 W	117 W	135 W	144 W
	FLA (Full Load Amps)	0.6 A				0.7 A	
	No. of motors x output	3 x 62 W		4 x 62 W		3 x 130 W	4 x 130 W

3.9 FUYP

Technical specifications

The table below contains the technical specifications.

Specification		FUYP71BV17	FUYP100BV17	FUYP125BV17
Heat exchanger	Length	2101 mm		
	Rows x stages x fin pitch	3 x 6 x 1.8 mm	3 x 8 x 1.8 mm	
	No. of passes	8		12
	Face area	0.265 m²	0.353 m²	
	Tube type	N-hiX tubes		
	Fin type	Cross fin coil (multi louvre fins)		
	Empty tube hole	0	4	0
Fan	Nominal air flow (cooling)	H: 19 m³/min L: 14 m³/min	H: 29 m³/min L: 21 m³/min	H: 32 m³/min L: 23 m³/min
	Nominal air flow (heating)	H: 19 m³/min L: 14 m³/min	H: 29 m³/min L: 21 m³/min	H: 32 m³/min L: 23 m³/min
	Fan motor model	QTS48A10M	QTS50B15M	
	Fan speed	2 steps		
	Fan type	Turbo fan		
Refrigerant circuit	Type	R407C		
Safety and functional devices		See page 1–63 and 3–18		
Air filter		Resin net (with mold resistant)		
Insulation	Heat	Heat resistant foamed polyethylene Regular foamed polyethylene		
Weight		25 kg	31 kg	

Electrical specifications

The table below contains the electrical specifications.

Specification		FUYP71BV17	FUYP100BV17	FUYP125BV17
Unit	Phase	1~		
	Voltage	230 V		
	Frequency	50 Hz		
Fan motor	Phase	1~		
	Voltage	230 V		
	Power consumption	Cooling: 180 W Heating: 160 W	Cooling: 289 W Heating: 269 W	
	FLA (Full Load Amps)	0.6 A	1.0 A	
	No. of motors x output	1 x 45 W	1 x 90 W	

3.10 FAYP and FHYKP

Technical specifications

The table below contains the technical specifications.

Specification		FAYP71LV1	FAYP100BV1	FHYKP35BV1	FHYKP45BV1	FHYKP60BV1	FHYKP71BV1
Heat exchanger	Length	863 mm	1320 mm	778 mm		978 mm	
	Rows x stages x fin pitch	2 x 16 x 1.4 mm	2 x 12 x 1.4 mm	2 x 11 x 1.75 mm	3 x 11 x 1.75 mm		
	No. of passes	4	9	5		9	
	Face area	0.289 m²	0.332 m²	0.186 m²		0.226 m²	
	Tube type	Hi-XA tubes	N-hiX tubes	N-hiX tubes			
	Fin type	Cross fin coil (multi louvre fins)		Cross fin coil (multi louvre fins)			
	Empty tube hole	0		2	3		
Fan	Nominal air flow (cooling)	H: 19 m³/min L: 15 m³/min	H: 23 m³/min L: 19 m³/min	H: 12 m³/min L: 9 m³/min	H: 12 m³/min L: 10 m³/min	H: 17 m³/min L: 14 m³/min	
	Nominal air flow (heating)	H: 19 m³/min L: 15 m³/min	H: 23 m³/min L: 19 m³/min	H: 12 m³/min L: 9 m³/min	H: 12 m³/min L: 10 m³/min	H: 17 m³/min L: 14 m³/min	
	Fan motor model	QCL9686M	QCL1163MA and QCL1163MAB	3D12H1AH1V1	3D12H1J1V1	4D12H1AG1V1	
	Fan speed	2 steps		2 steps			
	Fan type	Cross flow fan		Sirocco fan			
Refrigerant circuit	Type	R407C		R407C			
Safety and functional devices		See page 1–63 and 3–18		See page 1–63 and 3–18			
Insulation	Heat	Foamed polystyrene / foamed polyethylene		Foamed polystyrene / foamed polyethylene			
Weight		13 kg	26 kg	30 kg	31 kg	33 kg	
Decoration panel (option)	Model	—		BYK45FJW1		BYK71FJW1	
	Air filter	—		Resin net (with mold resistant)			
	Weight	—		8.5 kg		9.5 kg	

Electrical specifications

The table below contains the electrical specifications.

Specification		FAYP71LV1	FAYP100BV1	FHYKP35BV1	FHYKP45BV1	FHYKP60BV1	FHYKP71BV1
Unit	Phase	1~		1~			
	Voltage	230 V		230 V			
	Frequency	50 Hz		50 Hz			
Fan motor	Phase	1~		1~			
	Voltage	230 V		230 V			
	Power consumption	68 W	101 W	Cooling: 92 W Heating: 59 W	Cooling: 100 W Heating: 67 W	Cooling: 123 W Heating: 90 W	
	FLA (Full Load Amps)	0.4 A	0.4 A	0.2 A	0.3 A	0.5 A	
	No. of motors x output	1 x 43 W	1 x 49 W	1 x 20 W	1 x 25 W	1 x 45 W	

3.11 FDYMP

Technical specifications

The table below contains the technical specifications.

Specification		FDYMP71L7V1	FDYMP100L7V1	FDYMP125L7V1
Heat exchanger	Length	0.770 mm		1.170 mm
	Rows x stages x fin pitch	3 x 14 x 1.75 mm		
	No. of passes	7		13
	Face area	0.226 m²		0.344 m²
	Tube type	HI-XA Ø7		
	Fin type	Fin Rhombus type		
	Empty tube hole	0		
	No.of fans	2		3
Fan	Nominal air flow (cooling)	H: 19 m³/min L: 14 m³/min	H: 27 m³/min L: 20 m³/min	H: 35 m³/min L: 24 m³/min
	Nominal air flow (heating)	H: 19 m³/min L: 14 m³/min	H: 27 m³/min L: 20 m³/min	H: 35 m³/min L: 24 m³/min
	Fan motor model	—		
	Fan speed	3 steps		
	Fan type	Sirocco fan		
Refrigerant circuit	Type	R407C		
Safety and functional devices		See page 1–63 and 3–18		
Air filter		Resin net		
Insulation	Heat	Both liquid and gas pipes		
Weight		38.1 kg		48.6 kg

Electrical specifications

The table below contains the electrical specifications.

Specification		FDYMP71L7V1	FDYMP100L7V1	FDYMP125L7V1
Unit	Phase	1~		
	Voltage	230 V		
	Frequency	50 Hz		
Fan motor	Phase	1~		
	Voltage	230 V		
	Power consumption	150 W	195 W	415 W
	No. of motors x output	1 x 130 W	1 x 155 W	1 X 225 W

4 Functional Diagrams

4.1 What Is in This Chapter?

Introduction

This chapter contains the following information:

- Functional diagrams
- Pipe connection diameters.

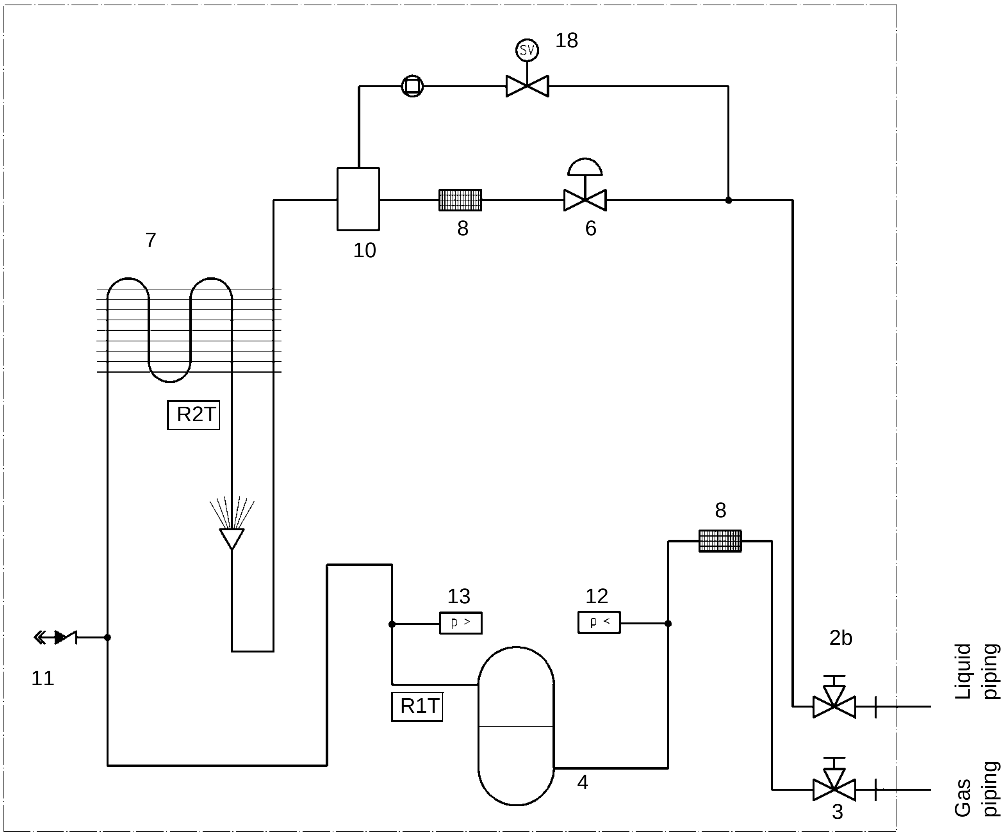
Functional diagrams

This chapter contains the following functional diagrams:

4.2 RP71L7, RP100L7 and RP125L7: Outdoor Unit

Functional diagram

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see 'Piping Components' on page 1–75.

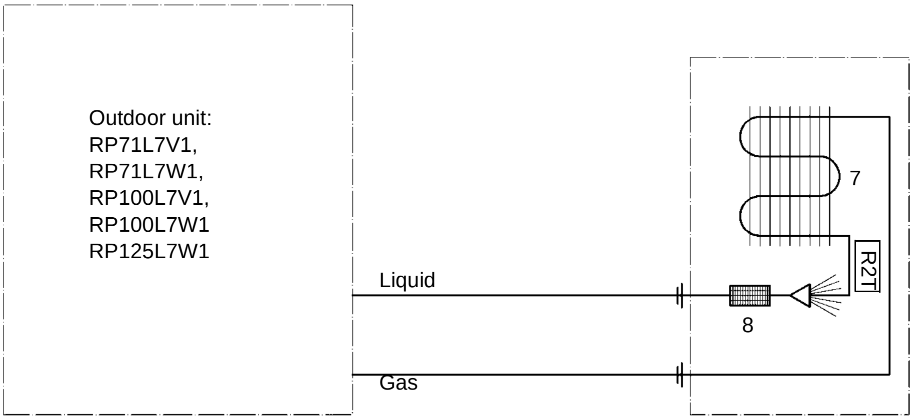
Pipe connection diameters

The table below contains the refrigerant pipe connection diameters.

Model	∅ **Gas pipe (flare)**	∅ **Liquid pipe (flare)**
RP71L7V1	➤ For pair, see page 1-65. ➤ For twin, see page 1-66. ➤ For triple, see page 1-67.	
RP71L7W1		
RP100L7V1		
RP100L7W1		
RP125L7W1		

Functional diagram: Pair

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see 'Piping Components' on page 1–75.

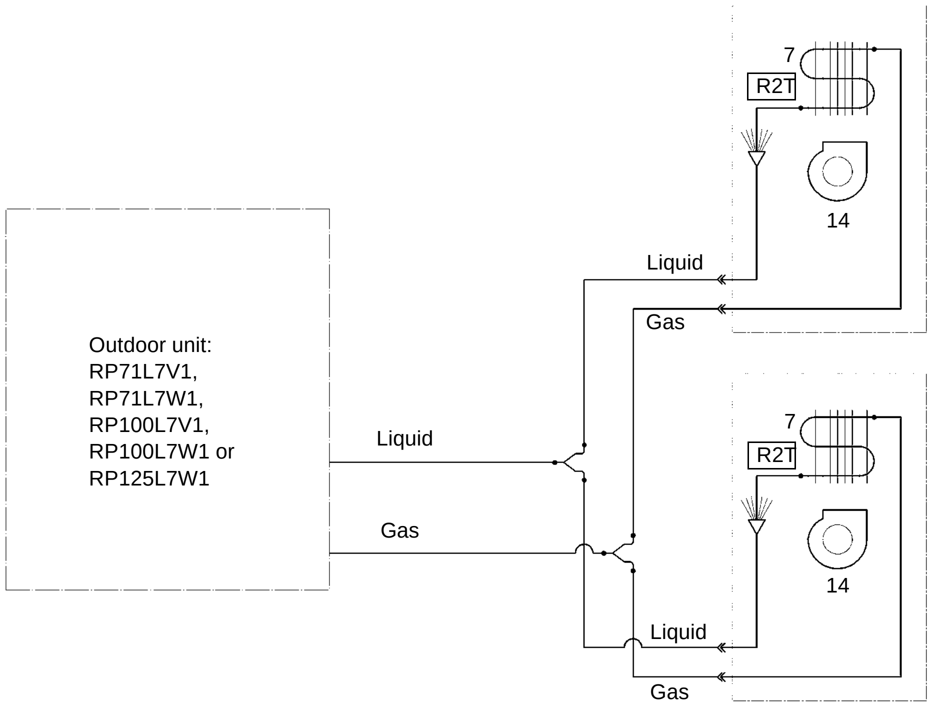
Pipe connection diameters

The table below contains the refrigerant pipe connection diameters (O.D.).

Model	∅ Gas pipe (flare)	∅ Liquid pipe (flare)
RP71L7V1	15.9 mm	9.5 mm
RP71L7W1		
RP100L7V1	19.1 mm	
RP100L7W1		
RP125L7W1		

Functional diagram: Twin

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see ’Piping Components’ on page 1–75.

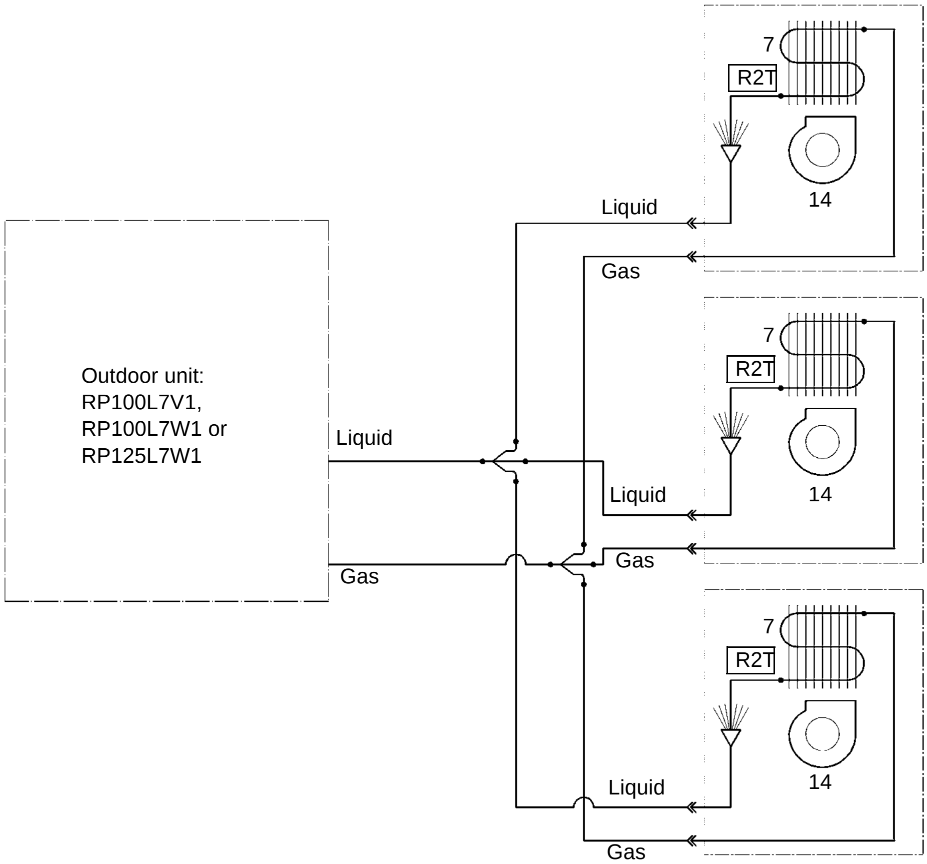
Pipe connection diameters

The table below contains the refrigerant pipe connection diameters (O.D.).

Model	**∅ Gas pipe (flare)**	**∅ Liquid pipe (flare)**
RP71L7V1	15.9 mm	9.5 mm
RP71L7V1		
RP100L7V1	19.1 mm	
RP100L7W1		
RP125L7W1		

Functional diagram: Triple

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see ’Piping Components’ on page 1–75.

Pipe connection diameters

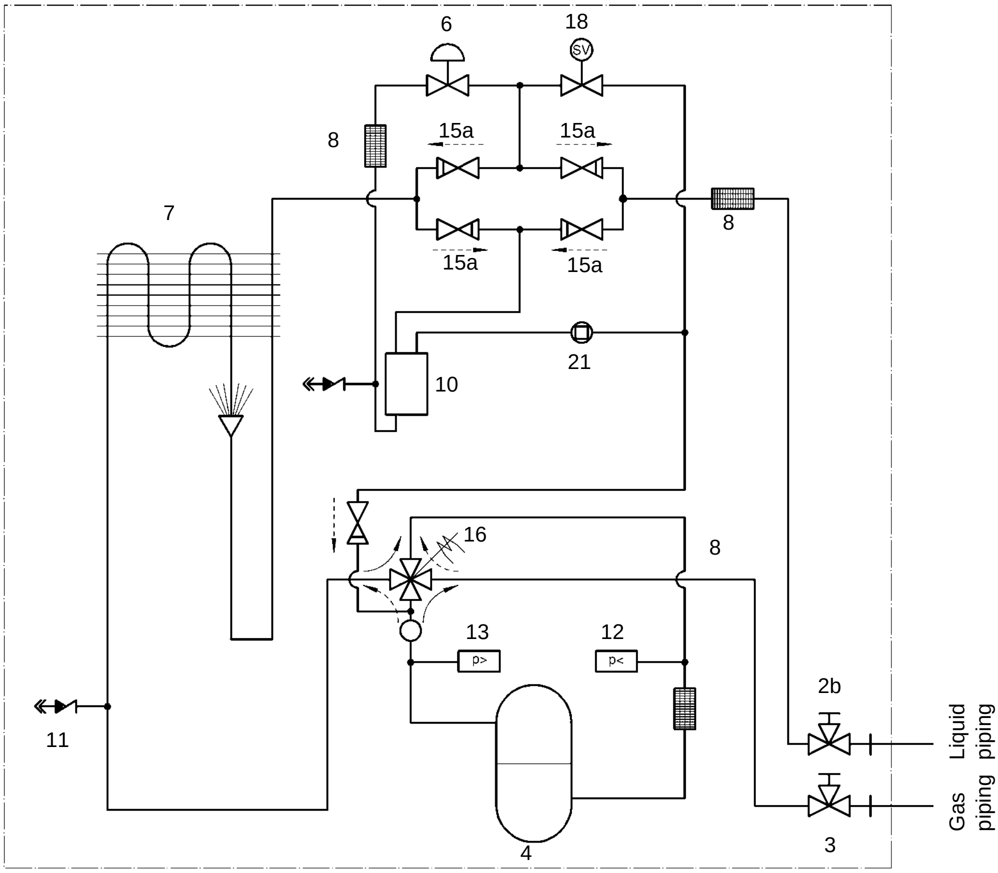
The table below contains the refrigerant pipe connection diameters (O.D.).

Model	∅ Gas pipe (flare)	∅ Liquid pipe (flare)
RP100L7V1	19.1 mm	9.5 mm
RP100L7W1		
RP125L7W1		

4.3 RYP71L7, RYP100L7 and RYP125L7: Outdoor Unit

Functional diagram

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see 'Piping Components' on page 1–75.

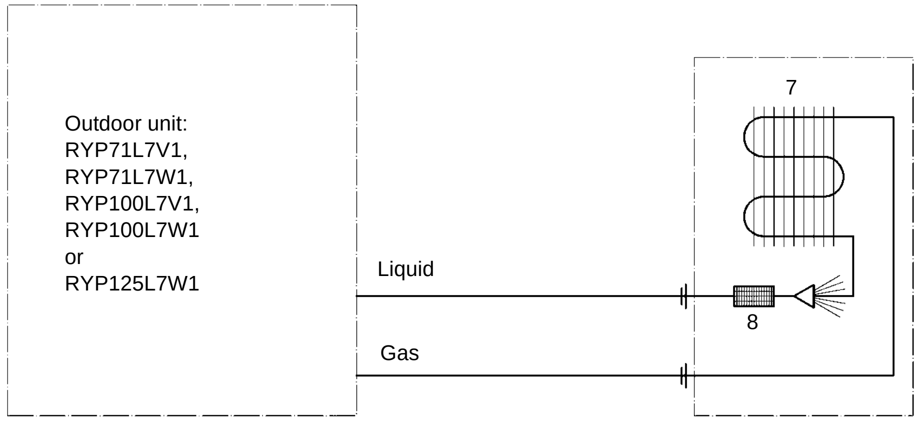
Pipe connection diameters

The table below contains the refrigerant pipe connection diameters.

Model	∅ Gas pipe (flare)	∅ Liquid pipe (flare)
RYP71L7V1	➤ For pair, see page 1-69. ➤ For twin, see page 1-70. ➤ For triple, see page 1-71.	
RYP71L7W1		
RYP100L7V1		
RYP100L7W1		
RYP125L7W1		

Functional diagram: Pair

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see 'Piping Components' on page 1–75.

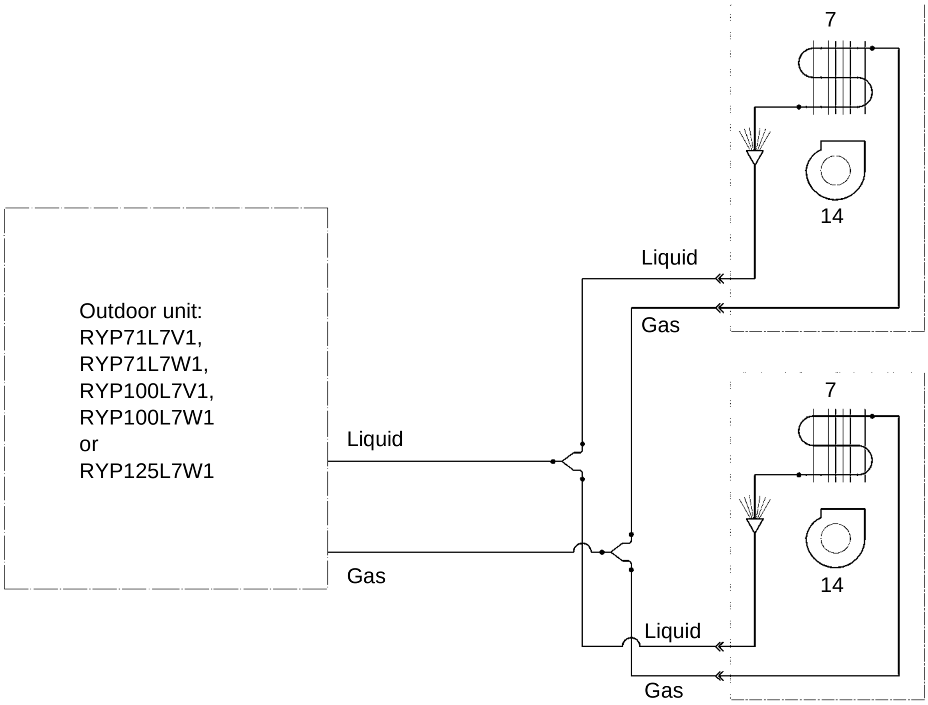
Pipe connection diameters

The table below contains the refrigerant pipe connection diameters (O.D.).

Model	**∅ Gas pipe (flare)**	**∅ Liquid pipe (flare)**
RYP71L7V1	15.9 mm	9.5 mm
RYP71L7W1		
RYP100L7V1	19.1 mm	
RYP100L7W1		
RYP125L7W1		

Functional diagram: Twin

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see ’Piping Components’ on page 1–75.

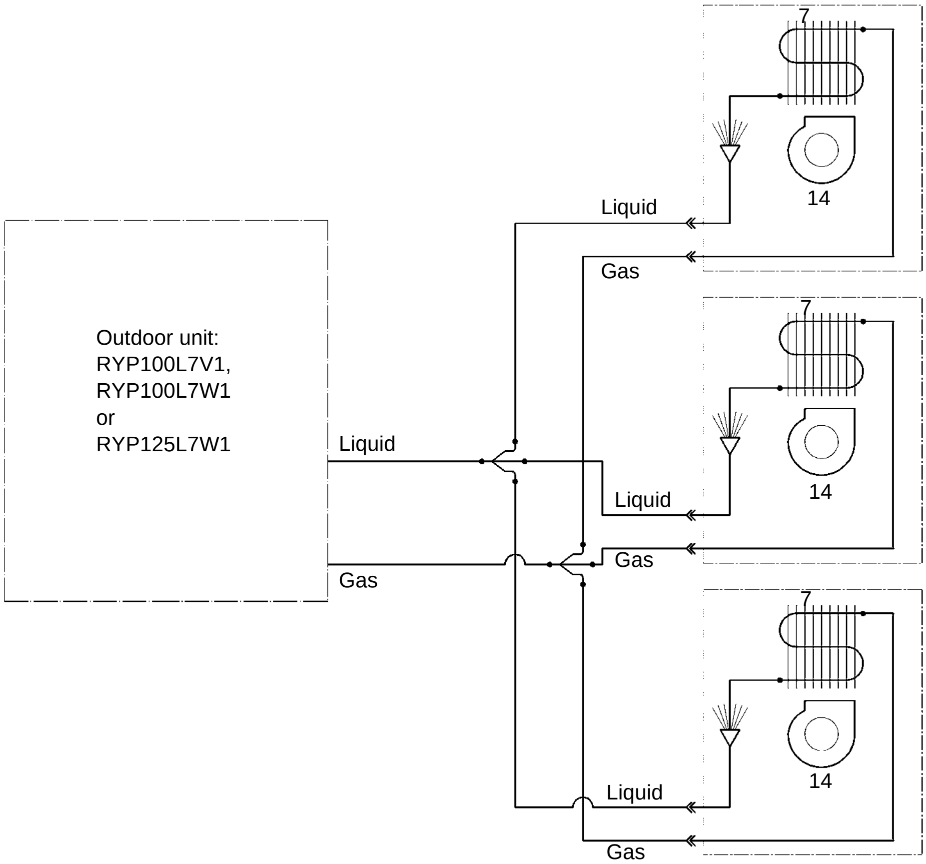
Pipe connection diameters

The table below contains the refrigerant pipe connection diameters (O.D.).

Model	∅ Gas pipe (flare)	∅ Liquid pipe (flare)
RYP71L7V1	15.9 mm	9.5 mm
RYP71L7W1		
RYP100L7V1	19.1 mm	
RYP100L7W1		
RYP125L7W1		

Functional diagram: Triple

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see ’Piping Components’ on page 1–75.

Pipe connection diameters

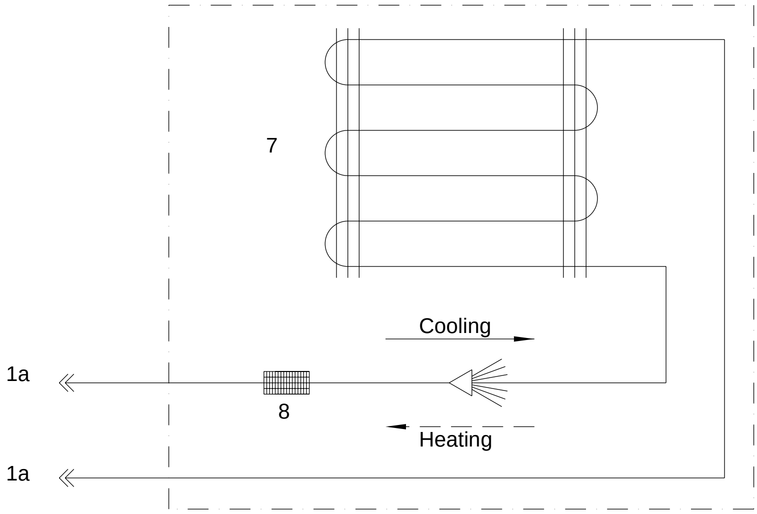
The table below contains the refrigerant pipe connection diameters (O.D.).

Model	**∅ Gas pipe (flare)**	**∅ Liquid pipe (flare)**
RYP100L7V1	19.1 mm	9.5 mm
RYP100L7W1		
RYP125L7W1		

4.4 FHYBP, FHYCP, FUYP, FAYP, FDYP, FHYP, FHYKP and FDYMP

Functional diagram

The illustration below shows the functional diagram of the refrigeration circuit.



Components

For a description of the components, see 'Piping Components' on page 1–75.

Pipe connection diameters

The table below contains the refrigerant pipe connection diameters.

Model	∅ Gas pipe (flare)	∅ Liquid pipe (flare)
FHYBP35B7V1	12.70 mm	6.35 mm
FHYBP45B7V1	15.90 mm	
FHYBP60B7V1		9.52 mm
FHYBP71B7V1		
FHYBP100B7V1	19.05	
FHYBP125B7V1		
FHYCP35B7V1	12.70 mm	6.35 mm
FHYCP45B7V1	15.90 mm	
FHYCP60B7V1		9.52 mm
FHYCP71B7V1		
FHYCP100B7V1	19.05 mm	
FHYCP125B7V1		
FUYP71BV17	15.90 mm	9.52 mm
FUYP100BV17	19.05 mm	
FUYP125BV17		
FAYP71BV1	15.90 mm	9.52 mm
FAYP100BV1	19.05 mm	
FDYP125B7V1	19.05 mm	9.52 mm

Model	**∅ Gas pipe (flare)**	**∅ Liquid pipe (flare)**
FHYP35BV1	12.70 mm	6.35 mm
FHYP45BV1		
FHYP60BV1	15.90 mm	9.52 mm
FHYP71BV1		
FHYP100BV1	19.05 mm	
FHYP125BV1		
FHYKP35BV1	12.70 mm	6.35 mm
FHYKP45BV1		
FHYKP60BV1	15.90 mm	9.52 mm
FHYKP71BV1		
FDYMP71L7V1	12.0~12.4 mm	18.6~19.0 mm
FDYMP100L7V1	12.0~12.4 mm	22.9~23.3 mm
FDYMP125L7V1		

4.5 Piping Components

Components

The table below contains the different components of the functional diagrams.

No.	Component	Function / remark
1a	Flare connection	See pipe connection diameter.
1b	Flange connection	
2a	Liquid stop valve	The liquid stop valve is used as shut-off valve in case of a pump-down.
2b	Liquid stop valve with service port	
3	Gas stop valve with service port	The gas stop valve is used as shut-off valve in case of a pump-down.
4	Compressor	The compressor can restart after 3 min from last stop.
5a	Capillary tube	The capillary tube allows pressure equalization during a compressor OFF-cycle.
5b		The capillary tube expands the liquid to enable evaporation in the evaporator.
6	Electronic expansion valve	The expansion valve expands the liquid to enable evaporation in the evaporator. The opening degree is controlled to obtain the optimum discharge temperature.
7	Heat exchanger	The heat exchanger is of the multi louvre fin type. Hi-X -tubes and coated waffle louvre fins are used.
8	Filter	The filter is used to collect impurities, which may enter the system during installation and is also used to avoid blockage of the capillaries and other fine mechanical parts of the unit.
9	Accumulator	The accumulator is used to separate the gas from the liquid in order to protect the compressor against liquid pumping.
10	Liquid receiver	The liquid receiver is used to make sure only completely liquefied refrigerant is sent to the expansion valve. It is also used as a container in which surplus refrigerant is stored.
11	Check valve with service port	The check valve allows you to connect a gauge.
12	Low-pressure switch	The low-pressure switch stops the operation of the unit when the pressure becomes abnormally low.
13	High-pressure switch	The high-pressure switch stops the operation of the unit when the pressure becomes abnormally high.
14	Propeller fan and fan motor	The propeller fan creates air displacement across the heat exhanger.
15a	One-way valve	The one-way valve is used to force the refrigerant liquid to flow through the receiver and the expansion valve in the same direction both in cooling and heating.
15b		The one-way valve is used to release overpressure in the liquid receiver during stand-still.
16	4-way valve (reversing solenoid valve)	The 4-way valve is used to select refrigerant flow in cooling or heating mode. When the 4-way valve switches from ON to OFF, a timer starts counting up to 150 as soon as the cooling or defrosting operation is stopped. This delay time is to eliminate the switching sound.
17	Muffler	The muffler is used to absorb the refrigerant noise from the compressor.
18	Solenoid valve	➤ Y1S: Capacity control solenoid valve ➤ Y3S: Liquid injection solenoid valve ➤ SV: Solenoid valve (Purge liquid receiver)
19	Thermistor	➤ R1T: Air thermistor ➤ R2T: Coil thermistor ➤ R3T: Discharge pipe thermistor
20	Strainer	

5 Switch Box Layout

5.1 What Is in This Chapter?

Introduction

This chapter shows the switch box components.

Outdoor units

This chapter contains the following switch box layouts:

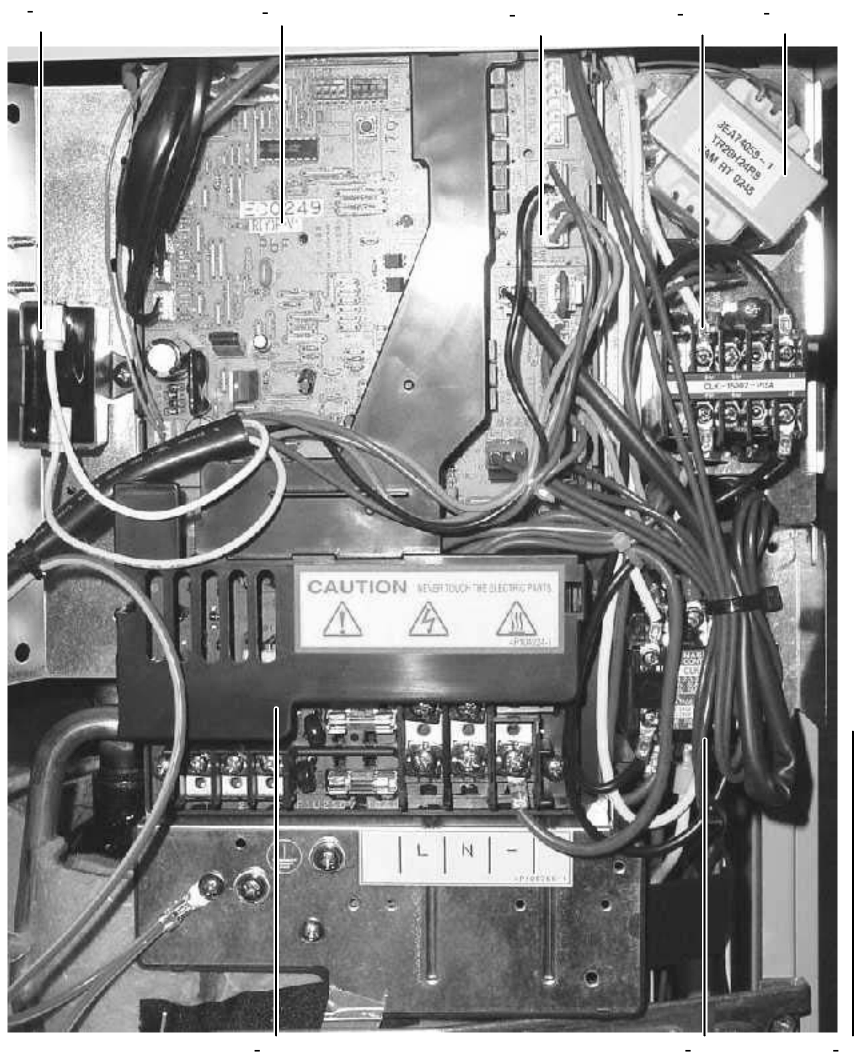
Indoor units

This chapter contains the following switch box layouts:

5.2 R(Y)P71-100L7V1

Switch box

The illustration below shows the switch box layout.



Components

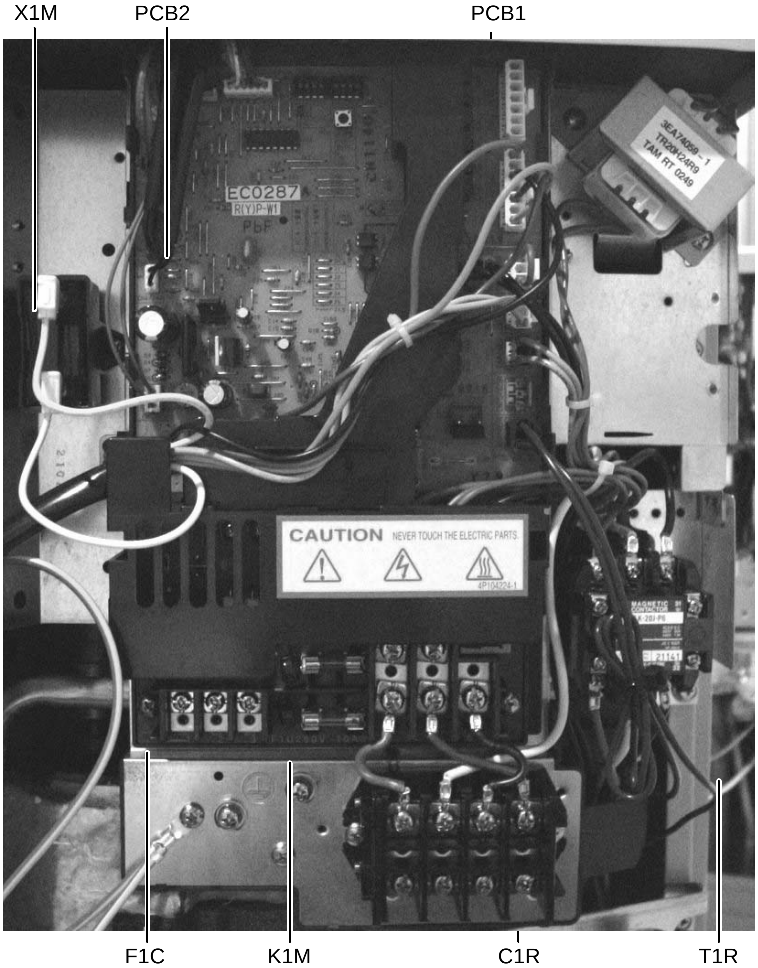
The table below contains the components of the switch box.

Symbol	Component
T1R	Transformer
K1S	Starting contactor
C1R	Fan motor capacitor
K1M	Magnetic contactor
F1C	Overcurrent relay
X1M	Terminal strip
PCB1	Printed circuit board
PCB2	Printed circuit board (interlock PCB)

5.3 R(Y)P71~100L7W1

Switch box

The illustration below shows the switch box layout.



Components

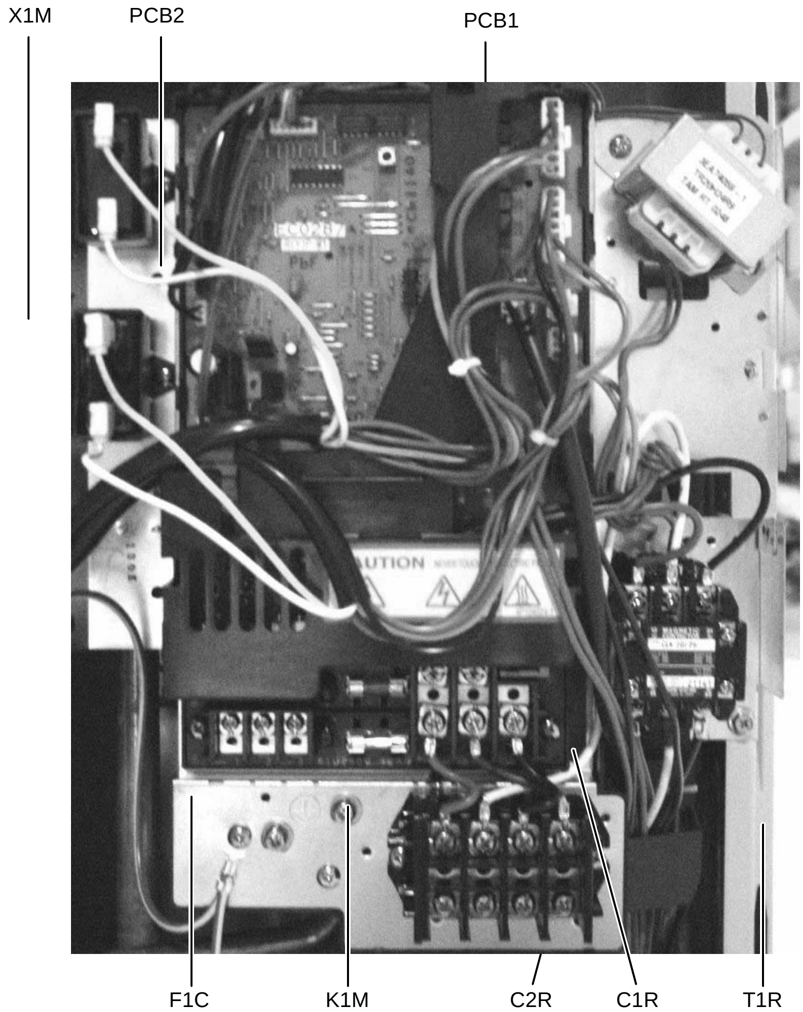
The table below contains the components of the switch box.

Symbol	Component
X1M	Terminal strip
PCB1	Printed circuit board
PCB2	Printed circuit board (interlock PCB)
T1R	Transformer
C1R	Fan motor capacitor
K1M	Magnetic contactor
F1C	Overcurrent relay

5.4 R(Y)P125L7W1

Switch box

The illustration below shows the switch box layout.



Components

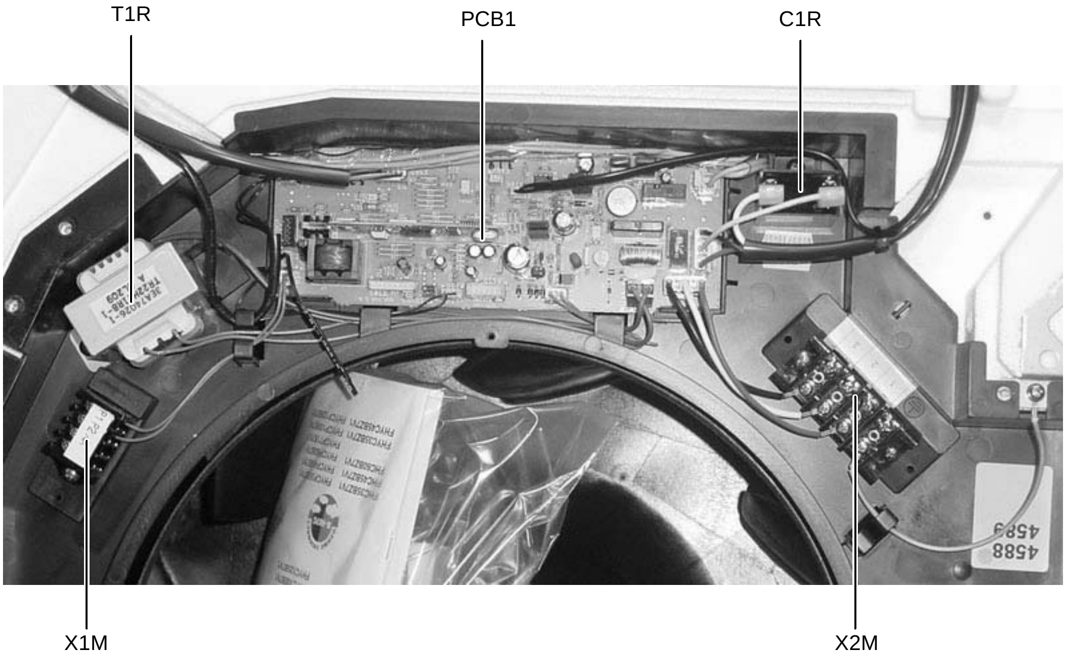
The table below contains the components of the switch box.

Symbol	**Component**
X1M	Terminal strip
PCB1	Printed circuit board
PCB2	Printed circuit board (interlock PCB)
T1R	Transformer
C1R	Fan motor capacitor 1
C2R	Fan motor capacitor 2
K1M	Magnetic contactor
F1C	Overcurrent relay

5.5 FHYCP35B7V1, FHYCP45B7V1, FHYCP60B7V1, FHYCP71B7V1, FHYCP100B7V1 and FHYCP125B7V1

Switch box

The illustration below shows the switch box layout.



Components

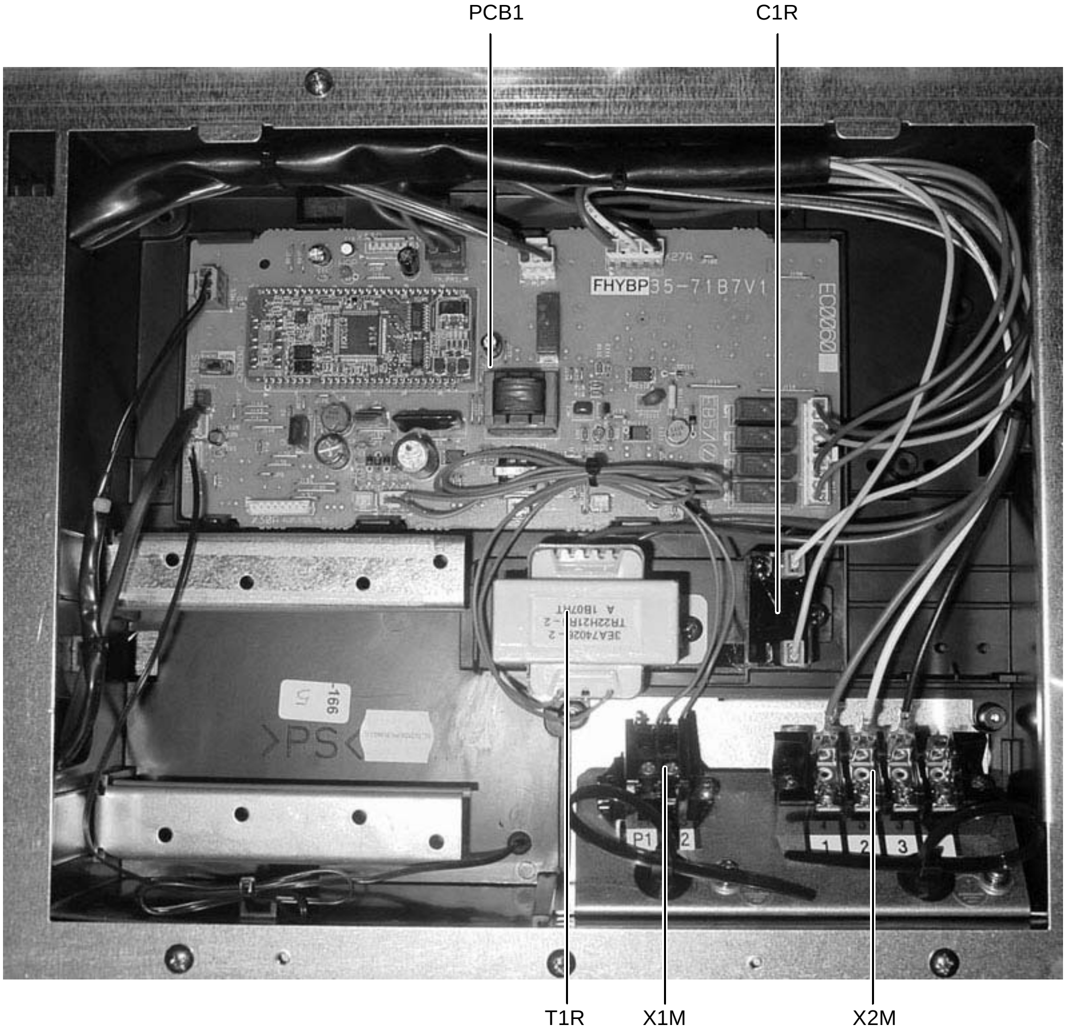
The table below contains the components of the switch box.

Symbol	Component
T1R	Transformer
PCB1	Printed circuit board
C1R	Fan motor capacitor
X2M	Terminal strip (interconnection wiring)
X1M	Terminal strip (for remote controller P1/P2)

5.6 FHYBP35B7V1, FHYBP45B7V1, FHYBP60B7V1, FHYBP71B7V1, FHYBP100B7V1 and FHYBP125B7V1

Switch box

The illustration below shows the switch box layout.



Components

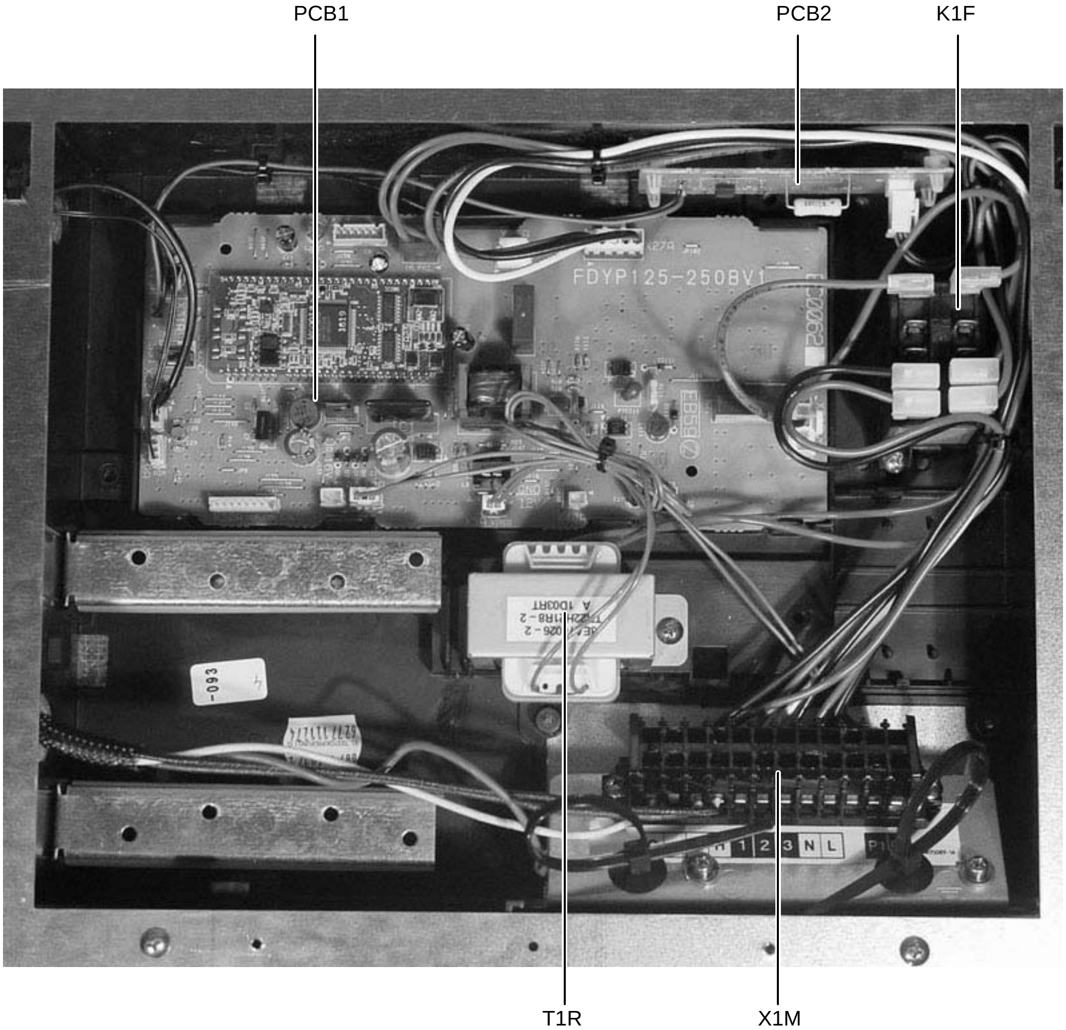
The table below contains the components of the switch box.

Symbol	Component
PCB1	Printed circuit board
C1R	Fan motor capacitor
X2M	Terminal strip (interconnection wiring)
X1M	Terminal strip (for remote controller P1/P2)
T1R	Transformer

5.7 FDYP125B7V1

Switch box

The illustration below shows the switch box layout.



Components

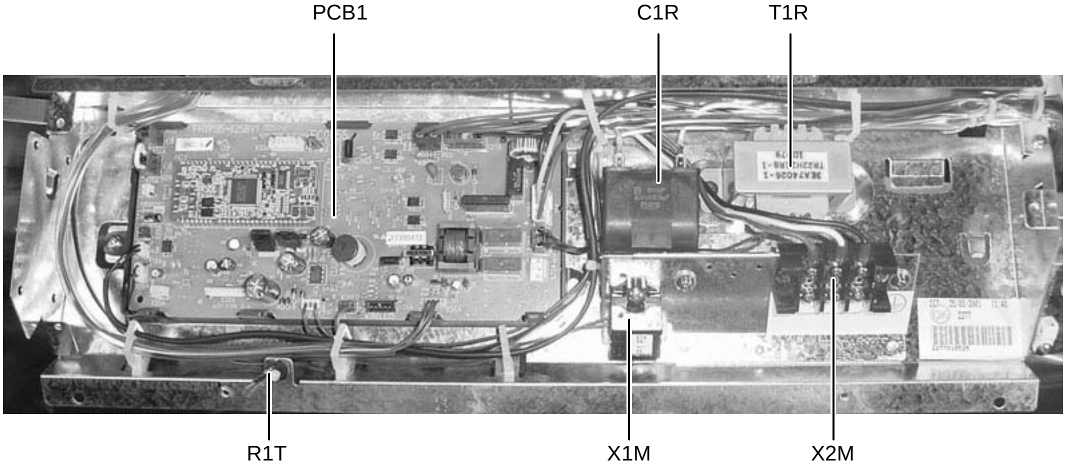
The table below contains the components of the switch box.

Symbol	Component
PCB1	Printed circuit board
PCB2	Printed circuit board (interlock PCB)
K1F	Magnetic contactor
X1M	Terminal strip
T1R	Transformer

5.8 FHYP35BV1, FHYP45BV1, FHYP60BV1, FHYP71BV1, FHYP100BV1 and FHYP125BV1

Switch box

The illustration below shows the switch box layout.



Components

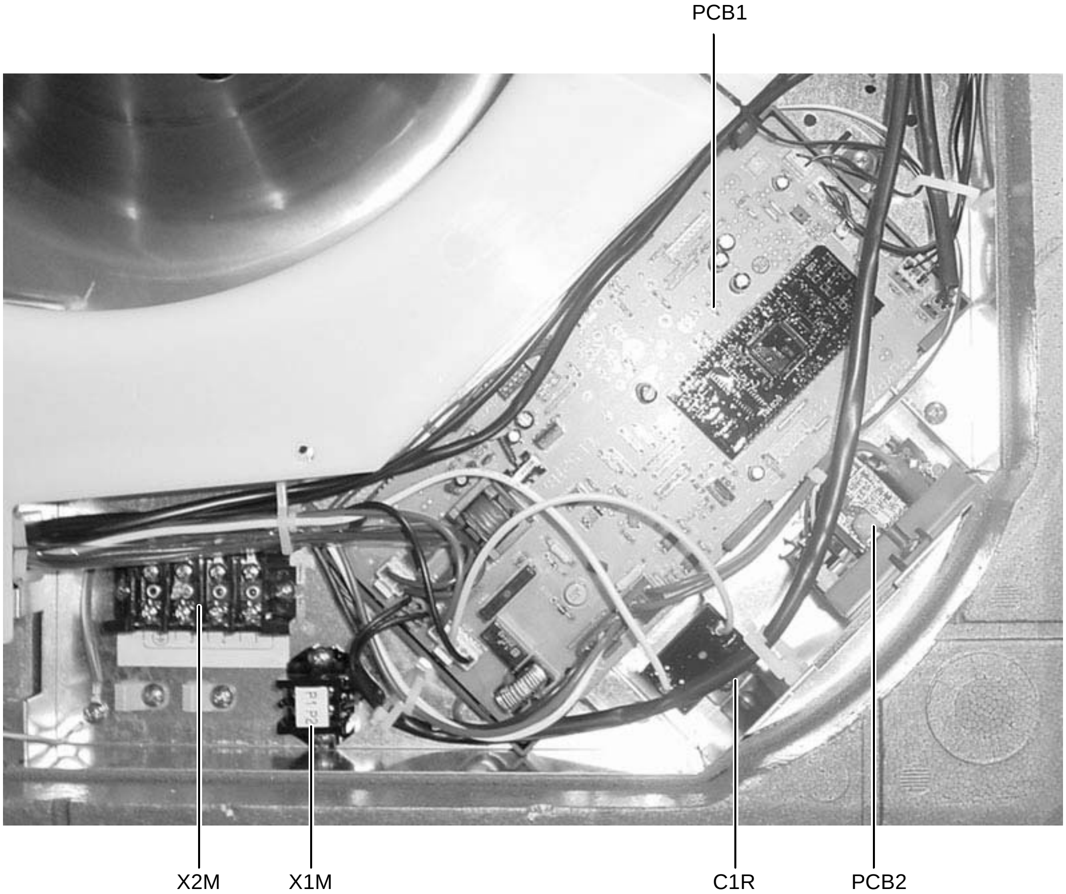
The table below contains the components of the switch box.

Symbol	Component
PCB1	Printed circuit board
C1R	Fan motor capacitor
T1R	Transformer
X2M	Terminal strip (interconnection wiring)
X1M	Terminal strip (for remote controller P1/P2)
R1T	Air thermistor

5.9 FUYP71BV17, FUYP100BV17 and FUYP125BV17

Switch box

The illustration below shows the switch box layout.



Components

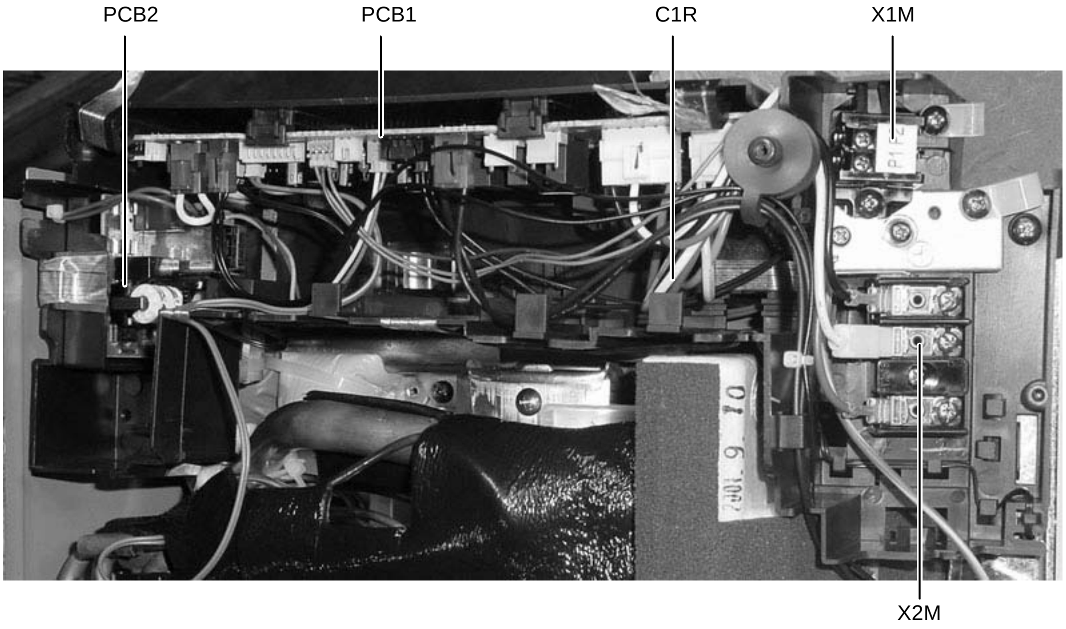
The table below contains the components of the switch box.

Symbol	Component
PCB1	Printed circuit board
PCB2	Printed circuit board (power supply PCB)
C1R	Fan motor capacitor
X1M	Terminal strip (for remote controller P1/P2)
X2M	Terminal strip (interconnection wiring)

5.10 FAYP100BV1

Switch box

The illustration below shows the switch box layout.



Components

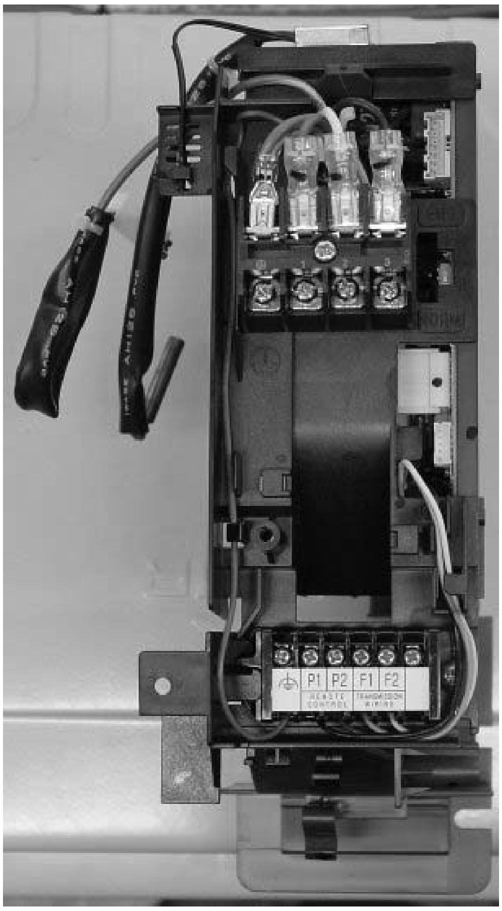
The table below contains the components of the switch box.

Symbol	Component
PCB1	Printed circuit board
PCB2	Printed circuit board
C1R	Fan motor capacitor
X1M	Terminal strip (for remote controller P1/P2)
X2M	Terminal strip (for interconnection wiring)

5.11 FAYP71LV1

Switch box

The illustration below shows the switch box layout.



Components

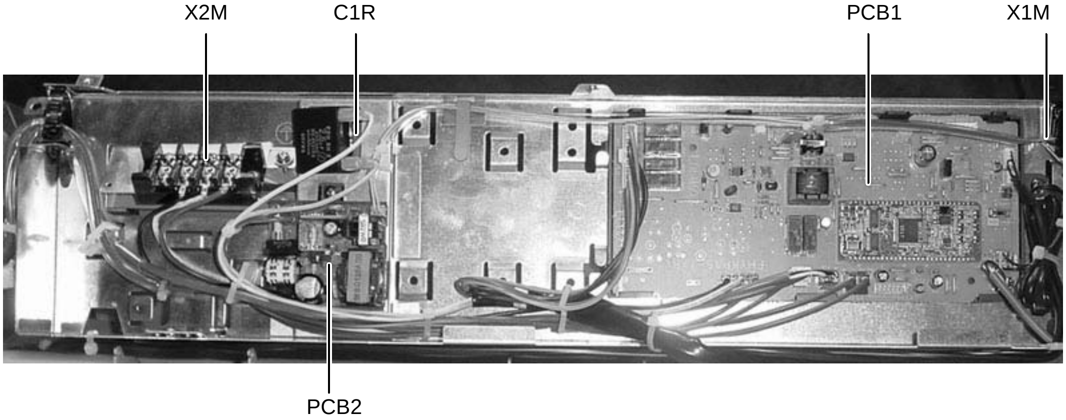
The table below contains the components of the switch box.

Symbol	Component

5.12 FHYKP35BV1, FHYKP45BV1, FHYKP60BV1 and FHYKP71BV1

Switch box

The illustration below shows the switch box layout.



Components

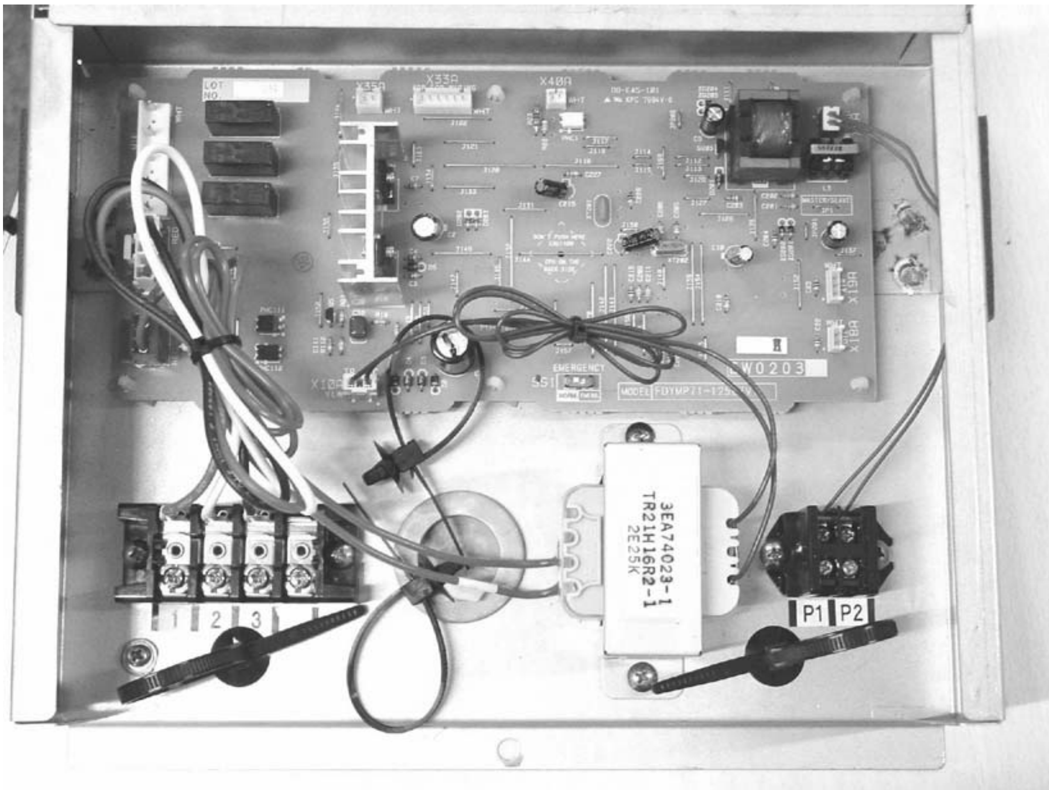
The table below contains the components of the switch box.

Symbol	Component
X2M	Terminal strip (interconnection wiring)
C1R	Fan motor capacitor
PCB1	Printed circuit board
X1M	Terminal strip (for remote controller P1/P2)
PCB2	Printed circuit board (power supply PCB)

5.13 FDYMP71~125L7V1

Switch box

The illustration below shows the switch box layout.



Components

The table below contains the components of the switch box.

Symbol	Component

6 Wiring Diagrams: Outdoor Units

6.1 What Is in This Chapter?

Introduction

This chapter contains the wiring diagrams of the outdoor units.

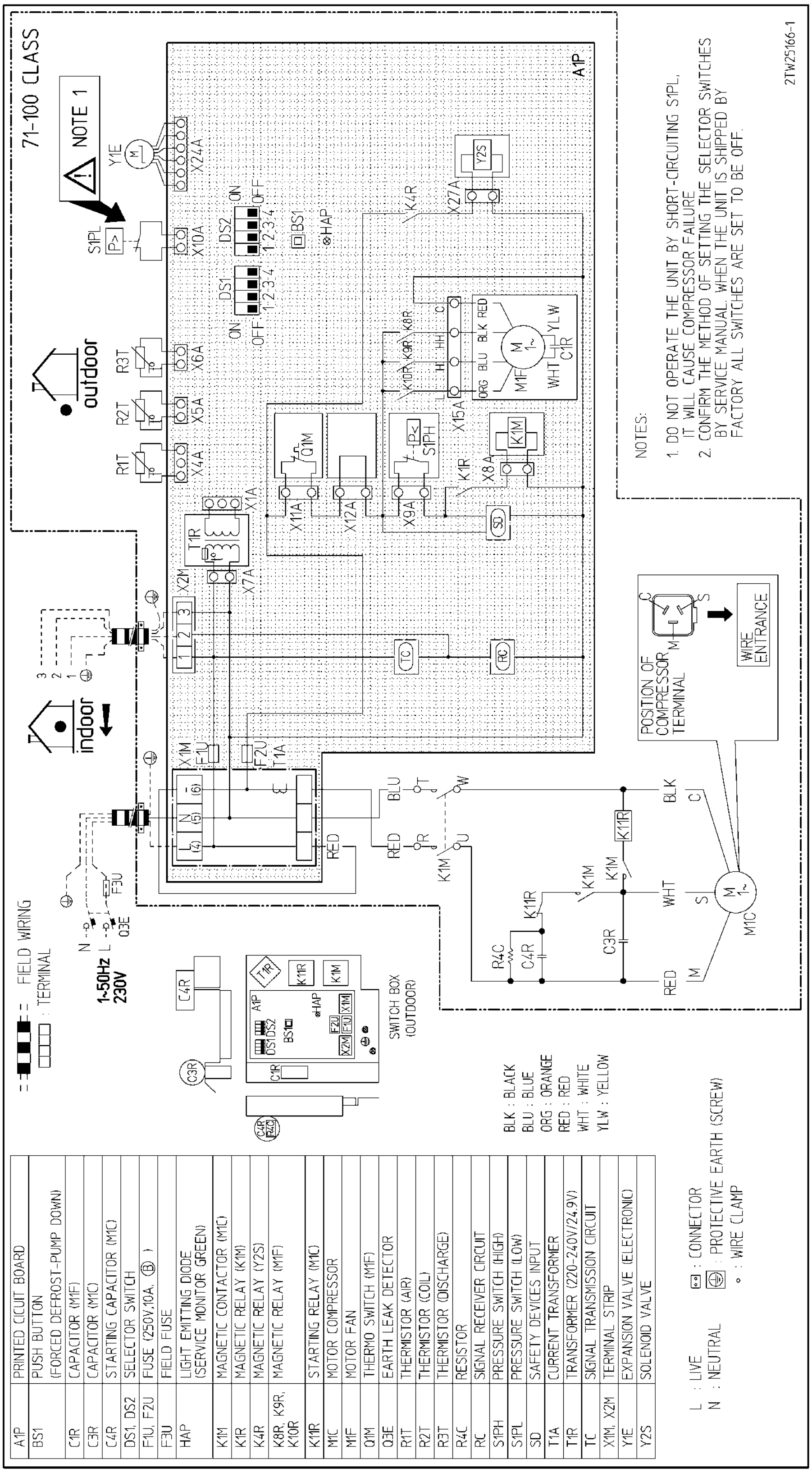
Wiring diagrams

This chapter contains the following wiring diagrams:

6.2 RP71-100L7V1

Wiring diagram

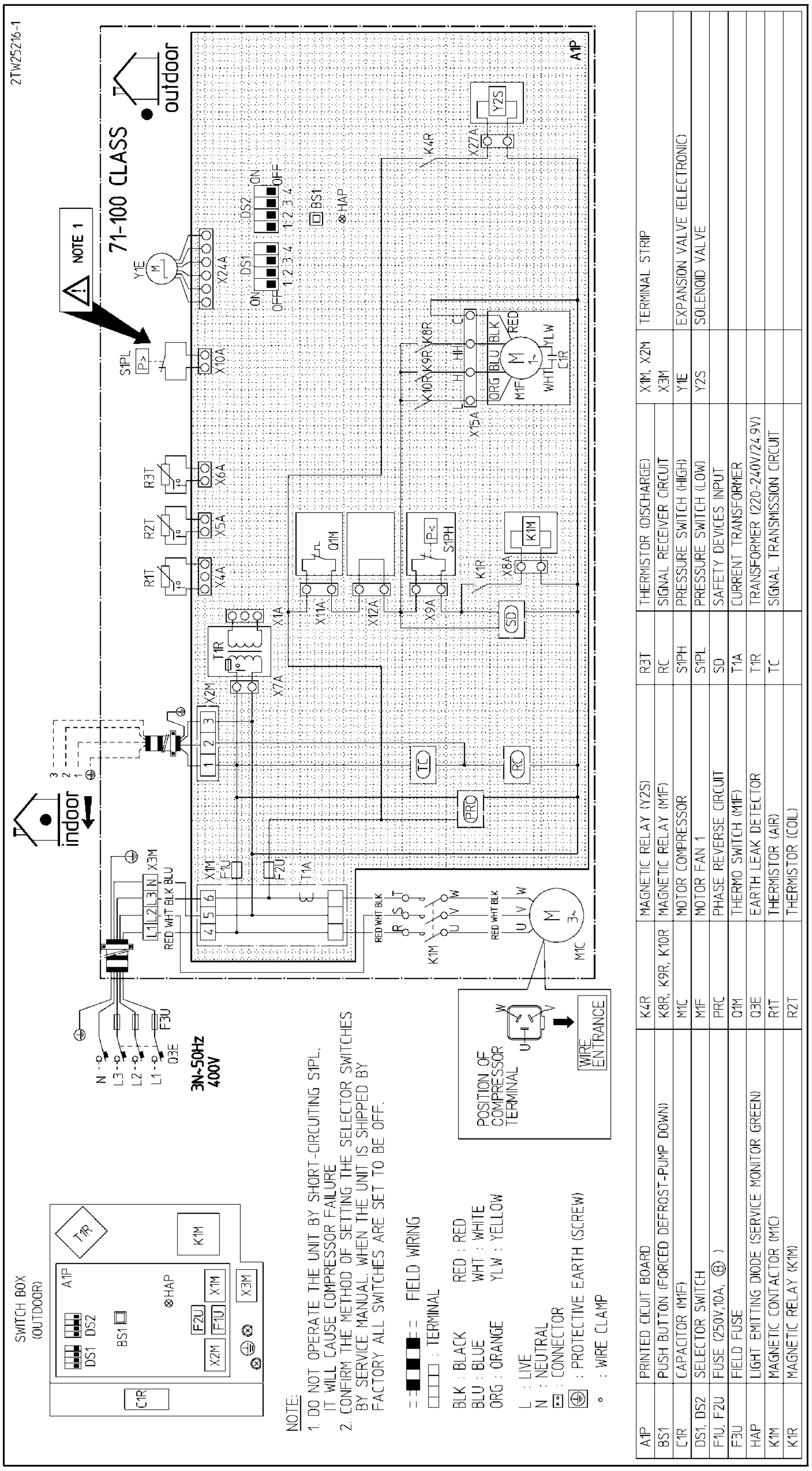
The illustration below shows the wiring diagram of the unit.



6.3 RP71-100L7W1

Wiring diagram

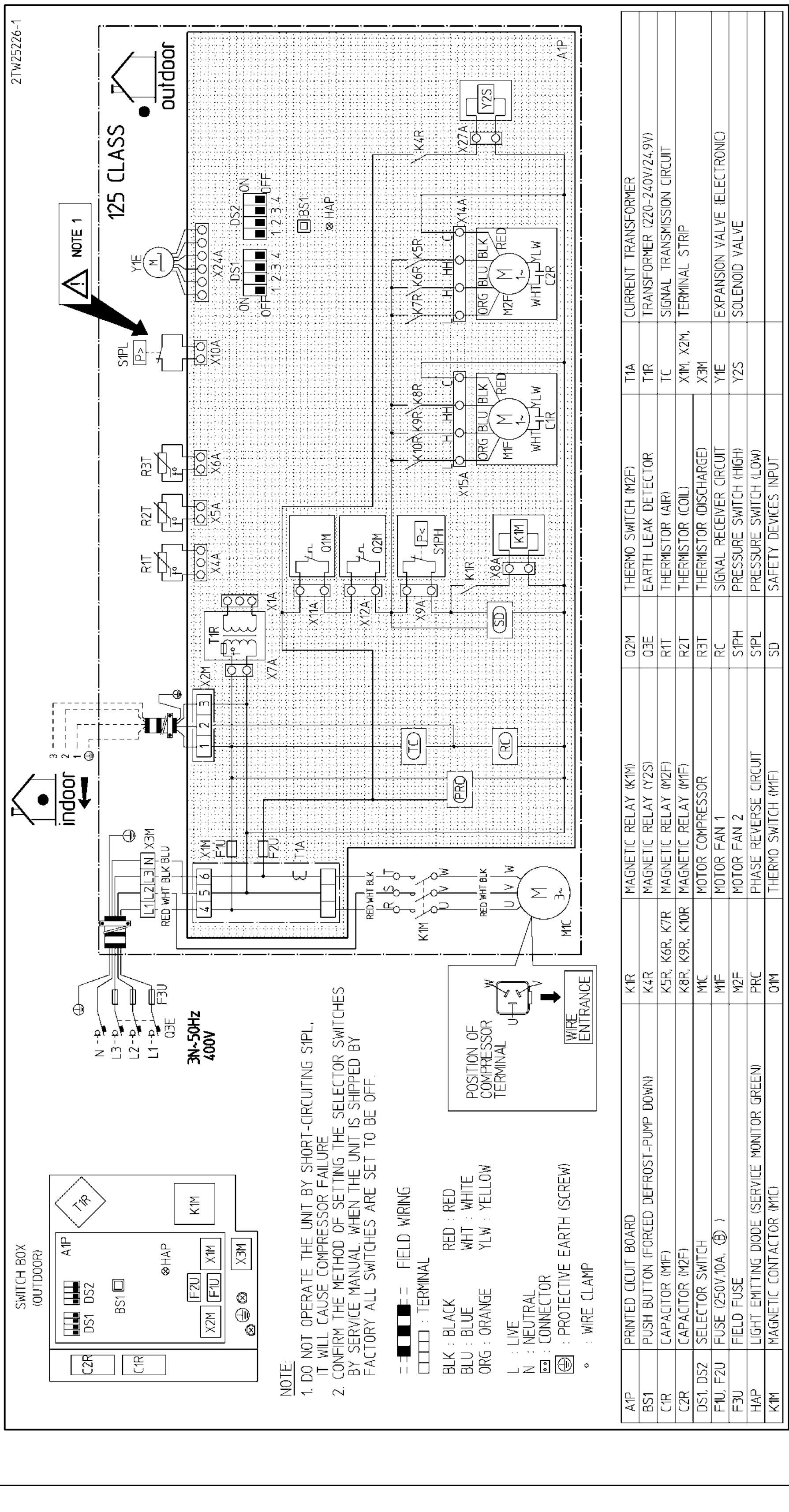
The illustration below shows the wiring diagram of the unit.



6.4 RP125L7W1

Wiring diagram

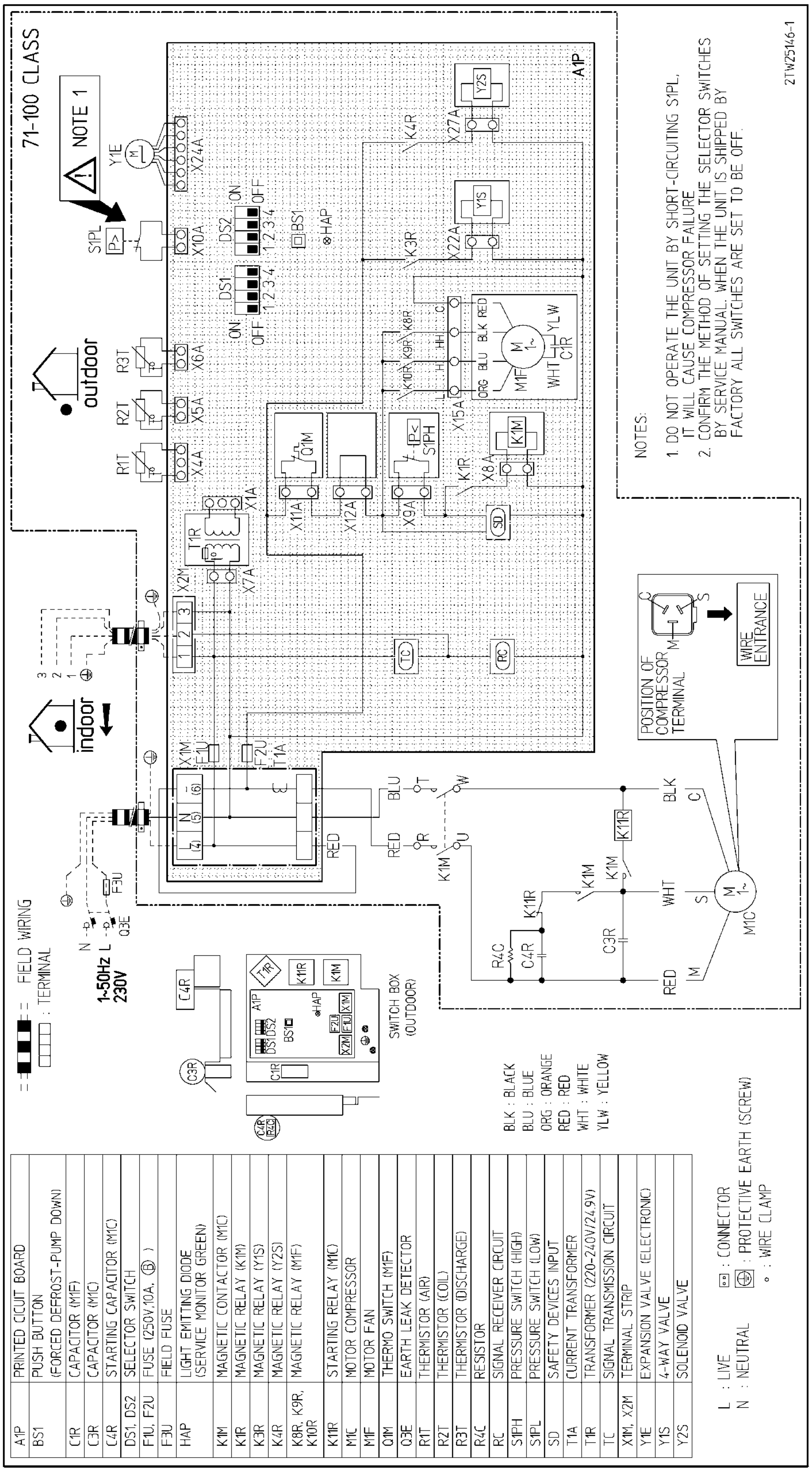
The illustration below shows the wiring diagram of the unit.



6.5 RYP71-100L7V1

Wiring diagram

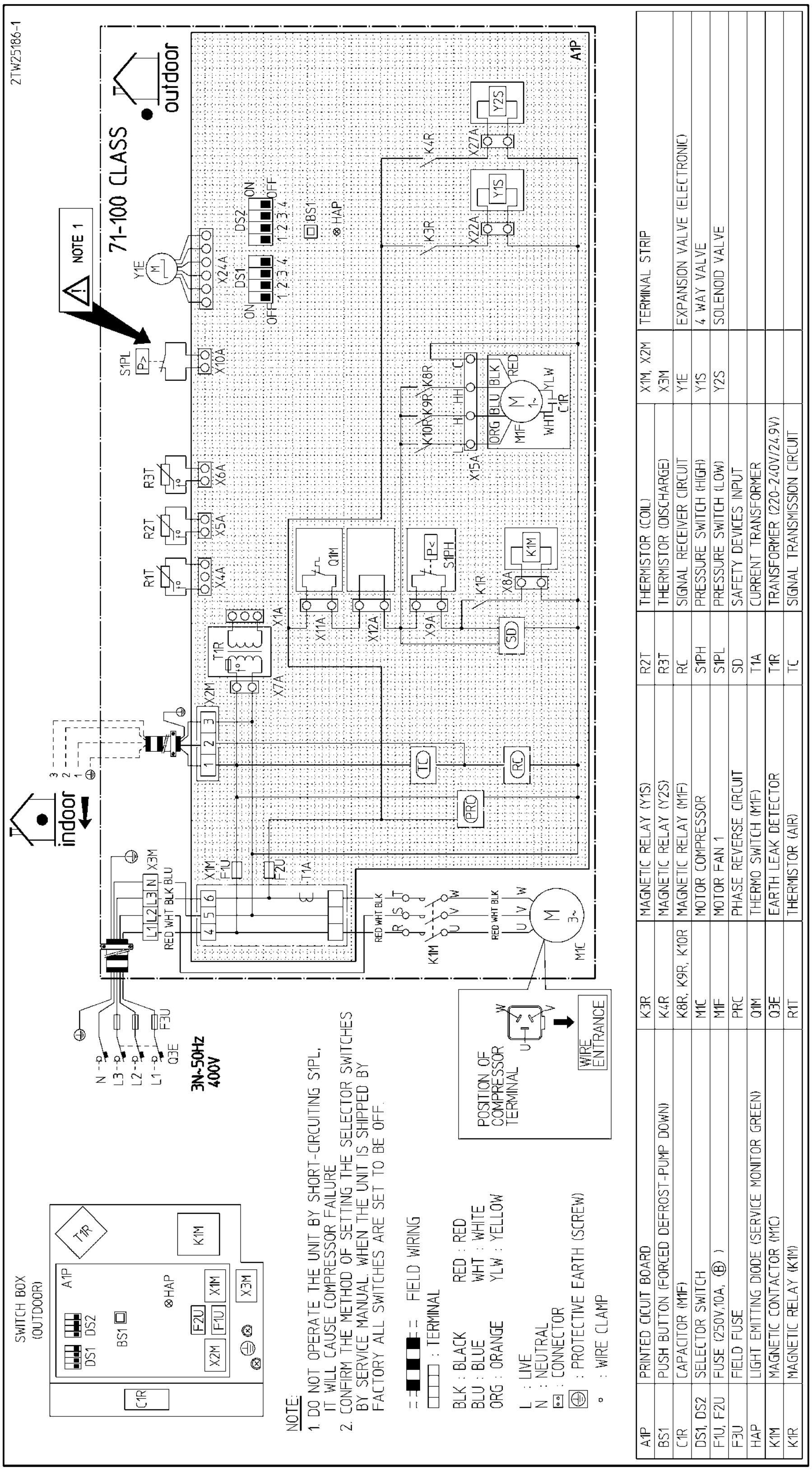
The illustration below shows the wiring diagram of the unit.



6.6 RYP71-100L7W1

Wiring diagram

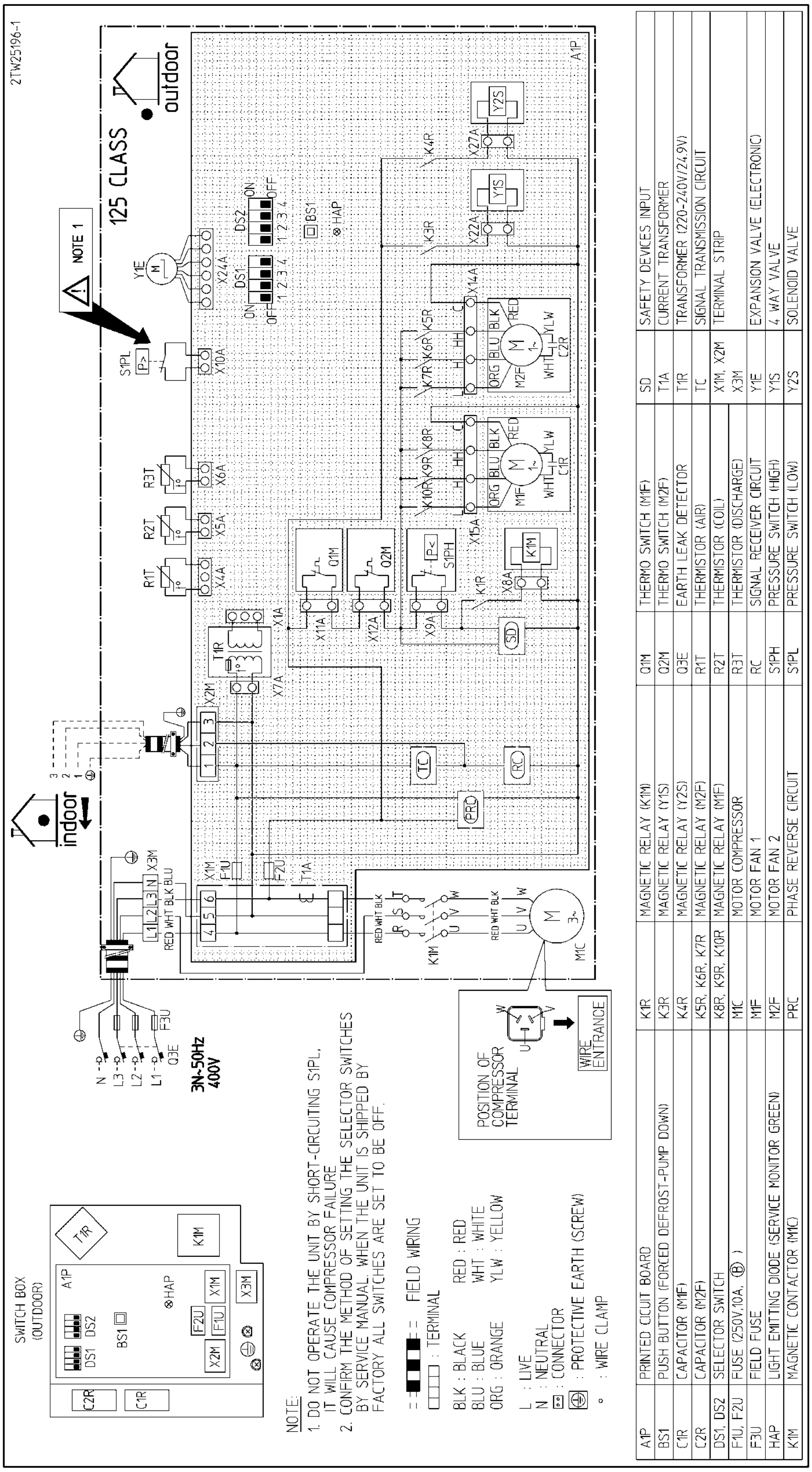
The illustration below shows the wiring diagram of the unit.



6.7 RYP125L7W1

Wiring diagram

The illustration below shows the wiring diagram of the unit.



7 Wiring Diagrams: Indoor Units

7.1 What Is in This Chapter?

Introduction

This chapter contains the wiring diagrams of the indoor units.

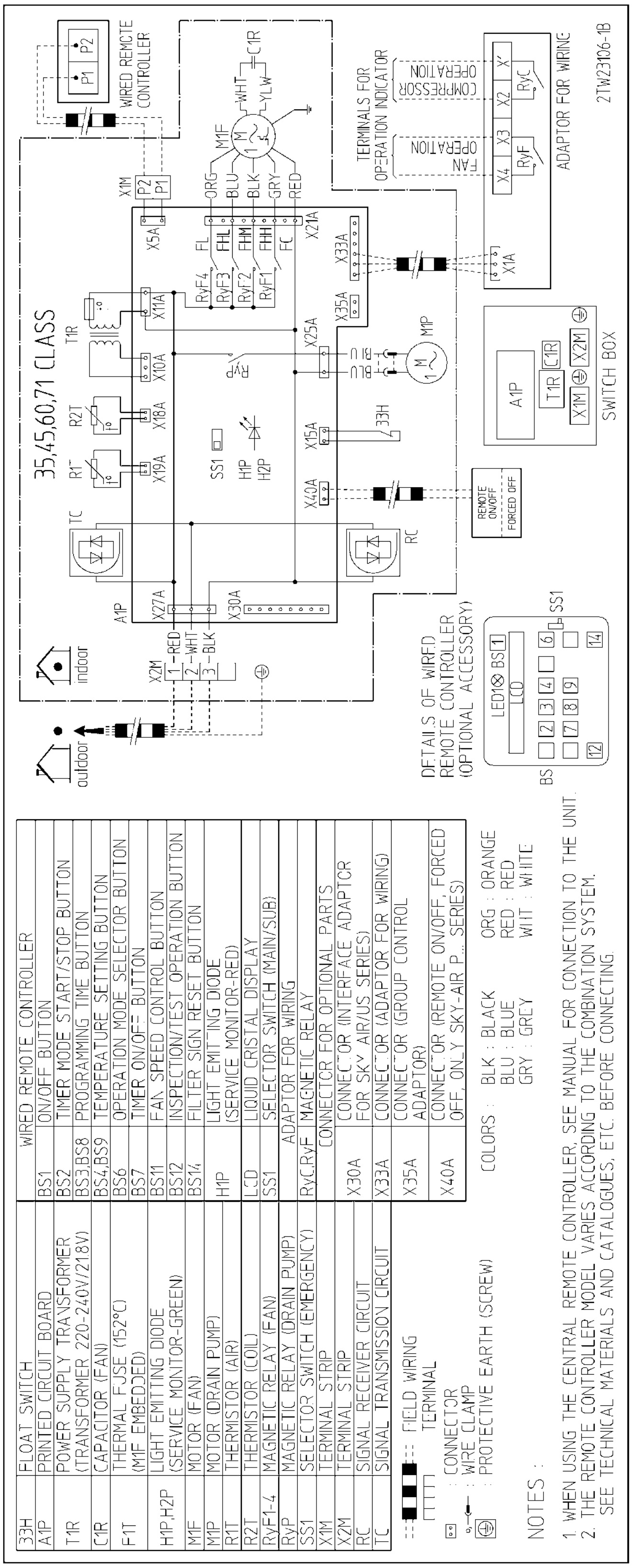
Wiring diagrams

This chapter contains the following wiring diagrams:

7.2 FHYBP35B7V1, FHYBP45B7V1, FHYBP60B7V1 and FHYBP71B7V1

Wiring diagram

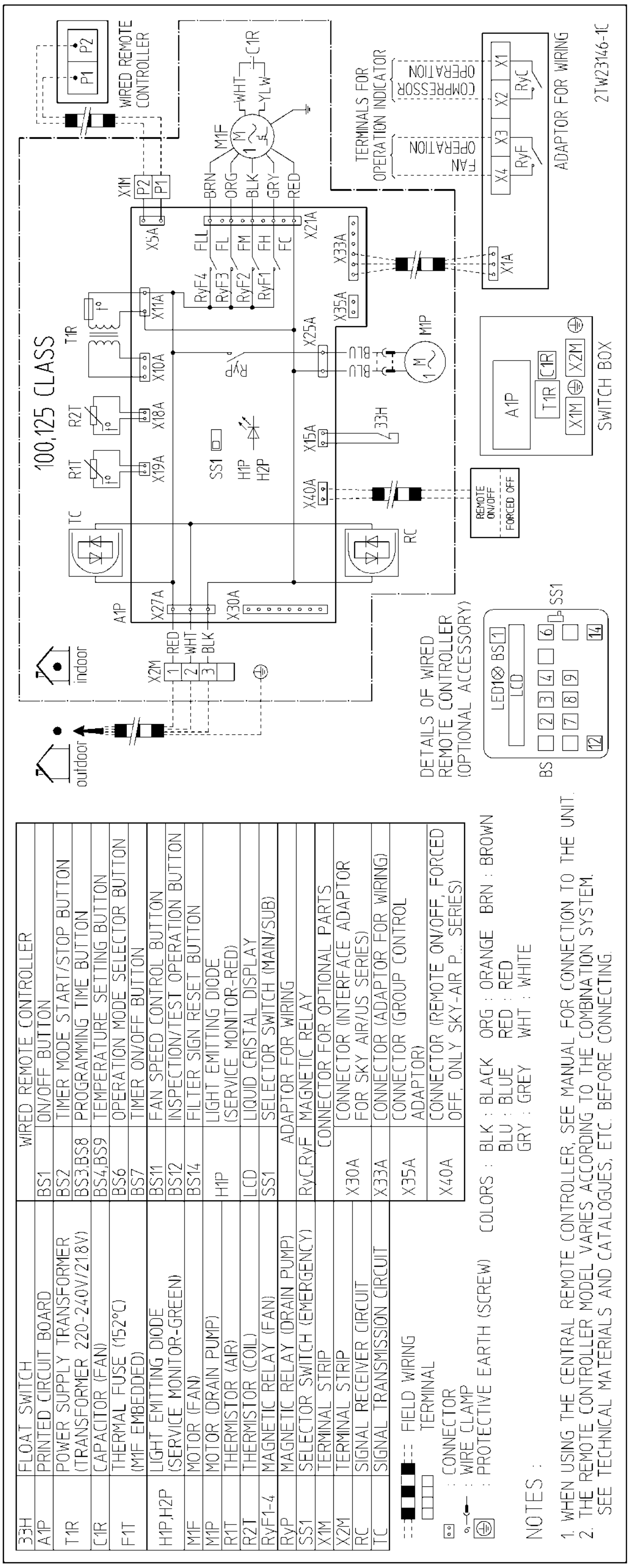
The illustration below shows the wiring diagram of the unit.



7.3 FHYBP100B7V1 and FHYBP125B7V1

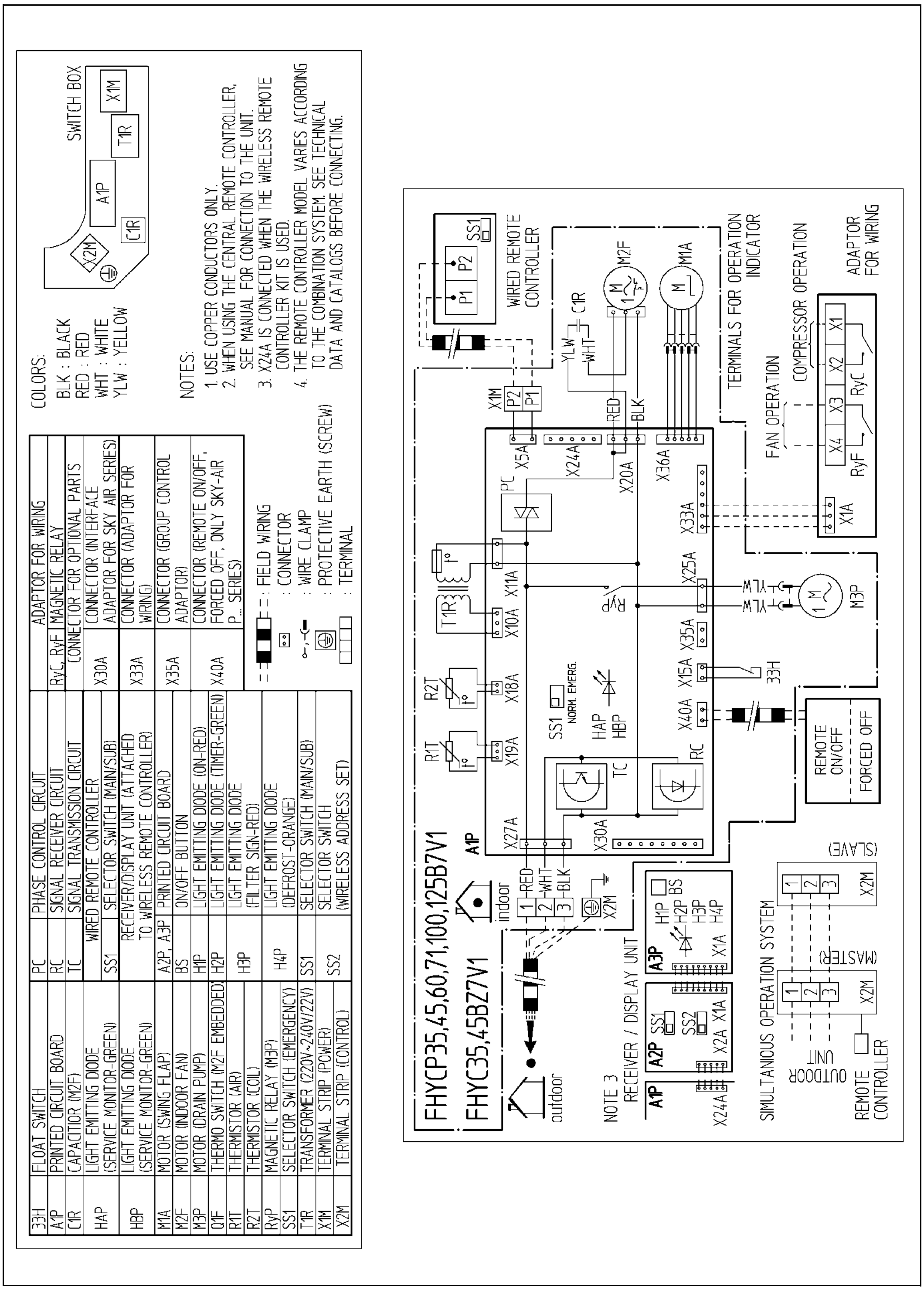
Wiring diagram

The illustration below shows the wiring diagram of the unit.



7.4 FHYCP35B7V1, FHYCP45B7V1, FHYCP60B7V1, FHYCP71B7V1, FHYCP100B7V1 and FHYCP125B7V1

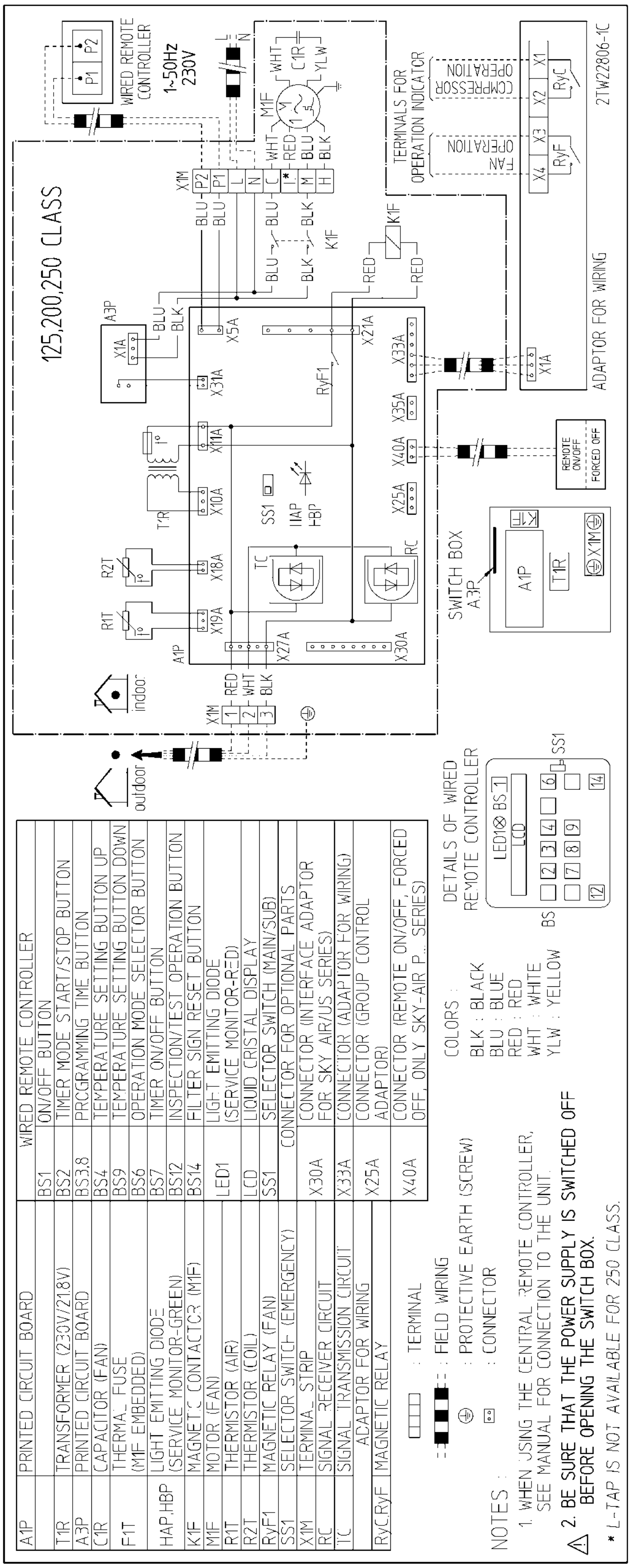
Wiring diagram The illustration below shows the wiring diagram of the unit.



7.5 FDYP125B7V1

Wiring diagram

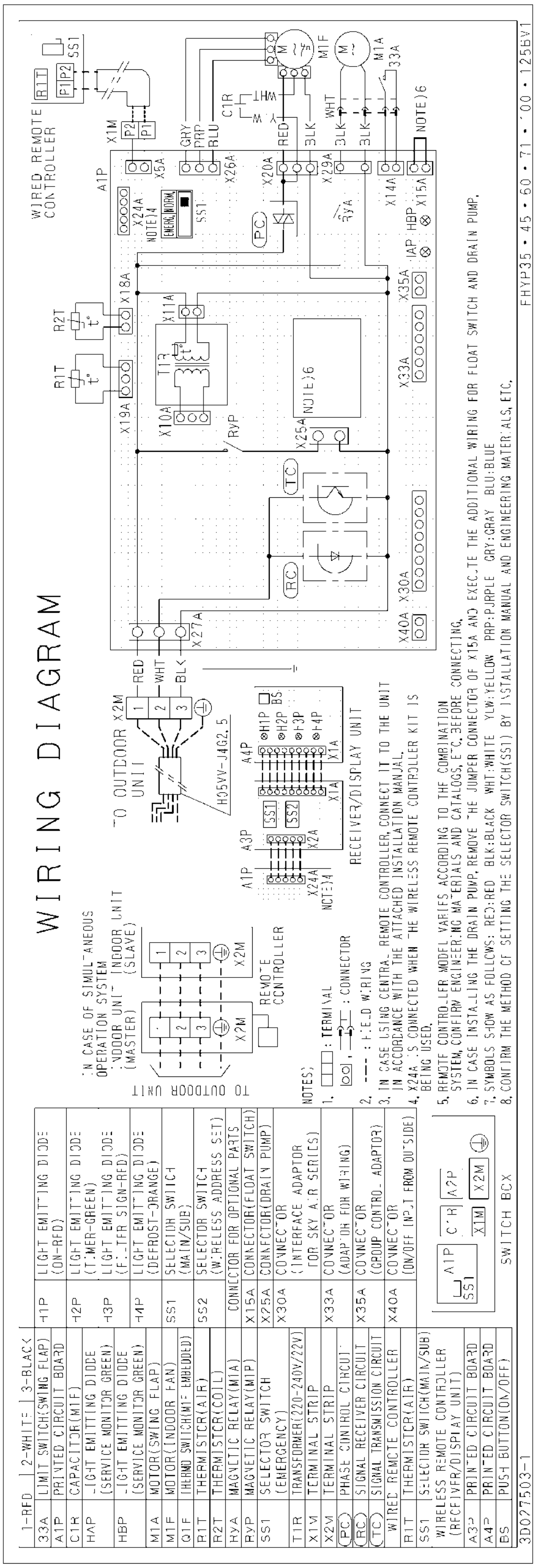
The illustration below shows the wiring diagram of the unit.



7.6 FHYP35BV1, FHYP45BV1, FHYP60BV1, FHYP71BV1, FHYP100BV1 and FHYP125BV1

Wiring diagram

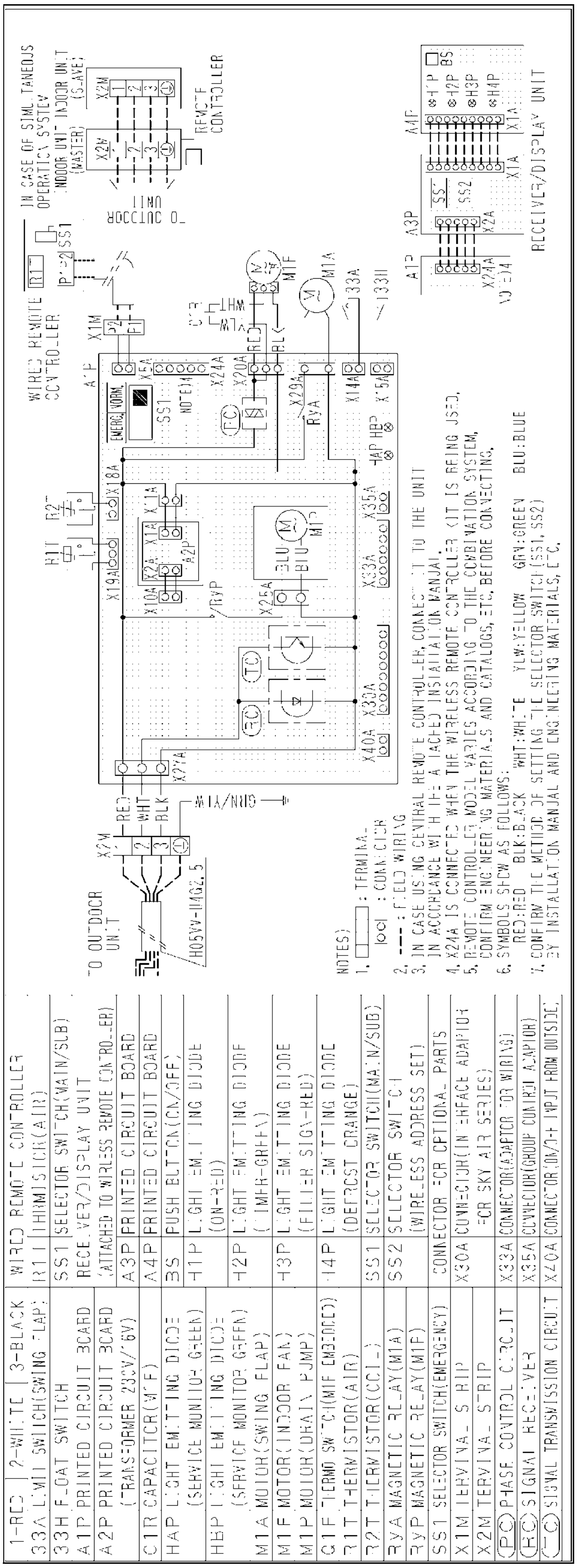
The illustration below shows the wiring diagram of the unit.



7.7 FUYP71BV17, FUYP100BV17 and FUYP125BV17

Wiring diagram

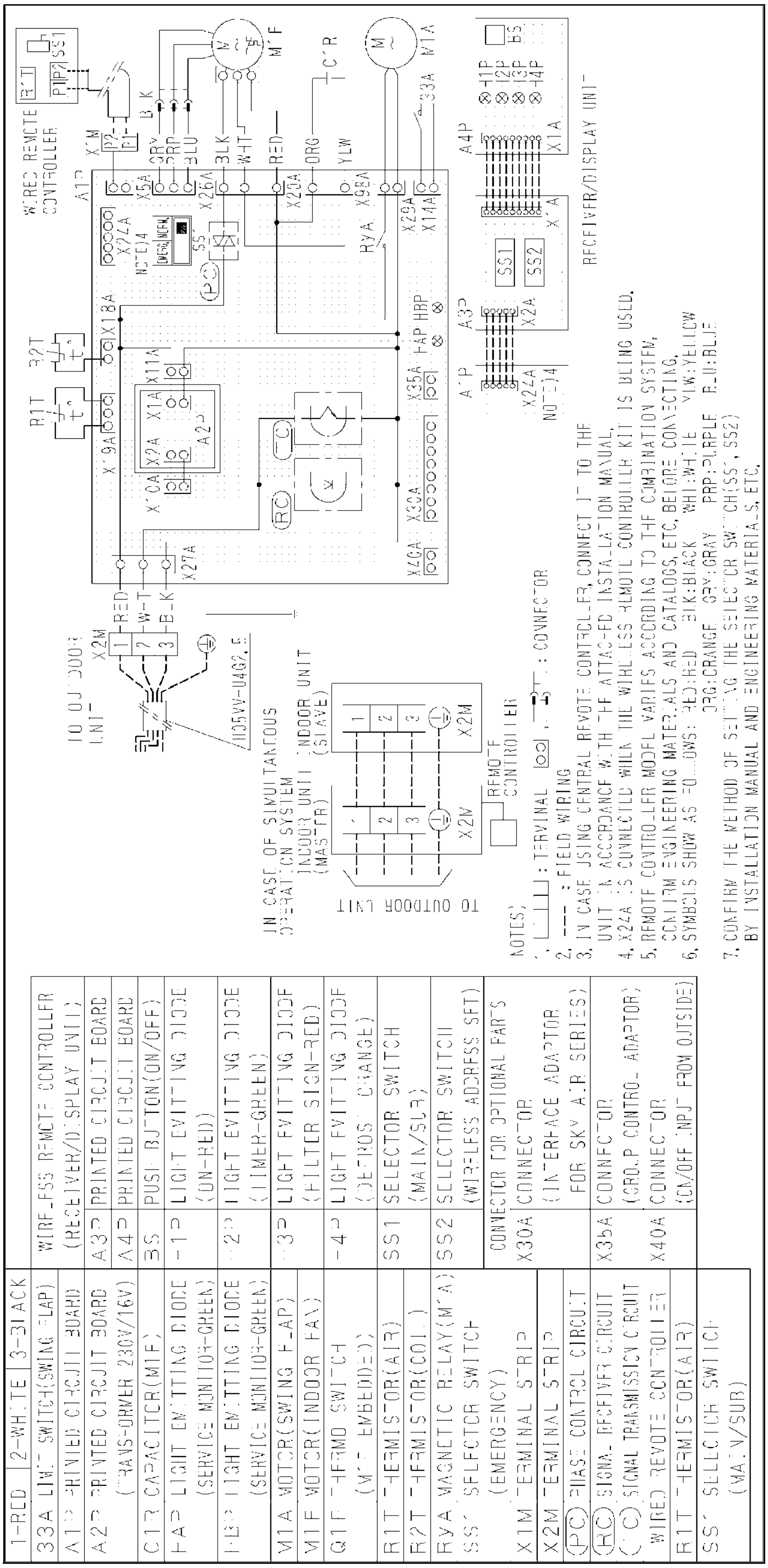
The illustration below shows the wiring diagram of the unit.



7.8 FAYP100BV1

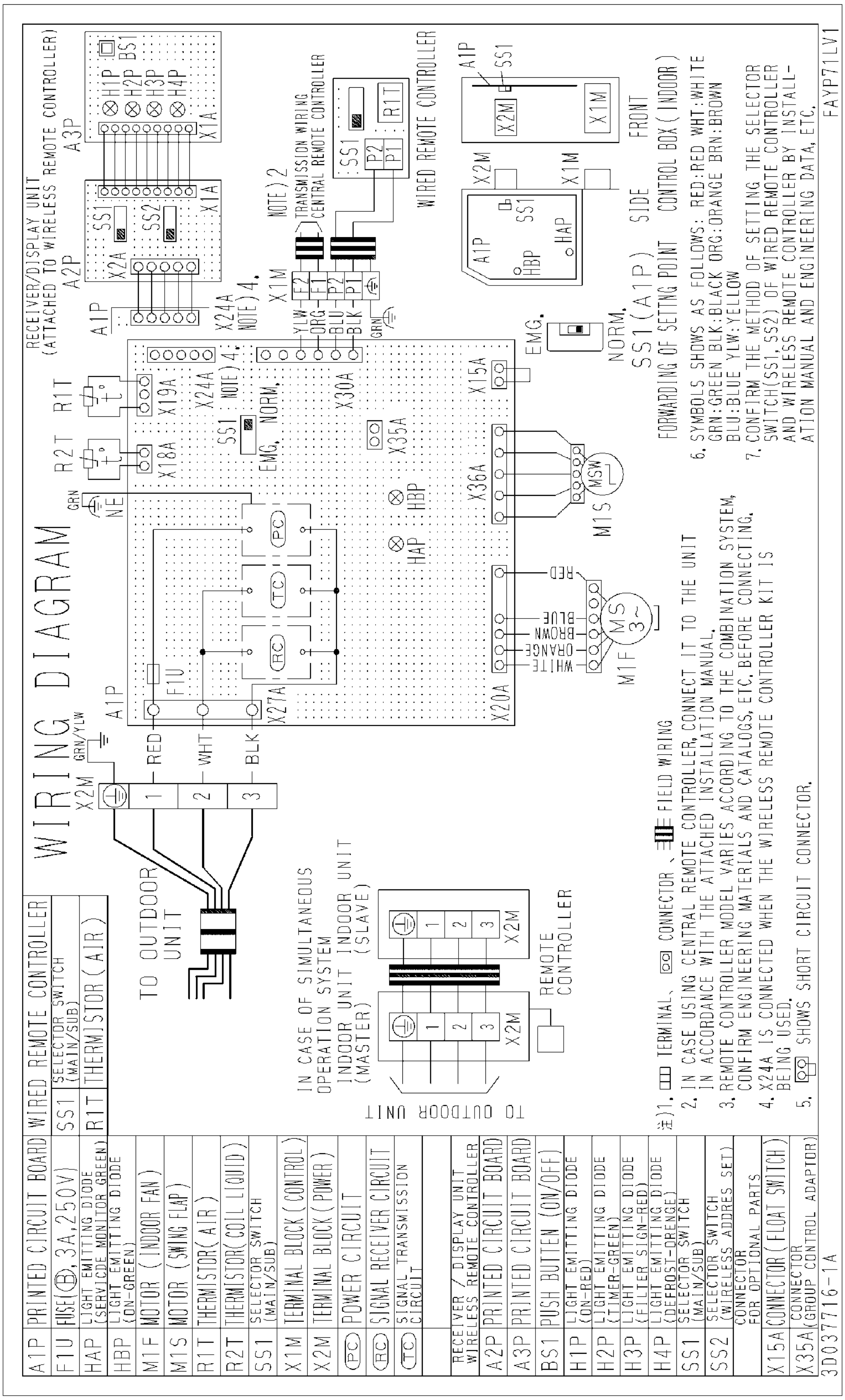
Wiring diagram

The illustration below shows the wiring diagram of the unit.



7.9 FAYP71LV1

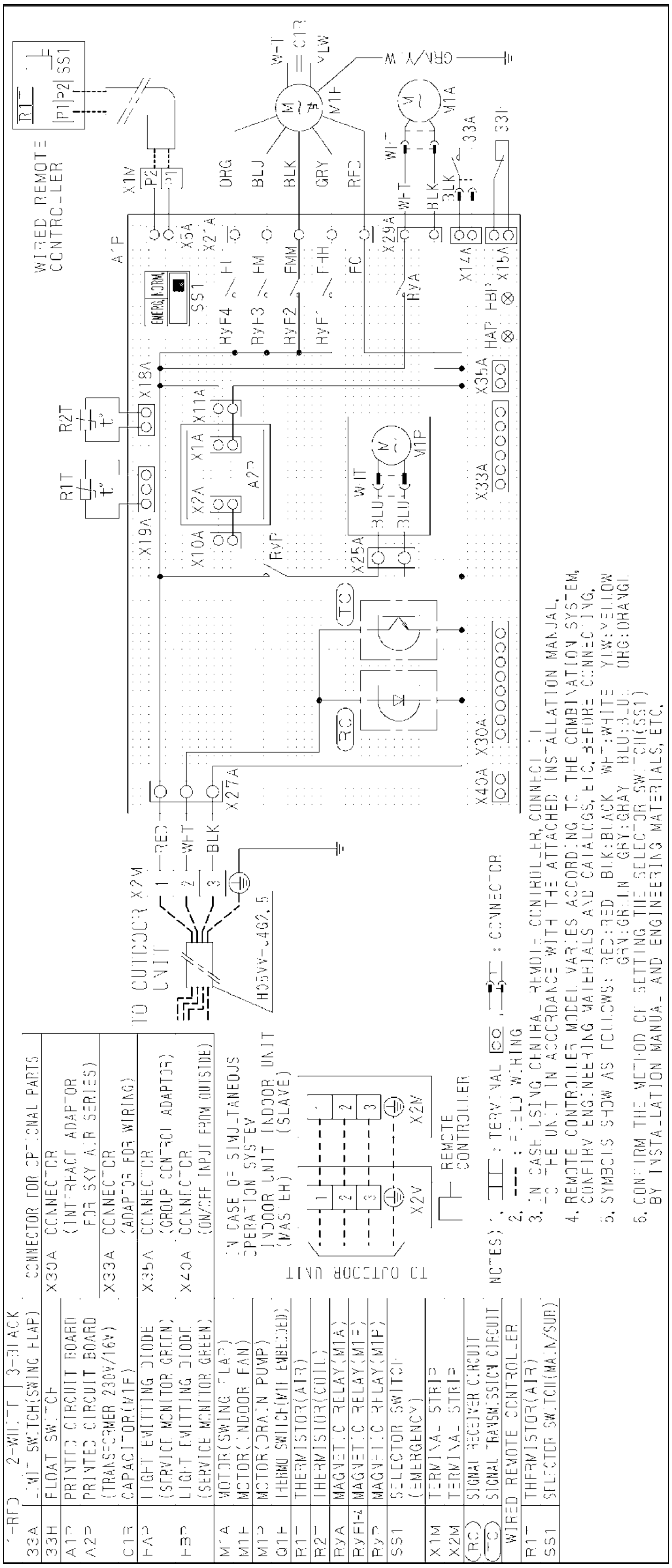
Wiring diagram The illustration below shows the wiring diagram of the unit.



7.10 FHYKP35BV1, FHYKP45BV1, FHYKP60BV1 and FHYKP71BV1

Wiring diagram

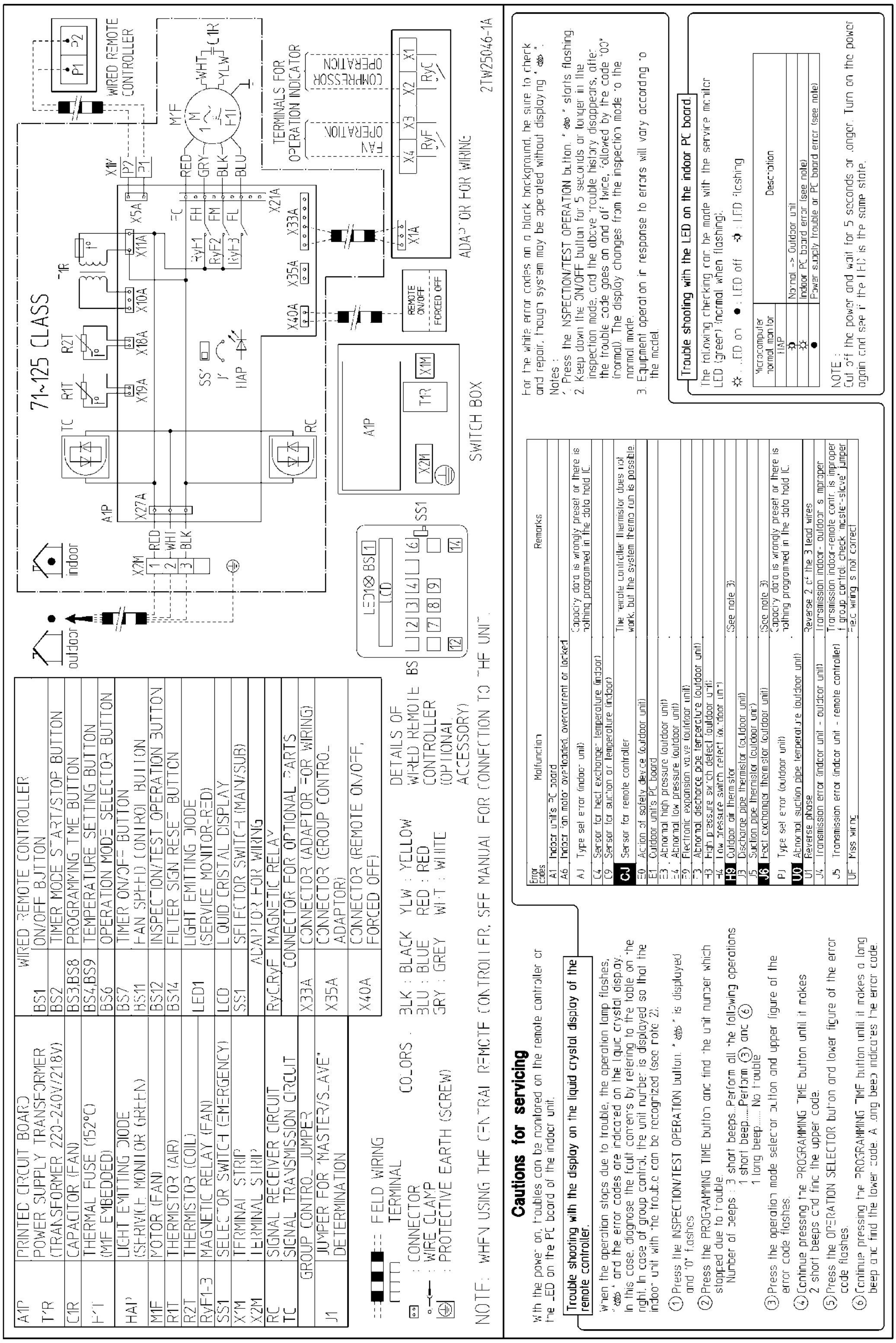
The illustration below shows the wiring diagram of the unit.



7.11 FDYMP71~125L7V

Wiring diagram

The illustration below shows the wiring diagram of the unit.



8 PCB Layout

8.1 What Is in This Chapter?

Introduction

This chapter contains the following information:

- ➤ It describes which unit uses which PCB types
- ➤ It shows the PCB connectors.

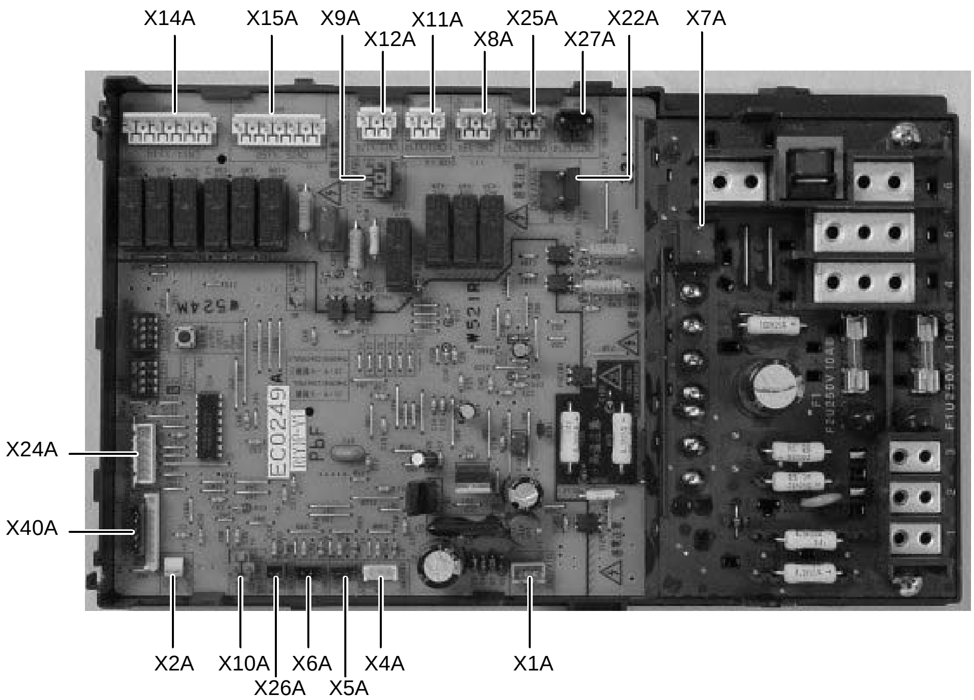
PCB layouts

This chapter contains the following PCB layouts:

8.2 R(Y)P71~125L7V1 and R(Y)P71~125L7W1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X2A	—	?
X4A	R1T	Air thermistor
X5A	R2T	Coil thermistor
X6A	R3T	Discharge pipe thermistor
X7A-X1A	T1R	Transformer (220-240V/24,9V)
X8A	K1M	Magnetic contactor (M1C)
X9A	S1PH	High-pressure switch
X10A	S1PL	Low-pressure switch
X11A	Q1M	Thermo switch (M1F)
X12A	Q2M	Thermo switch (M2F)
X14A	M2F	Fan motor 2
X15A	M1F	Fan motor 1
X22A	Y1S	4-way valve
X24A	Y1E	Electronic expansion valves
X25A	E1HC	Crankcase heater
X26A	—	Connector for capacity setting adapter
X27A	Y2S	Solenoid valve
X40A	—	Connector for VRV service checker

8.3 FHYCP35~125B7V1

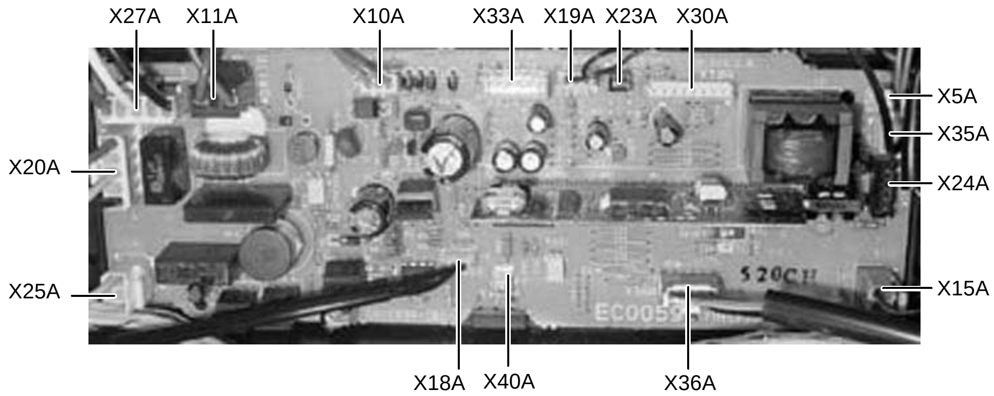
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
EC0059	FHYCP35/45/60/71/100/125B7V1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	T1R	Transformer 230V/22V secundary
X11A	T1R	Transformer 230V/22V primary
X15A	33H	Float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X20A	M2F	Fan motor
X23A	—	Connector to capacity adaptor
X24A	X2A on A2P	Receiver IR remote controller (option)
X25A	M3P	Drain pump motor
X27A	X2M	Power supply and communication to the outdoor unit
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X33A	—	Connector to adaptor for wiring (option KRP1B)
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for optional PCB KRP4
X36A	M1A	Swing flap motor
X40A	—	Connector for EKRORO

8.4 FHYBP35~125B7V1

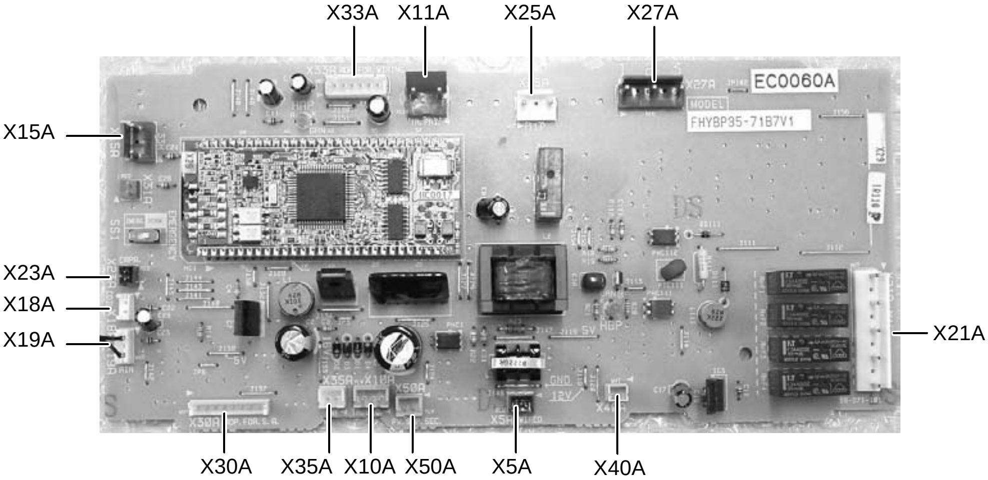
Applicable

The table below contains the applicable PCB numbers and units of this PCB type.

PCB No.	Unit
EC0060A	FHYBP35/45/60/71B7V1
EC0061A (illustrated below)	FHYBP100/125B7V1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	T1R	Transformer 230V/22V secundary
X11A	T1R	Transformer 230V/22V primary
X15A	33H	Float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X21A	M1F	Fan motor
X23A	—	Connector to capacity adaptor
X25A	M3P	Drain pump motor
X27A	X2M	Power supply and communication to the outdoor unit
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X33A	—	Connector to adaptor for wiring (option KRP1B)
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for optional PCB KRP4
X40A	—	Connector for EKRORO
X50A	—	In case no transfo is used: Connector to power supply PCB

8.5 FDYP125~250B7V1

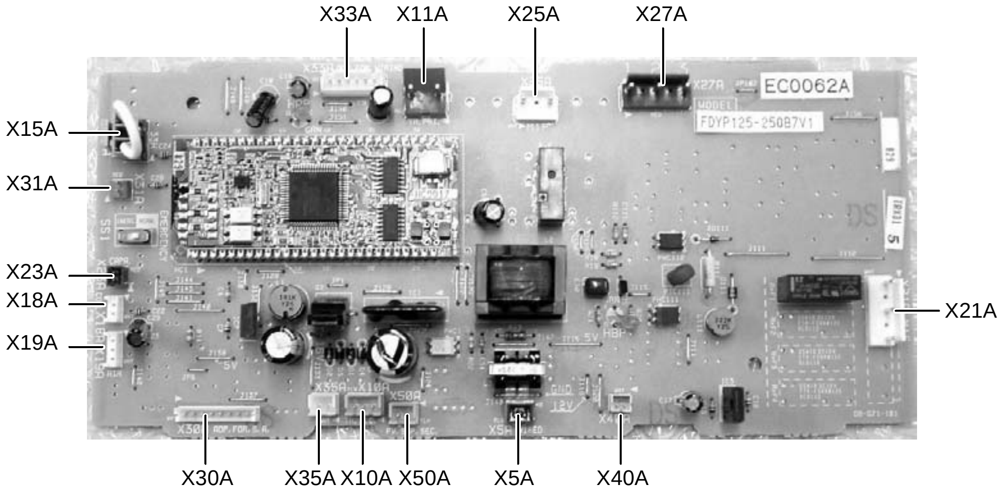
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
EC0062A (illustrated below)	FDYP125/200/250B7V1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	T1R	Transformer 230V/22V secundary
X11A	T1R	Transformer 230V/22V primary
X15A	33H	Float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X21A	K1F	Magnetic contactor for fan motor (M1F)
X23A	—	Connector to capacity adaptor
X25A	M3P	Drain pump motor
X27A	X2M	Power supply and communication to the outdoor unit
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X31A	—	Connector to A3P (interlock PCB)
X33A	—	Connector to adaptor for wiring (option KRP1B)
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for optional PCB KRP4
X40A	—	Connector for EKRORO.
X50A	—	In case no transfo is used: Connector to power supply PCB

8.6 FUYP71~125BV1(7)

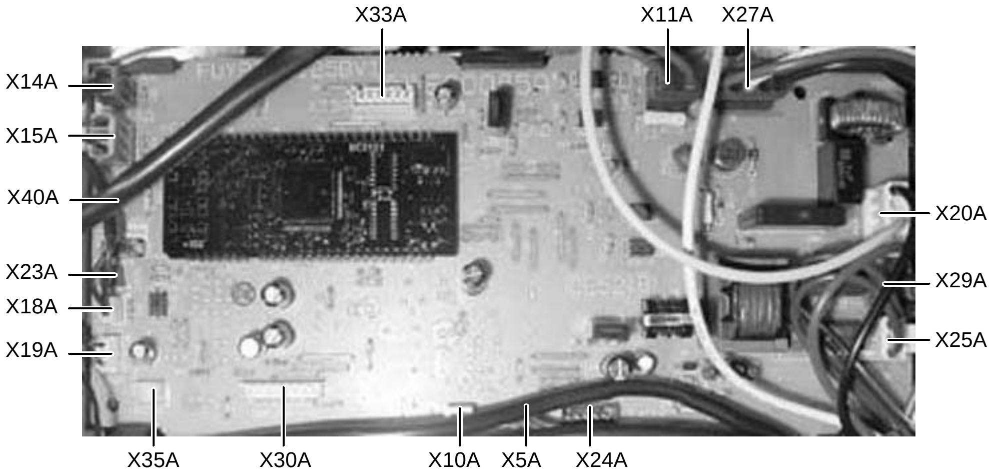
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
EC0065	FUYP71/100/125BV17

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	X2A on A2P	PCB (transformer 230 V/16 VDC)
X11A	X1A on A2P	PCB (transformer 230 V/16 VDC)
X14A	33A	Limit switch (swing flap)
X15A	33H	Float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X20A	M1F	Fan motor
X23A	—	Connector for capacity adaptor
X24A	X2A on A3P	Connected when the wireless remote controller kit is used
X25A	M1P	Drain pump motor
X27A	X2M	Power supply and communication to the outdoor unit
X29A	M1A	Swing flap motor
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X33A	—	Connector to adaptor for wiring (option KRP1B)
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for optional PCB KRP4
X40A	—	Connector for EKRORO

8.7 FHYKP35~71BV1

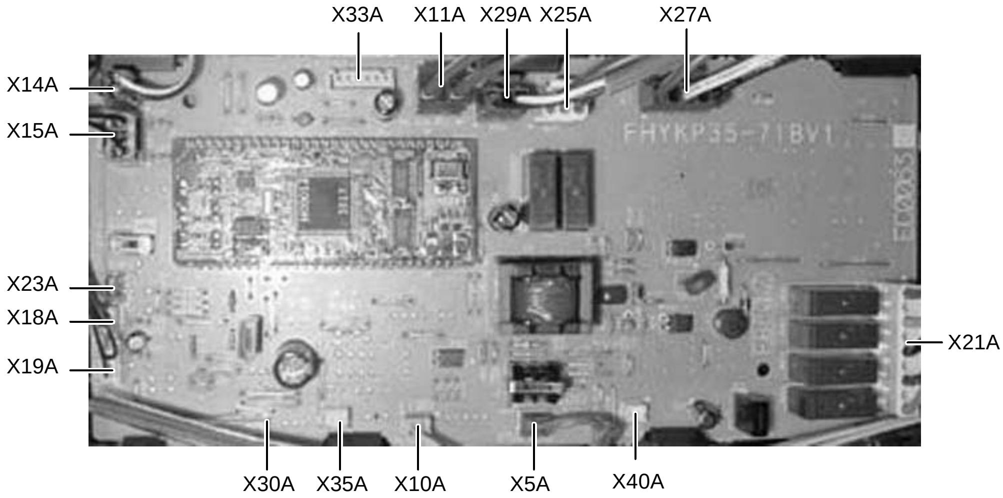
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
EC0063	FHYKP35/45/60/71BV1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	X2A on A2P	PCB (transformer 230 V/16 VDC)
X11A	X1A on A2P	PCB (transformer 230 V/16 VDC)
X14A	33A	Limit switch (swing flap)
X15A	33H	Float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X21A	—	Fan motor
X23A	—	Connector to capacity adaptor
X25A	M1P	Drain pump motor
X27A	X2M	Power supply and communication to the outdoor unit
X29A	M1A	Swing flap motor
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X33A	—	Connector to adaptor for wiring (option KRP1B)
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for optional PCB KRP4
X40A	—	Connector for EKRORO

8.8 FHYP35~125BV1

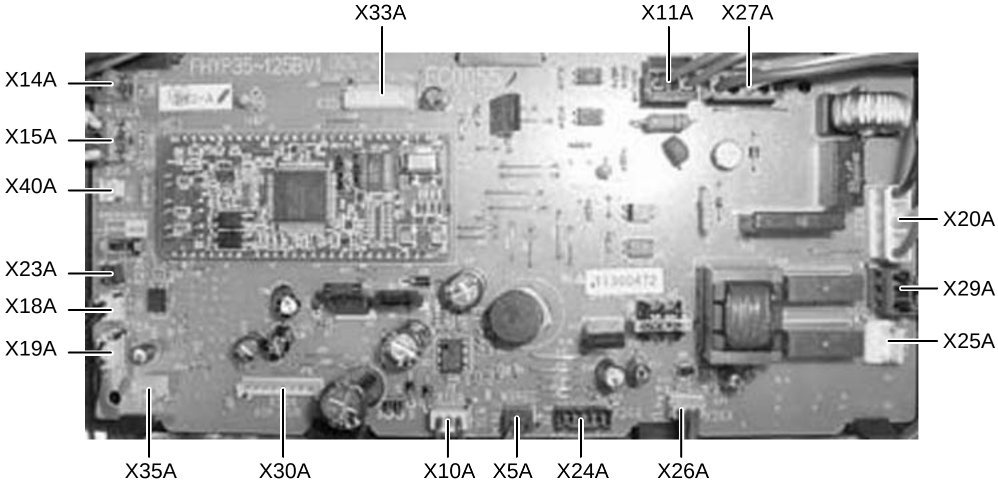
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
EC0055	FHYP35/45/60/71/100/125BV1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	T1R	Transformer 230 V/22 V
X11A	T1R	Ttransformer 230 V/22 V
X14A	33A	Limit switch (swing flap)
X15A	—	When installing the drain pump, remove the jumper connector of X15A and carry out the additional wiring for float switch and drain pump. Connector to float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X20A	M1F	Fan motor
X23A	—	Connector for capacity adaptor
X24A	X2A on A3P	X24A is connected when the wireless remote controller kit is used
X25A	—	Connector to drain pump motor
X26A	M1F	Fan motor feedback cable
X27A	X2M	Power supply and communication to the outdoor unit
X29A	M1A	Swing flap motor
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X33A	—	Connector to adaptor for wiring (option KRP1B)
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for opi-tonal PCB KRP4
X40A	—	Connector for EKRORO

8.9 FAYP100BV1

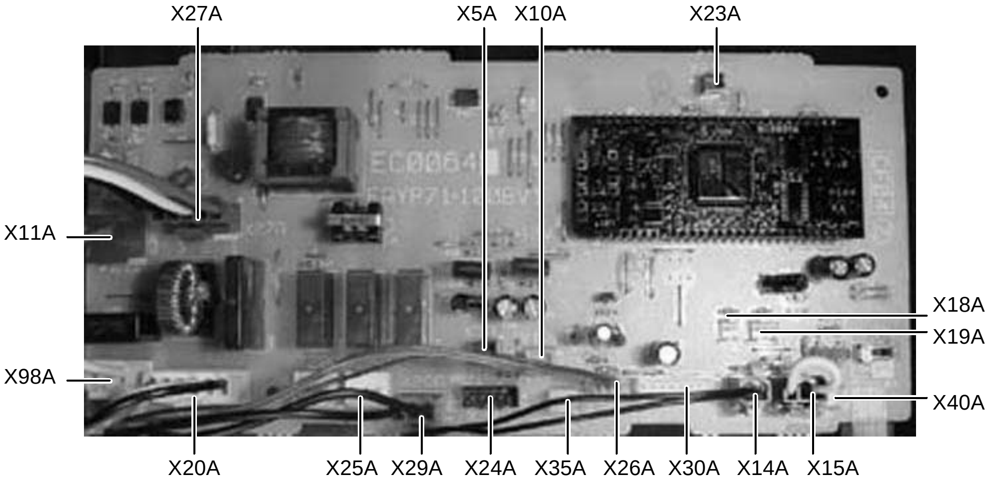
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
ECOO64	FAYP100BV1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description
X5A	X1M	Terminal strip (P1 and P2)
X10A	X2A on A2P	Power supply PCB
X11A	X1A on A2P	Power supply PCB
X14A	33A	Limit switch (swing flap)
X15A	—	Float switch
X18A	R2T	Heat exchanger thermistor
X19A	R1T	Air thermistor
X20A	M1F	Fan motor power supply
X23A	—	Connector for capacity adaptor
X24A	X2A on A3P	X24A is connected when the wirelesss remote controller is used
X25A	—	Drain pump motor
X26A	M1F	Fan motor feedback cable
X27A	X2M	Power supply and communication to the outdoor unit
X29A	M1A	Swing flap motor
X30A	—	Connector to interface adaptor for Sky Air series (DTA102)
X40A	—	Connector for EKRORO
X35A	X1A (KRP4)	Connector to group control adaptor power supply (16 VDC) for optional PCB KRP4
X98A	C1R	Capacitor (M1F)

8.10 FAYP71LV1

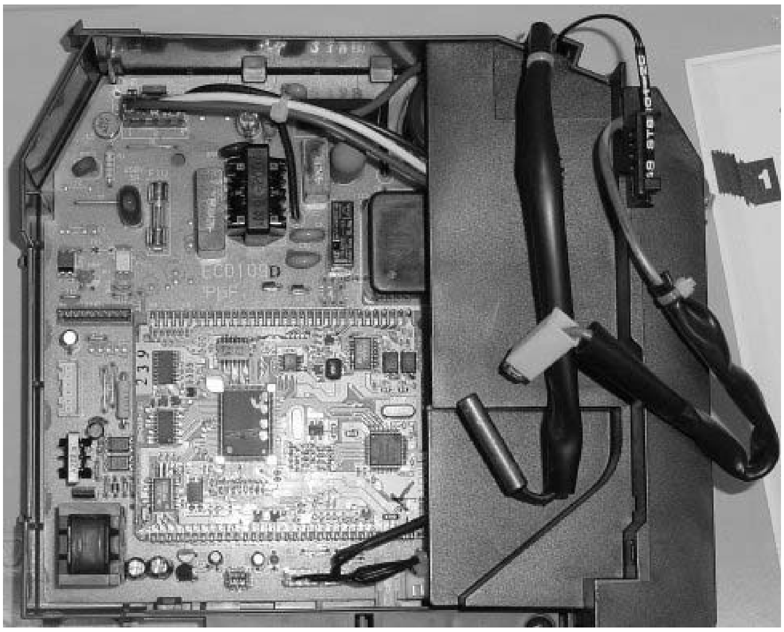
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
ECO109 set (No X40A on PCB)	FAYP71LV1 see PCB FAYP~L

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description

8.11 FDYMP71~125L7V1

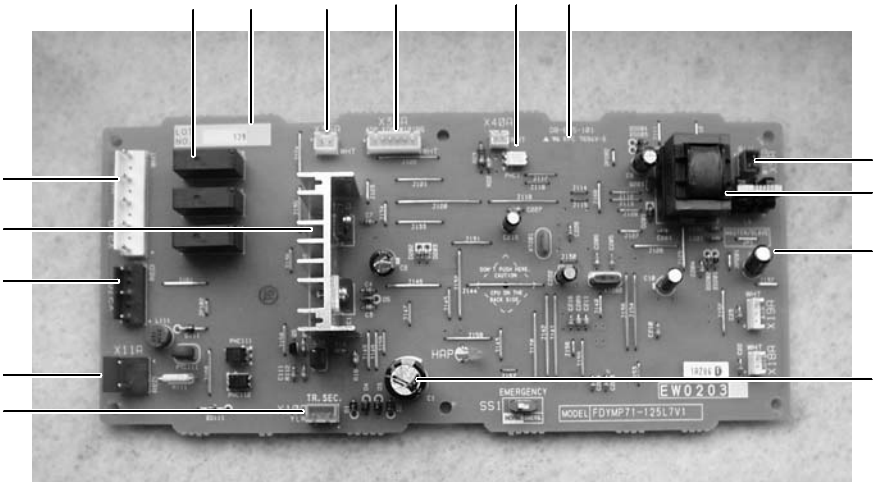
Applicable

The table below contains the applicable PCB number and unit of this PCB type.

PCB No.	Unit
EW203	FDYMP71/100/125L7V1

PCB

The illustration below shows the PCB connectors.



Connectors

The table below describes the PCB connectors.

Connector	Connected to	Description

Part 2
Functional Description

What is in this part? This part contains the following chapters:

2

1 General Functionality

1.1 What Is in This Chapter?

Introduction

This chapter contains information on the functions used to control the system. Understanding these functions is vital when diagnosing a malfunction that is related to the functional control.

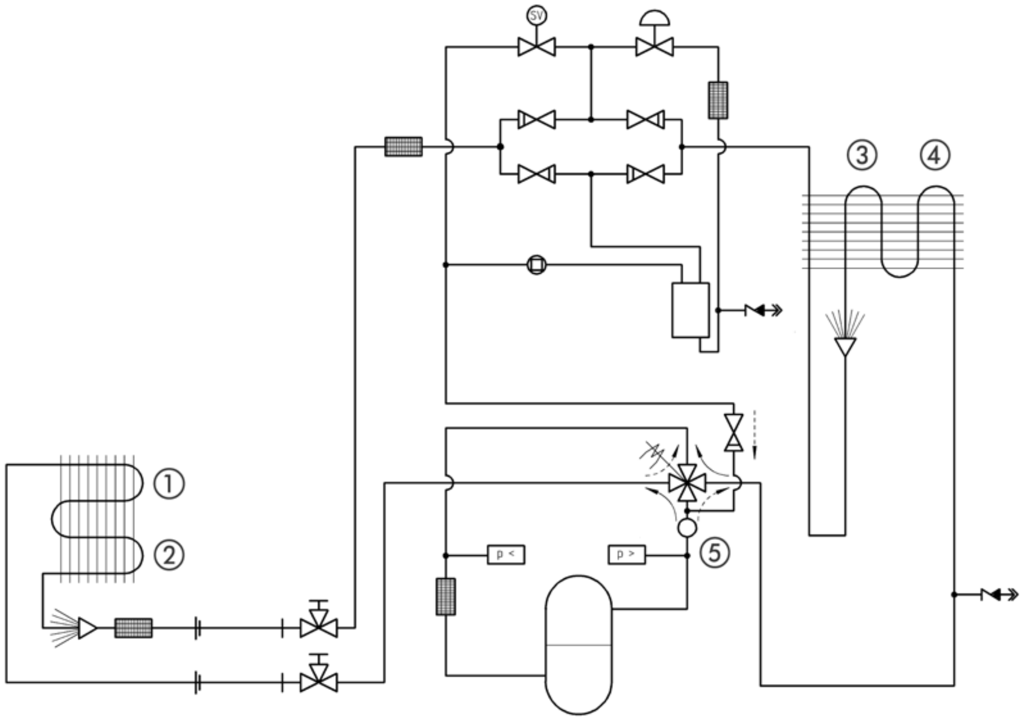
Overview

This chapter contains the following topics:

1.2 Functions of Thermistors

Locating the thermistors

The thermistors on the illustration below are used to control the system. This control secures a proper operation and prevents problems of the unit.



Functions of the thermistors

The table below contains the thermistor functions of the large h/p.

Ther-mistor	Location	Wiring symbol	Mode	Function
1	Indoor heat exchanger	R2T	Cooling	➤ Optimise discharge temp. (evap. temp.) ➤ Freeze-up thermostat
			Heating	➤ Optimise discharge temp. (cond. temp.) ➤ Integral capacity calculation (to determine defrost) ➤ Hot start indoor fan ➤ Peak cut-off ➤ Outdoor unit fan control

Ther-mistor	Location	Wiring symbol	Mode	Function
2	Indoor air return	R1T	Cooling	➤ Thermostat control ➤ Start-up control expansion valve and outdoor unit fan ➤ Outdoor fan speed control
			Heating	➤ Thermostat control ➤ Start-up control expansion valve and outdoor unit fan ➤ Integral capacity calculation (to determine defrost) ➤ Peak cut-off
3	Outdoor heat exchanger	R2T	Cooling	➤ Optimise discharge temp. (cond. temp.) ➤ Outdoor fan speed control (O.L.)
			Heating	➤ Optimise discharge temp. (evap. temp.) ➤ Defrost start/stop
4	Outdoor air return	R1T	Cooling	➤ Outdoor fan speed control ➤ Start-up control expansion valve and outdoor unit fan
			Heating	➤ Integral capacity calculation (to determine defrost) ➤ Start-up control expansion valve and outdoor unit fan
5	Discharge pipe com-pressor	R3T	Cooling	➤ Cooling overload ➤ Check refrigerant shortage/too much refrigerant ➤ Expansion valve control
			Heating	➤ Heating overload ➤ Check refrigerant shortage/too much refrigerant ➤ Expansion valve control

1.3 Operating Modes and Control Modes

Operating modes

The two operating modes are:

- Normal operating mode
- Forced operating mode.

Control modes

The table below contains the different control modes of the Sky Air B-series air conditioners.

Operating mode	Control mode
Normal operating mode	Cooling
	Dry keep
	Heating
	Defrosting (automatic)
	Freeze-up
	Pump down
	Stop mode
Forced operating mode	Forced cooling
	Forced heating
	Forced defrosting

1.4 Forced Operating Mode (Emergency Operation)

Applicable units

The forced operating mode is applicable for the following units:

Model type	For this unit, you can go to...
RP71-125L	Forced cooling mode
RYP71-125L	➤ Forced cooling mode ➤ Forced heating mode

Purpose

The table below describes the purpose of the forced operating mode.

If...	Then...
➤ Remocon is malfunctioning, or ➤ Indoor PCB is off line, or ➤ Outdoor PCB is off line	Forced operating mode can be used to go to cooling or heating. In forced operating mode, the compressor is forced to operate until the malfunctioning indoor or outdoor PCB is back online.

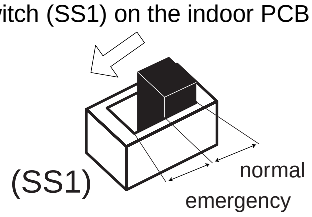
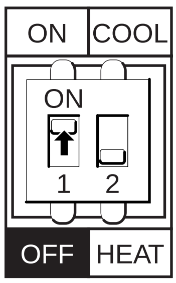
Before switching

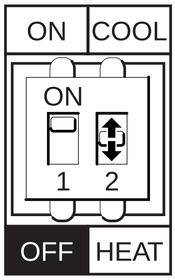
Before moving the switches to emergency operation, make sure to turn OFF the power firstly.

During emergency operation, do not attempt to operate the equipment from the remote controller. The remote controller displays 88 while the emergency operation is active on the indoor unit.

Switching

To switch to forced operating mode, proceed as follows:

Step	Action
1	Turn OFF the power.
2	Switch ON the emergency switch (SS1) on the indoor PCB. 
3	Switch ON the emergency switch on the outdoor PCB.  Switch 2 is not applicable for the c/o units.

Step	Action
4	Switch the emergency switch on the outdoor PCB to the forced mode you prefer.  Switch 2 is not applicable for the c/o units.
5	Turn ON the power.

Before switching back

Before moving the switches back to normal operating mode, make sure to turn OFF the power firstly.

Starting conditions

You can operate the system manually by changing the emergency switch on the indoor and outdoor PCB from “normal” to “emergency”. However, when in emergency operation, the equipment cannot control the temperature.

Make sure to set both indoor and outdoor unit to emergency.

Ending conditions

You can end the emergency operation by changing the emergency switch back to “normal” while the power is OFF.

Emergency operation

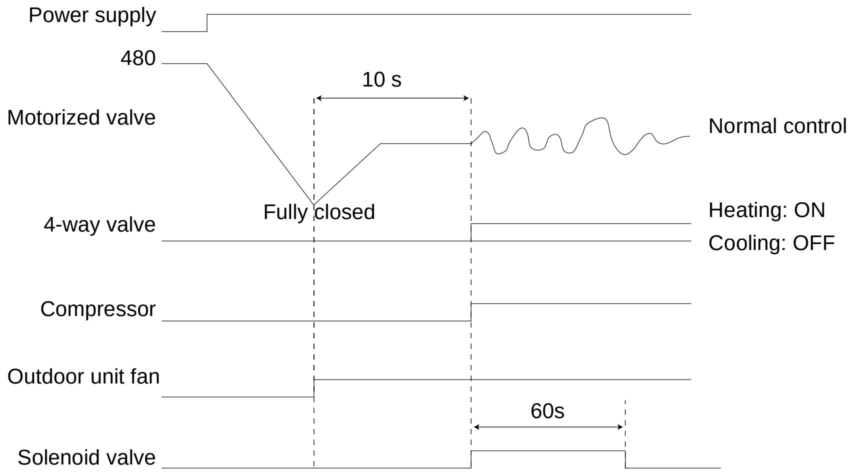
The table below describes what happens when you change the emergency switch to “emergency”.

Changing the emergency switch to “emergency” for the...	Switches ON...
Indoor unit	➤ Indoor fan ➤ Drain pump
Outdoor unit	➤ Compressor ➤ Outdoor fan(s)

Time chart

The time chart below illustrates emergency operation.

- ➤ In cooling, the unit runs for 20 min and then stops for 10 min in order to avoid freeze-up of the indoor coil.
- ➤ During emergency operation, do not attempt to operate the equipment from the remote controller. The remote controller shows 88 while the emergency operation is active on the indoor unit.



Active components

The table below shows when the most important components are active in the different forced operating modes.

Component	Forced cooling	Forced heating	Forced defrosting
Compressor	ON	ON	ON
4-way valve	RYP71-125L: OFF	RYP71-125L: ON	RYP71-125L: OFF
Outdoor unit fan	H fan speed	H fan speed	OFF
Indoor unit fan	H fan speed	H fan speed	H fan speed
Drain pump	ON	OFF	ON

Additional info

To avoid misunderstandings, take the following into account:

- ➤ If the PCB or the motorized valve is malfunctioning, emergency operation cannot be carried out.
- ➤ No signal is transmitted between the indoor and outdoor units and remocon.
- ➤ If a safety device should be activated during emergency operation, all actuators are turned OFF.
- ➤ “Heat” cannot be set for c/o air conditioners.
- ➤ Emergency operation uses (and switches ON) both indoor and outdoor control PCBs. The outdoor control PCB determines the changeover.
- ➤ In heating, defrosting is activated once every hour.

2

1.5 Outdoor Unit Identification Function

Applicable units

The outdoor unit identification function is applicable for the following units:

Model type	Model name
Cassette	FHYCP and FUYP
Corner	FHYKP
Ceiling	FUYP
Wall	FAYP
Duct	FDYP, FHYBP and FDYMP

Purpose

The purpose of the outdoor unit identification function is to enable the indoor unit to automatically determine which operating mode has to be set in function of the outdoor unit type (c/o or h/p).

Operating modes

The possible operating modes are:

Outdoor unit	Operating modes
h/p	➤ Fan ➤ Cooling ➤ Dry keep ➤ Heating
c/o	➤ Fan ➤ Cooling ➤ Dry keep

Used input

The outdoor unit identification function uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Indoor PCB	TC & RC	—
Outdoor PCB	—	TC &RC

TC: Transmission circuit
RC: Receiving circuit

1.6 Thermostat Control

Applicable units

All units

Purpose

The purpose of thermostat control is to control the compressor operation, by sensing the suction air.

Preventing thermostat OFF conditions

The thermostat control prevents the thermostat from turning OFF in the following conditions:

- ➤ Initial operation for the first 2.5 min, or
- ➤ Defrosting, or
- ➤ Forced operating mode.

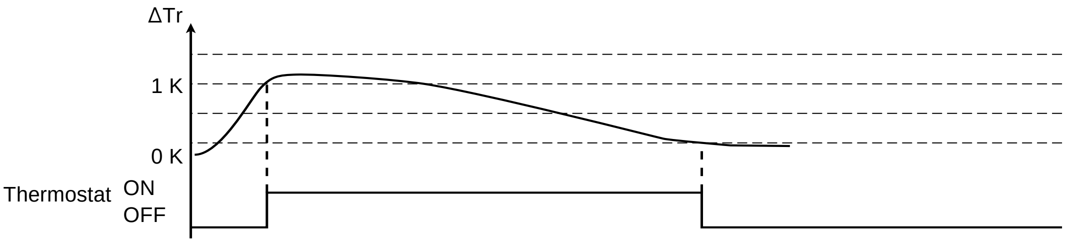
ΔTr

The table below shows how to calculate ΔTr.

In...	ΔTr =	Remark
Cooling	Tr - Ts	➤ Tr = indoor unit suction air temp. ➤ Ts = temp. set by the remote controller
Heating	Ts - Tr	

Time chart

The time chart below illustrates the thermostat control.



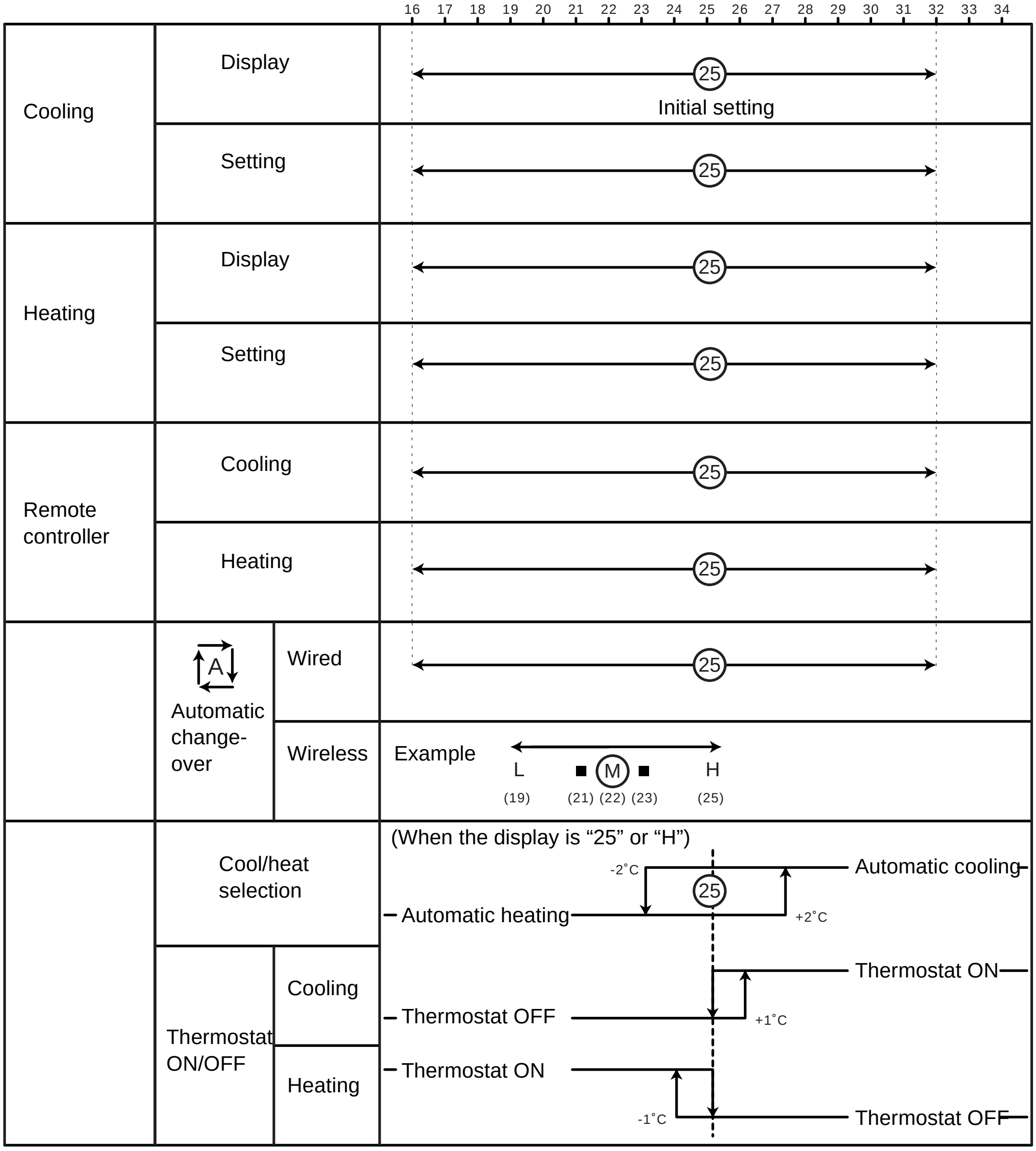
Thermostat

The table below describes when the thermostat turns ON and OFF.

When...	Then the thermostat turns...
➤ ΔTr ≥ 1 K ➤ Guard timer of the compressor has counted down (3 min)	ON
➤ ΔTr ≤ 0 K ➤ Thermostat is ON for min. 2 min	OFF

Preset temp. range

The table below illustrates the preset temperature range.



1.7 Forced Thermostat OFF

Applicable units

All indoor units

Purpose

The outdoor unit independently turns its thermostat OFF by means of control other than thermostat OFF commands from the indoor unit.

Method

The table below contains the different conditions for which the thermostat is turned OFF by the outdoor unit.

Thermostat OFF control	Indicator	Starting conditions	Result	Reset
Freeze-up function: See page 2–29.				
Cooling overload	Outdoor heat exchanger temperature Tc	Tc > 63°C for 90 s continuously (min. 60 - max. 66°C for practice function)	The thermostat is turned OFF. Next start, initial opening E.V.: + 70 pulses (cooling) + 80 pulses (heating)	Remocon OFF
Heating overload (peak cut-off)	Indoor heat exchanger temperature Tc	Tc > 62.5°C for 30 s continuously (min. 59.5 - max. 65.5°C for practice function)		
Discharge pipe high temperature Only for R(Y)P71-250L	Discharge pipe temperature T2	Td > 125°C for 20 s continuously		
Td disconnection Only for R(Y)P71-250L	Discharge pipe thermistor T2	Td is determined to be disconnected from the piping 5 min after the compressor starts. Td < 55°C Td < Ta + 10°C ΔTd ≤ 5 K within 5 min after start	Retry 6 x until final error "F3"	

Remarks

- ➤ In case of O.L. operation, O.L. will be activated +1K next time.
- ➤ In case of H.P. activation, O.L. will be activated -1K next time.

Used input

The forced thermostat OFF control uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor heat exchanger thermistor	—	R2T
Indoor heat exchanger thermistor	R2T	—
Discharge pipe thermistor	—	R3T

Remark

- ➤ In case of twin/triple applications the highest Tc is used.

1.8 HPS and LPS Function

Applicable units

R(Y)P71-125L

Purpose

HPS (High-Pressure Switch)

If the pressure at the discharge side of the compressor becomes abnormally high, the HPS stops the unit automatically in order to prevent it from breaking down.

LPS (Low-Pressure Switch)

If the pressure at the suction side of the compressor becomes abnormally low, the LPS stops the unit automatically in order to prevent it from breaking down.

Method

The table below describes what happens in case of HPS or LPS activation.

<table>
<tr><th>If the... is activated</th><th>Then...</th><th>Remark</th></tr>
<tr><td>HPS</td><td>The compressor stops and stands by for 3 min.</td><td rowspan="2">If this is activated an additional 6 times from the first detection and before it is turned OFF by the remote controller, the operation stops due to malfunction. 20 sec’s are added after each restart.</td></tr>
<tr><td>LPS</td><td>The compressor stops and stands by for 3 min.
However, depending on the operating conditions, the compressor may not turn OFF.</td></tr>
</table>

Used input

The HPS and LPS detection function uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
High-pressure switch	—	X9A
Low-pressure switch	—	X10A

1.9 Simulated Operation Function

Applicable units

- R(Y)P71-125L

Purpose

The purpose of the simulated operation function is to avoid the unit from stopping if the heat exchanger thermistor or air thermistor is malfunctioning.

Method

If the air thermistor (for all models listed) or the heat exchanger thermistor is malfunctioning (out of its normal range), simulated operation is carried out while malfunction is displayed on the remote controller. If the air or heat exchanger thermistor becomes normal again, the simulated operation function is interrupted and the normal operation restarts. The malfunctioning error disappears.

Used input

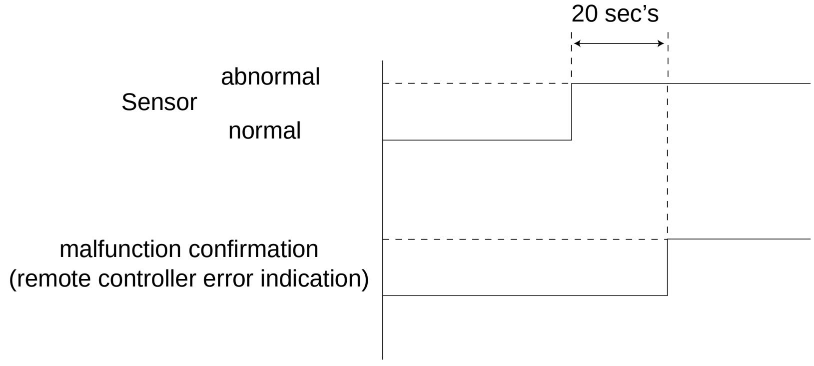
The simulated operation function uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor air thermistor	—	R1T-X4A
Outdoor heat exchanger thermistor	—	R2T-X5A
Indoor air thermistor	R1T-X19A	—
Indoor heat exchanger thermistor	R2T-X18A	—

Parameters

- Check sensor valve every 500 msec's.
- Abnormal values are sensor values out of below range :

Sensor	Lower than…	Higher than…
Indoor coil and air sensor	-23°C	120°C
Outdoor coil and air sensor	-40°C	127°C



1.10 Discharge Pipe Temperature Control

Applicable units

R(Y)P71-125L

Purpose

The purpose of the discharge pipe temperature control is to prevent a discharge pipe temperature that is too high or too low.

Low temp. starting conditions

The table below contains the low temperature conditions to start the discharge pipe temperature control.

Function	Description	Starting conditions	F3-error occurs if the conditions...
Wet operation	Prevents liquid suction to the compressor.	➤ Change in E.V. opening < 50 pulses ➤ Td < Tc + 10°C	Are met for 15 min continuously.
Thermistor out	Detects if the discharge thermistor is not in the correct position.	➤ Td < 55°C ➤ After start-up + 5 min: - ΔTd ≤ 5 K - Td < Ta + 10°C	Are repeated 6 times.

High temp. starting conditions

The table below contains the high temperature conditions to start the discharge pipe temperature control.

Function / description	Starting conditions	F3-error occurs if the conditions...
Detects too high discharge gas temperatures.	Td ≥ 125°C for 20 s continuously	Are repeated 6 times.

Used input

The discharge pipe temperature control uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor discharge thermistor	—	R3T-X6A
Outdoor heat exchanger thermistor	—	R2T-X5A
Indoor heat exchanger thermistor	R2T-X18A	—

1.11 Gas Shortage Function

Purpose

The purpose of the gas shortage function is to detect refrigerant shortage before the unit stops due to a discharge temperature that is too high.

Method

When the thermostat is turned OFF due to a discharge pipe temperature that is too high and the E.V. opening is 450 pulses or more, the gas shortage error is activated. However, operation does not stop due to gas shortage.

To check the gas shortage error (U0), see page 3–62.

Used input

The gas shortage function uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor discharge thermistor	—	R3T-X6A
Outdoor expansion valve	—	Y1E-X24A

1.12 Drain Pump Control

Applicable units

The drain pump control is applicable for the following units:

Model type	Model name
Cassette	FHYCP (standard) and FUYP (standard)
Duct	FHYBP (standard) and FDYP (optional)
Corner	FHYKP (standard)
Ceiling	FHYP (optional)

Purpose

The purpose of the drain pump control is to control the water draining from the drain pan.

Starting conditions

The drain pump control starts the drain pump when one of the following conditions is fulfilled:

- The cooling operation is activated, or
- The level in the drain pan becomes abnormally high, or
- Freeze-up prevention is detected in cooling operation.

Method

The float switch opens because an abnormal drain level is detected in the drain pan.

The table below describes the activation at open float switch.

Situation	Activation at open float switch
Thermostat ON	1. The thermostat is immediately turned OFF. 2. The drain pump continues to operate for minimum 10 min. 3. If the float switch closes again within 80 s, cooling can restart after the 10 min recovery.
Thermostat OFF	1. The thermostat stays forced OFF. 2. The drain pump starts to operate for minimum 10 min. 3. If the float switch closes again within 80 s, cooling can restart after the 10 min recovery.
Float switch opens each time the drain pump stops.	After five retrials the error code " AF " flashes on the remote controller.

Used input

The drain pump control uses the following inputs:

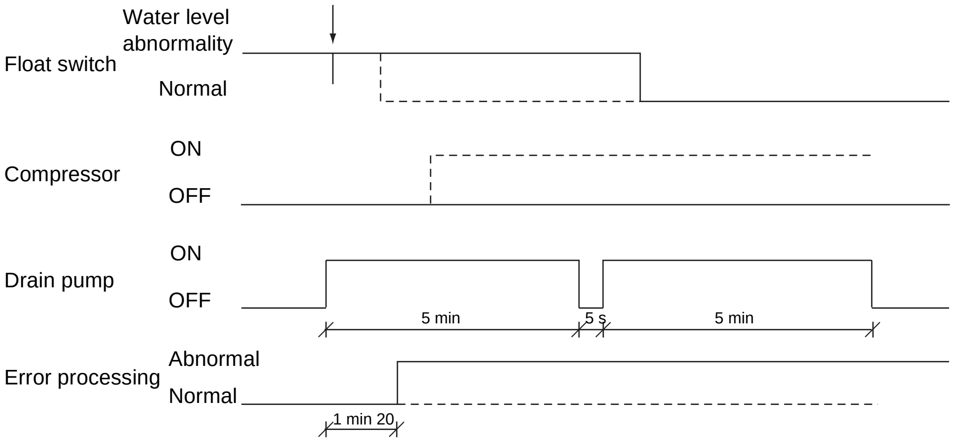
Input	Connection on indoor PCB	Connection on outdoor PCB
Float switch (33H)	X15A	—
Magnetic relay drain pump (RyP)	X25A	—

Detection system

All applicable units use a drain pan water level detection system of the float type.

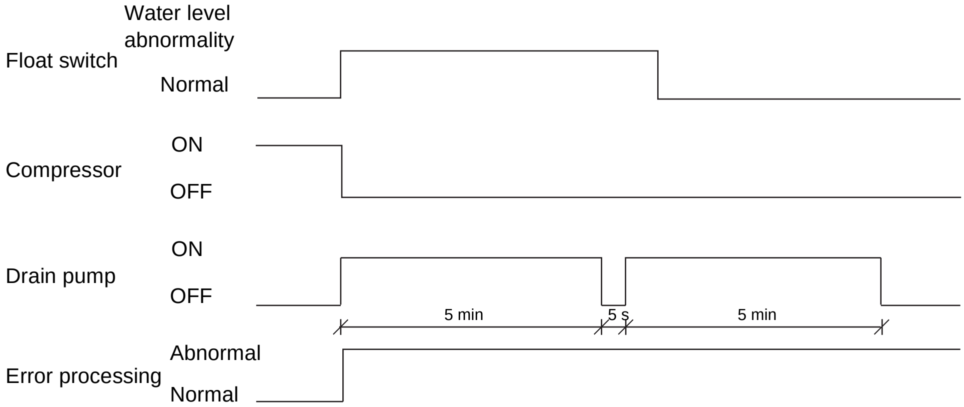
Float type: During start-up

The time chart below illustrates the drain pump control during start-up.



Float type: During operation (compr. ON)

The time chart below illustrates the drain pump control during start-up.



1.13 Fan and Flap Operations

Heating operation The table below contains the fan and flap operations.

Function	In...	Fan	Flap (FHYCP, FHYKP and FHYP)	Flap (FAYP)	Remote controller indication
Hot start after defrost	Swing operation	OFF	Horizontal	Horizontal	Swing
	Airflow direction setting				Set position
Defrost	Swing operation				Swing
	Airflow direction setting				Set position
Thermostat OFF	Swing operation	LL			Swing
	Airflow direction setting				Set position
Hot start after thermostat OFF (cold air prevention)	Swing operation				Swing
	Airflow direction setting				Set position
Stop (error)	Swing operation	OFF		Fully closed (horizontal)	—
	Airflow direction setting			Fully closed	
Overload thermostat OFF	Swing operation	LL		Horizontal	Swing
	Airflow direction setting				Set position

Cooling operation The table below contains the fan and flap operations.

Function	In...	Fan	Flap (FHYCP, FHYKP and FHYP)	Flap (FAYP)	Remote controller indication
Thermostat ON (microcomputer controlled dry keep mode)	Swing operation	L	Swing	Swing	Swing
	Airflow direction setting		Setting	Setting	Set position
Thermostat OFF (microcomputer controlled dry keep mode)	Swing operation	OFF	Horizontal	Horizontal	Swing
	Airflow direction setting		Setting	Setting	Set position
Thermostat OFF (cooling)	Swing operation	Setting	Horizontal	Horizontal	Swing
	Airflow direction setting		Setting	Setting	Set position
Stop (error)	Swing operation	OFF	Horizontal	Downward (horizontal)	—
	Airflow direction setting		Setting	Downward	
Freeze-up prevention in microcomputer controlled dry keep mode (including cooling operation)	Swing operation	L	Horizontal	Horizontal	Swing
	Airflow direction setting		Setting	Setting	Set position

1.14 Auto-Restart Function

Applicable units

All units

Purpose

The purpose of the auto-restart function is to resume the same operating mode after the power was turned OFF as when the unit was operating.

Turning OFF power

When you have to turn OFF the power supply in order to carry out maintenance, make sure to turn the remote controller’s ON/OFF switch OFF firstly.

If you turn OFF the power supply while the remote controller’s ON/OFF switch is still ON, the “auto-restart function” automatically starts the indoor fan immediately or the outdoor unit fan starts automatically 3 min after the power supply is turned back ON.

1.15 Using Conditions for Remote Controller Thermostat

Applicable units

All units

Wired remote controllers

The remote controller thermostat is only available in wired remote controls.

Conditions in which the rem. contr. thermostat is not used

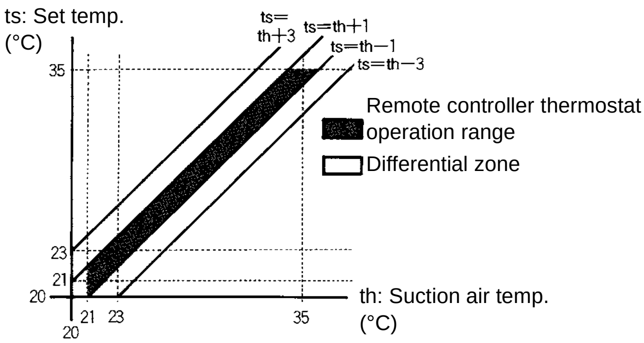
Even when the “use remote controller thermostat” is selected in service mode, the remote controller thermostat is not always used.

The table below contains the conditions in which the remote controller thermostat is not used.

Condition	The remote controller thermostat is not used when...	Except...
1	The remote controller thermostat malfunctions.	—
2	Group control is used	—
3	The set temp./air suction temp. combination is out of range. See further in this section.	When the automatic operation is selected. If so, the remote controller can be used.

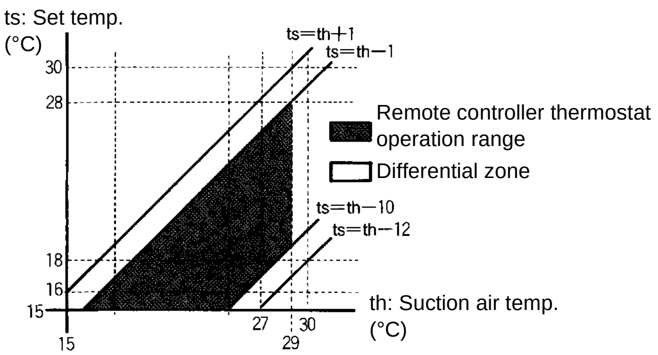
Cooling

The diagram below shows the operation range of the set temperature/air suction temperature combination.



Heating

The diagram below shows the operation range of the set temperature/air suction temperature combination.



1.16 Overcurrent Protection Function

Purpose

The purpose of the “Overcurrent Protection Function” is to protect the unit against excessive current drains.

Method

If the Current Transducer detects an overcurrent, the unit will trip on E6 error after 4 times detection.

Unit	Compressor	Current (A)
RYP71L7V1	JT90FA-V1N	25.3
RYP71L7W1	JT90FA-YE	11.5
RYP100L7V1	JT125FA-V1N	38
RYP100L7W1	JT125FA-YE	11.5
RYP125L7W1	JT160FA-YE	15

“J2” will be displayed if the overcurrent detection sensor has a malfunction.

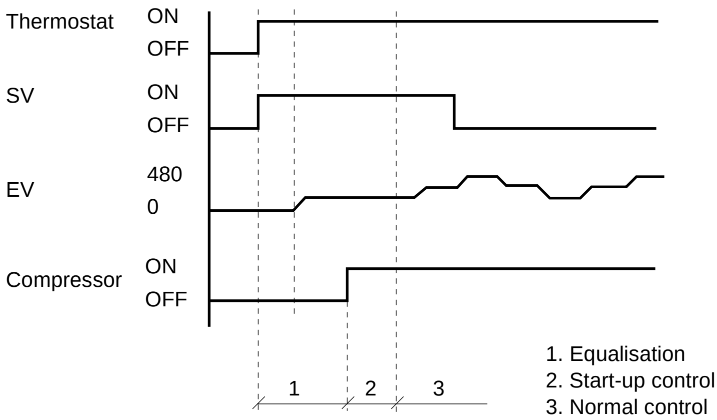
1.17 Expansion Valve Control

Applicable units R(Y)P71-125L

Start-up control

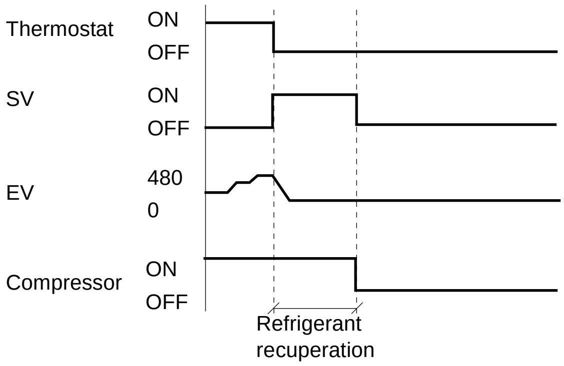
When the compressor starts, a pump down operation is carried out in order to avoid liquid pumping. The liquid receiver fills up and a minimum refrigerant amount is passed to the compressor. This minimum refrigerant amount is required to avoid discharge pipe temperatures that are too high.

The opening degree of the expansion valve depends on the start-up number. If the first start-up fails, the opening degree of the following start-up is adapted by the self-learning function.



Pump down residual operation

The unit conducts a pump down residual operation after each compressor stop command. The purpose of this function is to collect the refrigerant in the liquid receiver in order to prevent refrigerant from remaining in the indoor heat exchanger.



Initial opening degree

The initial opening degree of the outdoor expansion valve depends on the indoor and outdoor air temperature. The calculation of the opening degree is made at a thermostat ON and at the end of a defrosting cycle.

Opening degree: Self-learning function

When the system was stopped due to abnormal suction or discharge pressure, or due to a discharge temperature that is too high, the expansion valve control tries to avoid the same breakdown. The expansion valve increases the previous opening degree with 70 (in cooling mode) or 80 (in heating mode) pulses at the next start-up.

There are maximum five start-up attempts. When the compressor stops again after the fifth start-up, something is wrong with the unit and a unit check is necessary. The relevant error code appears on the remote controller.

Normal control

The optimum discharge pipe temperature is calculated based on:

- ➤ Indoor and outdoor heat exchanger temperature
- ➤ Actual discharge pipe temperature
- ➤ Outdoor ambient temperature.

The expansion valve is controlled in order for the discharge temperature to approach the optimum temperature.

Used input

The motor operated valve control uses the following inputs:

Input	**Connection on indoor PCB**	**Connection on outdoor PCB**
Outdoor thermistor	—	R1T
Outdoor heat exchanger thermistor	—	R2T
Discharge pipe thermistor	—	R3T
Indoor heat exchanger thermistor	R2T	—

2

2 Overview of the cooling mode functions

2.1 What Is in This Chapter?

Introduction

This chapter contains information on the functions used to control the system when the system is in cooling mode. Understanding these functions is vital when diagnosing a malfunction that is related to the functional control.

Overview

This chapter contains the following topics:

2.2 Dry Keep Mode

Applicable units

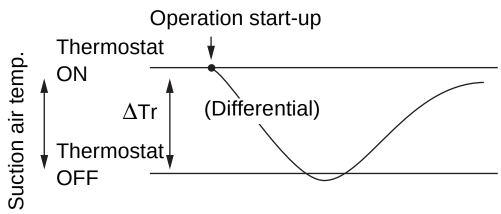
All units

Purpose

The purpose of the dry keep mode is to remove humidity while maintaining the room temperature.

Method

The points of thermostat ON or OFF are determined according to the suction air temperature at start-up of the unit operation. The set temperature and flow rate are not displayed on the remote controller.



Thermostat

When dry keep is selected on the remote controller, the unit detects the ambient temperature. This ambient temperature is then the setpoint. The thermostat is turned OFF when the air return temperature drops below this setpoint. The thermostat is turned ON in one of the following conditions:

Suction air temperature	Thermostat ON	ΔTr
Tr ≥ 24°C	Tr	1.5°C
18°C ≤ Tr < 24°C	Tr	1.0°C
Tr < 18°C	18°C	

Operation condition

The table below describes the operation condition.

Compressor condition	ON	OFF
Fan speed	L	OFF
Flap angle	Set angle	PoO
Air flow direction set with remote controller		Setting indication

Used input

The dry keep function uses the following inputs:

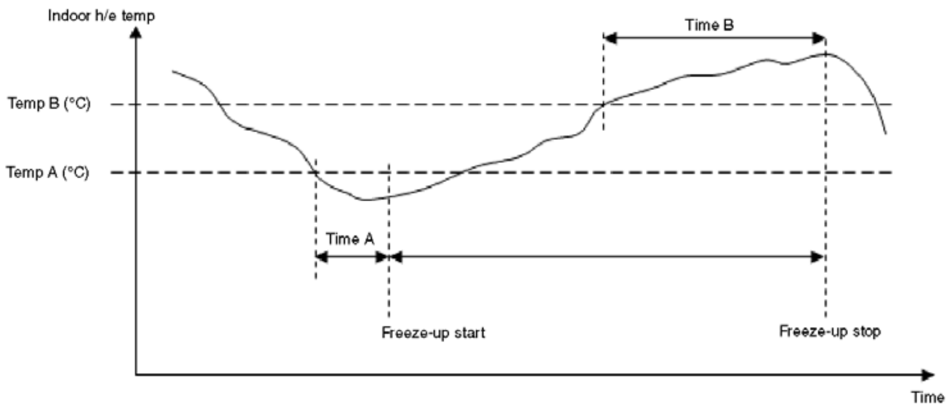
Input	Connection on indoor PCB	Connection on outdoor PCB
indoor air temperature R1T	X19A	—

2.3 Freeze-Up Function

Starting conditions

In order to avoid formation of ice on the indoor heat exchanger in cooling and dry mode, the system automatically starts up a freeze-up cycle when some specific conditions are fulfilled.

Graph



Field settings

The table below contains the values of A, B, C, D, E and F in function of the DIP switch settings on the outdoor PCB.

Position of DIP switch		Activation decided by…	Trigger conditions	Remarks
DSW 2-3	DSW 2-4			
OFF	OFF	Outdoor or Indoor	Conditions 1	Factory set conditions.
ON	(*)	Indoor only	Conditions 2	For use with EKRPER
OFF	ON	Outdoor only	Conditions 3	Increased capacity for technical room applications. Only to be used in low latent heat applications (applications with low relative humidity)

(*) Position of DSW2-4 irrelevant

Conditions 1

Factory settings

DSW 2-3	DSW 2-4	Start Conditions (OR)	Stop Conditions
OFF	OFF	➤ Freeze-up start signal received from indoor unit· ➤ Te ≤ -1°C for 25 min accumulated compressor operation time· ➤ Te ≤ A°C for 1 minute continuous after = 8 minutes continuous compressor operation time· ➤ Te ≤ -1°C for 1 minute after ≥ 20 minutes continuous compressor operation time	➤ Te > 10°C for 10 minutes continuously

2

Conditions 2a

In case indoor unit is connected:

DSW 2-3	DSW 2-4	Start Conditions (OR)	Stop Conditions
ON	(*)	➤ Te ≤ -1°C for 40 minutes accumulated compressor operation time· ➤ Te ≤ A°C for 1 minute continuous after ≥ 8 minutes continuous compressor operation time	➤ Te > 7°C for 10 minutes continuously

(*) Position of DSW2-4 irrelevant

Conditions 2b

In case option box EKRPER is connected:

DSW 2-3	DSW 2-4	Start Conditions (OR)	Stop Conditions
ON	(*)	➤ Freeze-up start signal received from EKRPER	➤ Freeze-up stop signal received from EKRPER

(*) Position of DSW2-4 irrelevant
See installation manual of EKRPER for more details.

Conditions 3

Increased capacity in case of low latent heat applications

DSW 2-3	DSW 2-4	Start Conditions (OR)	Stop Conditions
OFF	ON	➤ Te ≤ -1°C for 25 min accumulated compressor operation time· ➤ Te ≤ A°C for 1 minute continuous after = 8 minutes continuous compressor operation time· ➤ Te ≤ -1°C for 1 minute after ≥ 20 minutes continuous compressor operation time	➤ Te > 7°C for 3 minutes continuously

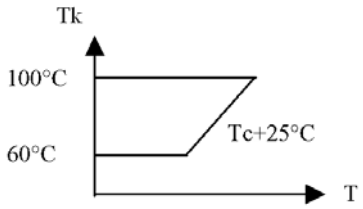
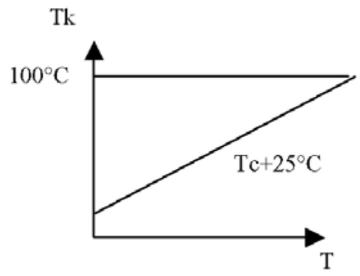
Parameters

The parameter value "A" mentioned in above conditions is decided depending on the type of indoor model as follows:

Indoor unit	Value "A"
FAYP	-1°C
FHYP	-3°C
All other indoor models	-5°C

Target discharge pipe temperature control (Tk)

When changing DS2-4 to ON, also the target discharge pipe temperature control (Tk control) is changed

DS2-4 OFF (Factory set)	DS2-3 ON (Field set)
	When Outdoor Ambient > 12°C : Factory set condition is applicable (left figure). When Outdoor Ambient ≤ 12°C : 

By allowing a lower discharge pipe temperature, the expansion valve closing will be limited, hence avoiding a drastic drop in Low Pressure.

Important remark when using "Condition 3"

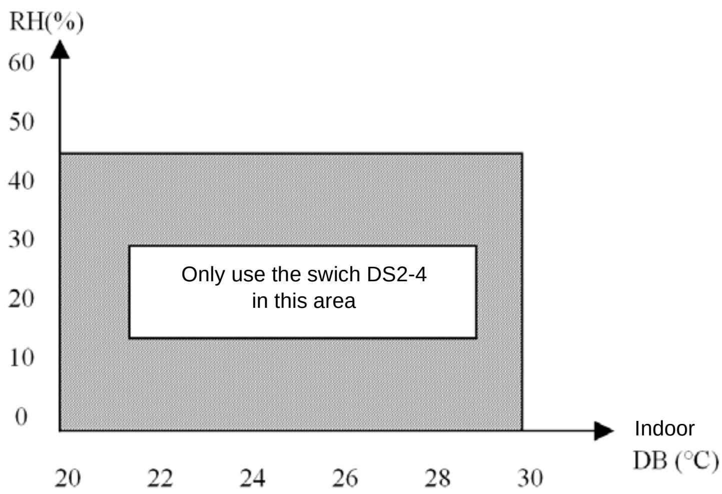
By changing DS2-4 to ON the integrated capacity increases when the outdoor temperature drops below 21°C as indicated in the table below :

	DIP switch OFF (factory setting)	**DIP switch ON**
Capacity at low temperature	100 % (*)	150 ~ 200 %

(*) Relative comparison to indicate a capacity increase of 50~100 % with dip-switch setting ON.

The integrated capacity increases due to the reduction in stand still time after a freeze-up activation.

Careful attention should be taken related to the internal humidity when selecting "conditions 3". Because of the reduced freeze-up reset conditions an increased risk of frost formation on the indoor coil or water blowing out of the indoor unit is existing when the indoor humidity exceeds the limits specified below :



Caution

- Final capacity result when using DS2-4 will depend on the total condition of the installation site.
- Be sure to take into account the restrictions towards internal humidity when using DS2-4
- Possibility of using DS2-4 should be evaluated by a professional responsible installer for each installation site.
- Do not set DS2-4 in combination with the option EKRPER.

2.4 Outdoor Fan Starting Control in Cooling or Dry Keep Mode

Applicable units

➤ R(Y)P71-125L

Purpose

The purpose is to avoid that the discharge pressure would start to rise, and stop the unit.

Method: R(Y)P71-125L

When the compressor starts, the fan keeps running for 3 min at starting fan speed. The starting fan speed depends on the ambient temperature. The different fan speeds for the according outdoor air temperatures are shown in the table below.

Operating mode	Outdoor air temp. Ta	Starting fan speed	See further in this section...
Cooling mode, dry keep mode	area 1: Ta < 3°C		Fan speed for Ta < 3°C: R(Y)P71-125L
	area 2: 3°C ≤ Ta < 10°C	L speed	Different fan speeds
	area 3: 10°C ≤ Ta < 23°C	L speed	
	area 4: Ta ≥ 23°C	HH speed	

(*) When cutting jumper J3, the 20 second timer is changed to 5 seconds

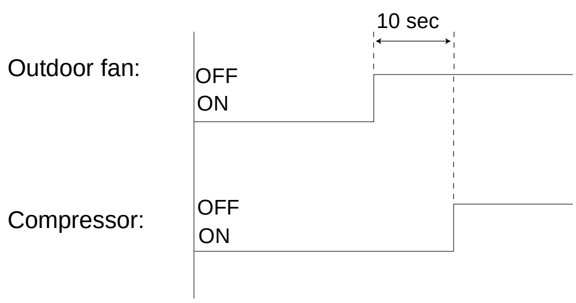
Fan speed for Ta < 3°C: R(Y)P71-125L

This fan starting control is made to be able to build up the compression ratio as soon as possible because this has two advantages:

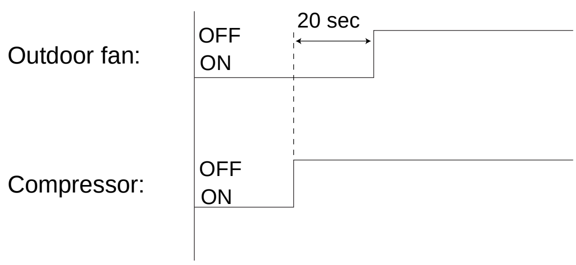
➤ It is better for the compressor to increase the compression ratio because the lubrication must be done by the pressure difference between low and high pressure.

➤ The pressure difference is necessary for the h/p models to keep the 4-way valve in its correct position.

Area 2~4:



Area 1:



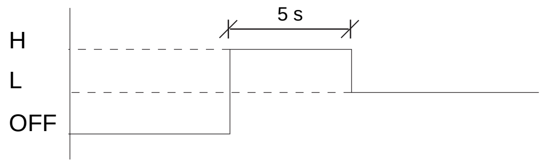
Different fan speeds

The table below explains the meaning of L, H and HH fan speed.

Fan operation	71 and 100	125	
	1 fan	Upper fan (MF1)	Lower fan (MF2)
OFF	OFF	OFF	OFF
L	L	L	L
H	H	H	H
HH	HH	HH	HH

L-tap starting compensation

When the outdoor fan is operated from OFF to L-tap, the fan motor does not turn, because of lack of starting torque. To avoid this, the fan motor operates at H-tap for the first 5 s after start-up, before changing to L-tap.



Used input

The fan starting control in cooling or dry keep mode uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor air temperature R1T	—	X4A

2.5 Normal Outdoor Fan Control in Cooling Operation

Applicable units

R(Y)P71-125L

Purpose

The purpose of this normal outdoor fan control is to ensure a correct discharge pressure in function of the outdoor air and indoor room temperature.

Method

The table below shows in which conditions the outdoor fan works at low or high speed.

Condition	Fan Speed
Ta < -7°C	OFF
Ta < 41.7 - 0.84 x Tr	L speed
Ta > 45.7 - 0.84 x Tr	H speed
Tc > 58°C	HH speed

Ta = ambient temperature = outdoor air temperature; Tr = room suction temperature; Tc = condensing temperature (overload control)

Different fan speeds

The table below explains the meaning of L, H and HH fan speed.

Fan operation	71	100 and 125		200 and 250	
	1 fan	Upper fan (MF1)	Lower fan (MF2)	Fan 1	Fan 2
OFF	OFF	OFF	OFF	OFF	OFF
L	L	L	L	H	OFF
H	H	H	H	H	H
HH	HH	HH	HH	H	H

Used input

The normal outdoor fan control during cooling operation uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Indoor room temperature R1T	X19A	—
Outdoor air temperature R1T	—	X4A

Low outside temperature control (Year round cooling)

The purpose of this control is to prevent freezing of the indoor heat exchanger due to a low pressure drop by reducing the air flow volume of the outdoor unit fan.

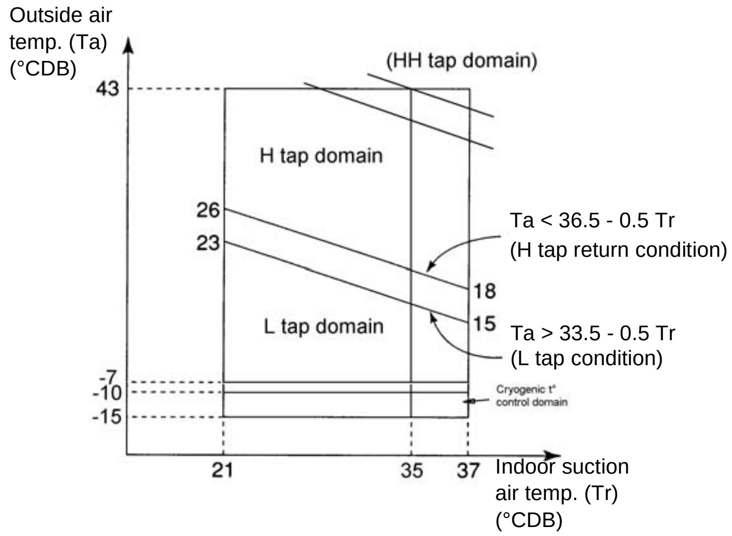
The control is activated when the outdoor temperature drops below (41.7 - 0.84 x Tr).
At this temperature, the outdoor fan speed switches to L-tap.

The differential for the return is 4°K.

The control is not activated during start-up control.

Fan speed control graph

The graph below shows the relation between inside and outside temperature and the fan speed:.

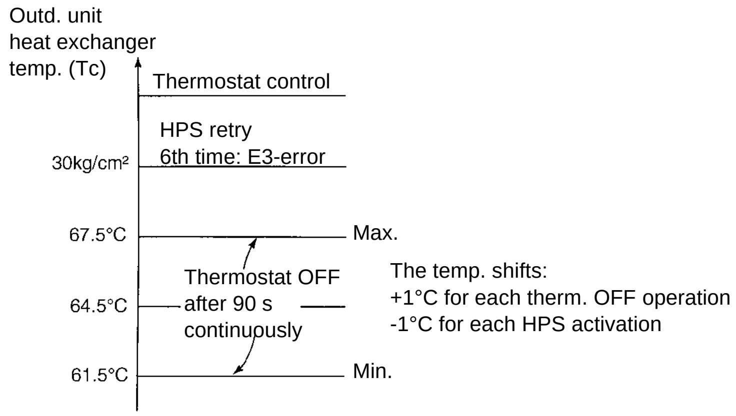


2.6 High Pressure Protection Control in Cooling Operation

Applicable units R(Y)P71-125L

Purpose The purpose of the high pressure protection is to prevent a shutdown due to an error.

Method The thermostat turns OFF immediately before HPS activation according to the outdoor heat exchanger temperature (Tc).



2.7 Condensation Avoidance Control

Applicable units

FHYP

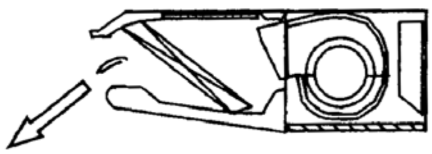
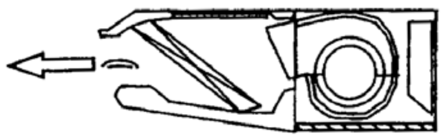
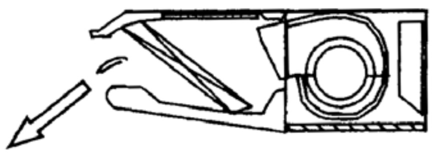
Operating modes

Regardless of whether the thermostat is ON or OFF, the condensation avoidance control can function in the following operating modes:

- ➤ Cooling (automatic), or
- ➤ Dry keep.

Method

To avoid condensation on the swing flap, the condensation avoidance control is activated:

Stage	Description
1	The fan operates in cooling mode with the blade in downward position (set on the remote controller). 
2	After 30 min, the blade moves to a horizontal position. 
3	After 1 h operation in horizontal position, the blade moves back to its downward position for 30 min. 
4	The unit operation is reset by: ➤ Changing the operating mode into “heating” or “fan”, or ➤ Changing the air flow direction, or ➤ Turning the unit operation ON or OFF.

3 Overview of the heating mode functions

3.1 What Is in This Chapter?

Introduction

This chapter contains information on the functions used to control the system during heating mode. Understanding these functions is vital when diagnosing a malfunction that is related to the functional control. This chapter is only applicable to h/p units.

Overview

This chapter contains the following topics:

3.2 Defrost Control

Applicable units

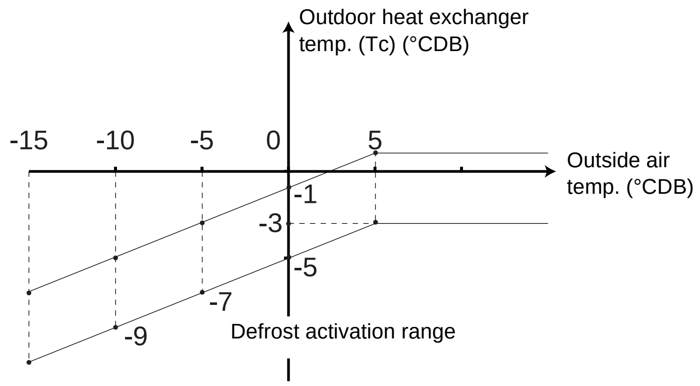
- ➤ RYP71-125L

Purpose

The purpose of the defrost control is to prevent frost on the outdoor heat exchanger coil. This frost forms when the unit is in heating position.

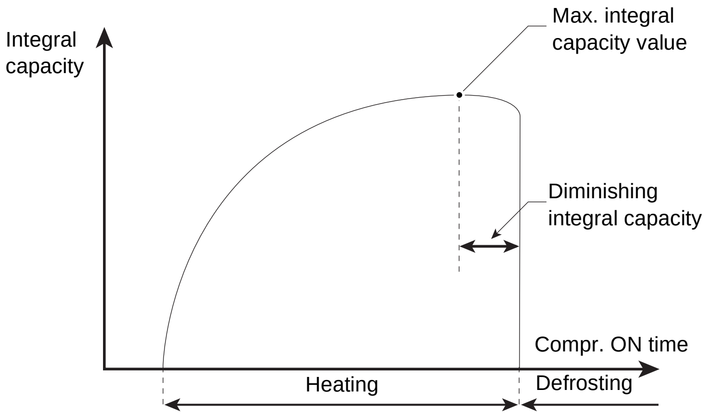
Starting conditions: RYP71-125L

The defrosting starts when either condition 1 or 2 has been realized.

<table>
<tr><th>Condition 1</th><th>Condition 2</th></tr>
<tr><td colspan="2">The compressor has been running for a total of 25 min accumulated since the start of heating operation or since the end of the previous defrosting.</td></tr>
<tr><td colspan="2">➤ Outdoor heat exchanger temp. ≤ -3°C, and
➤ Outdoor heat exchanger temp. ≤ 0.4 x Ta - 5°C

</td></tr>
<tr><td>➤ Compressor ON ≥ 5 min continuously, and integral heating capacity diminishes (see further in this section), or
➤ Ta > -5°C for 3 h accumulated (if DS1-3 is ON, 40 min), or
➤ Ta ≤ -5°C for 6 h accumulated</td><td>Above condition for 10 min accumulated.</td></tr>
<tr><td>Outdoor fan is ON (not in O.L. control)</td><td>Outdoor fan is OFF (O.L. control)</td></tr>
</table>

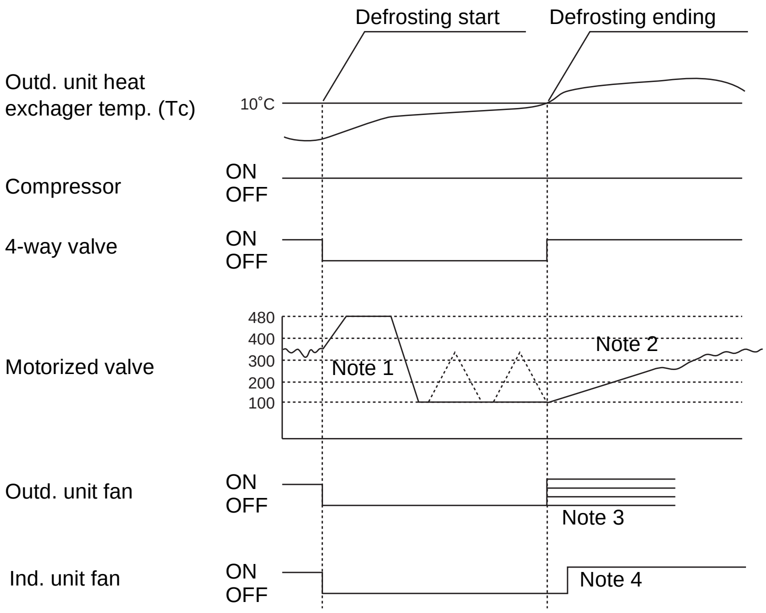
Heating integral capacity

The integral heating capacity is calculated by using the indoor unit data (R2T - R1T) divided by the compressor running time.



Defrost control RYP71-125L

The illustration below shows the defrost control.



Note	Control and time	Description
1	Motorized valve control during defrost operation	After a defrost activation, the defrost motorized valve is at 480 pulses for a certain amount of time, and is then closed gradually to 100 pulses. Only when the discharge pipe temperature is high during defrost, the motorized valve opens at intervals.
2	Motorized valve control after defrost operation	The motorized valve is controlled to an optimum opening and the most suitable operating speed, according to the operating conditions at defrost activation.
3	Outdoor unit fan after defrost operation	The fan operates at optimum fan tap, according to the operating conditions at defrost activation.

Note	Control and time	Description
4	Hot start after defrost	The unit remains in the hot start standby (indoor unit fan OFF) mode for: ➤ 40 s after defrost ending, or ➤ Until the indoor heat exchanger temperature increases.

Defrost ending RYP71-125L

The defrost operation ends:

➤ After 10 min, or

➤ As soon as one of the following conditions is met after 1 min or more:
- Outdoor heat exchanger temp. ≥ 10°C
- Discharge pipe temp. > 120°C.

Hot start after defrosting

The hot start function is activated:

➤ 40 s after the defrosting ending, or

➤ When Tc > 34°C (indoor heat exchanger temperature).

Used input

The defrost control uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor thermistor	—	R1T
Outdoor heat exchanger thermistor	—	R2T
Discharge pipe thermistor	—	R3T
Defrosting start temperature changeover switch	—	DS1-2
Defrosting forced time changeover switch	—	DS2-1

3.3 Draft Avoidance Control 1

Applicable units

The draft avoidance control 1 is applicable for the following units:

Model type	Model name
Cassette	FHYCP and FUYP
Corner	FHYKP
Ceiling	FUYP
Wall	FAYP

Purpose

The purpose of the draft avoidance control 1 is to avoid draft, which is very uncomfortable for the end users.

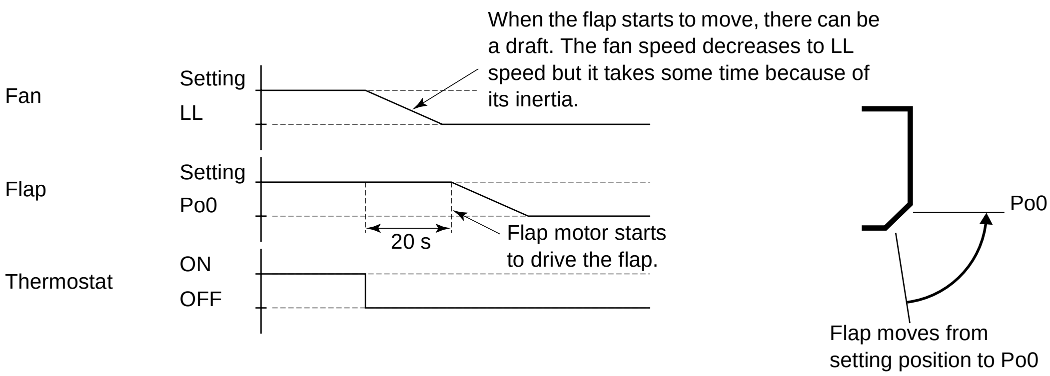
Method

The draft avoidance control 1 delays the moving of the flap setting to the Po0 position (= upper) for a certain amount of time in the following conditions:

- ➤ In heating mode and thermostat OFF, or
- ➤ In defrosting.

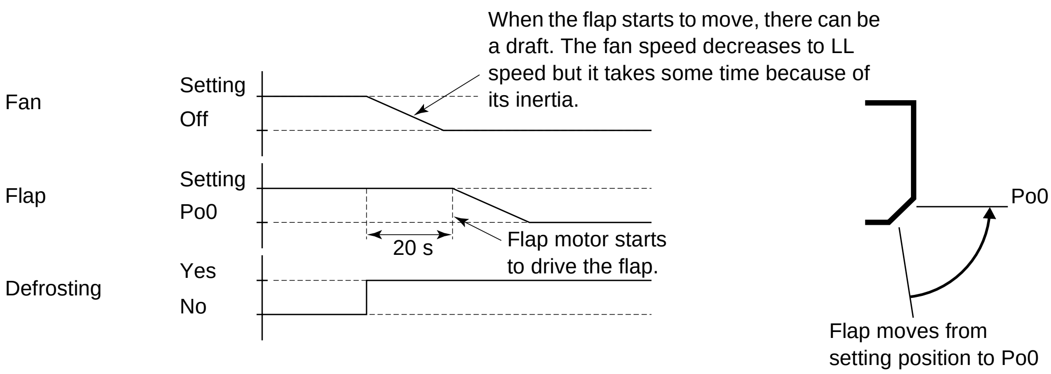
Heating mode and thermostat OFF

The time chart below illustrates the draft avoidance control 1 in heating mode and thermostat OFF.



Defrosting

The time chart below illustrates the draft avoidance control 1 in defrosting.



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Used inputs

The draft avoidance control 1 uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Limit switch for flap	33S	—
No. of fan turns	X26A	—
Outdoor heat exchanger thermistor (start and end defrosting)	—	R2T

3.4 Draft Avoidance Control 2

Applicable units

The draft avoidance control 2 is applicable for the following units:

Model type	Model name
Cassette	FHYCP and FUYP
Corner	FHYKP
Ceiling	FUYP
Wall	FAYP

Purpose

The purpose of the draft avoidance control 2 is to avoid draft when the flap is moving.

Starting conditions

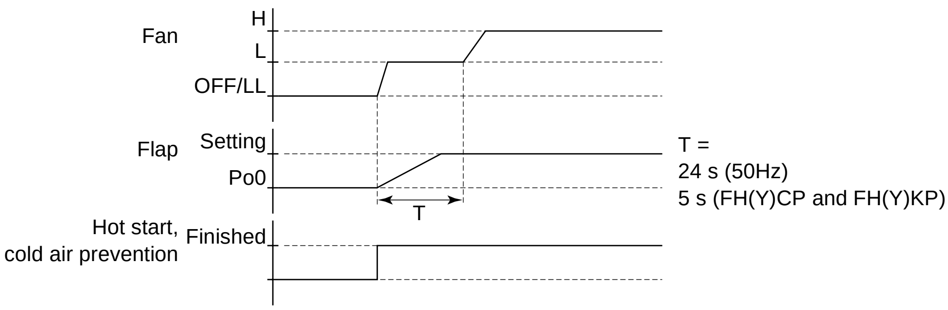
The draft avoidance control 2 is activated when:

➤ Hot start is finished, or

➤ Cold air prevention control is finished.

Time chart

If the fan speed is set to “H”, the fan turns at low speed for a certain amount of time.



Used input

Draft avoidance control 2 uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Limit switch for flap	33S	—
No. of fan turns	X26A	—

3.5 4-way Valve Control

Applicable units

RYP71-125L

Purpose

The purpose of the 4-way valve control is to control how the superheated refrigerant passes through the 4-way valve. The 4-way valve control carries out the changeover switching of the 4-way valve. This changeover switching is only carried out during operation, because pressure difference is required to move the internal cylinder.

When...	Then the 4-way valve connects the outlet of the compressor with...
Cooling	Outdoor heat exchanger.
Heating	Indoor heat exchanger.

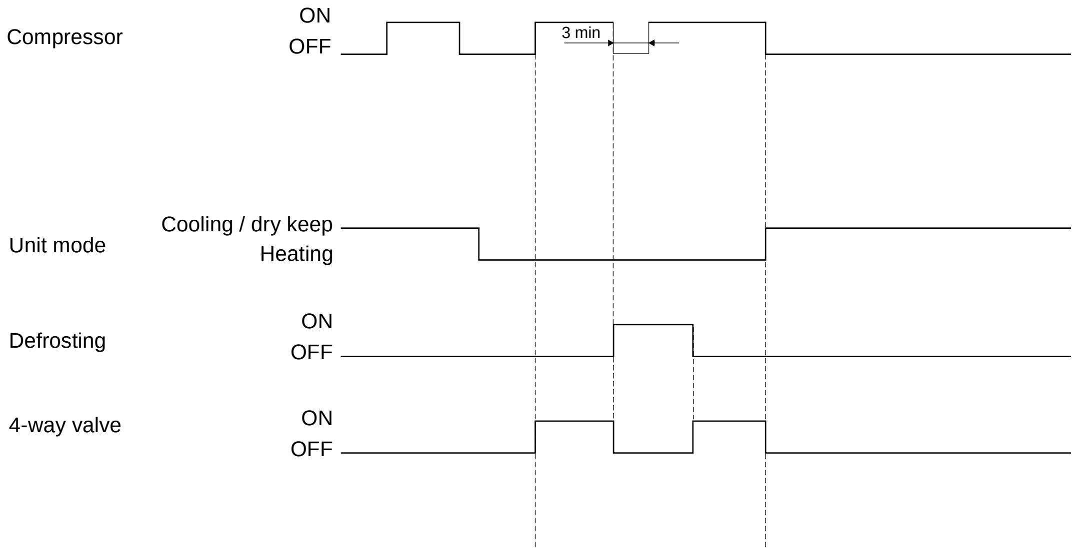
Method

The table below describes the 4-way valve control operation.

In...	The 4-way valve is...
Heating, except for defrosting	ON
➤ Cooling ➤ Dry keep ➤ Defrosting	OFF

Time chart

The time chart below illustrates the 4-way valve control.



Used input

The 4-way valve control uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Indoor air temperature R1T (auto changeover)	X19A	—
Outdoor heat exchanger temperature R2T (defrost)	—	X5A

3.6 Starting Outdoor Fan Control in Heating Mode

Applicable units

RYP71-125L

Purpose

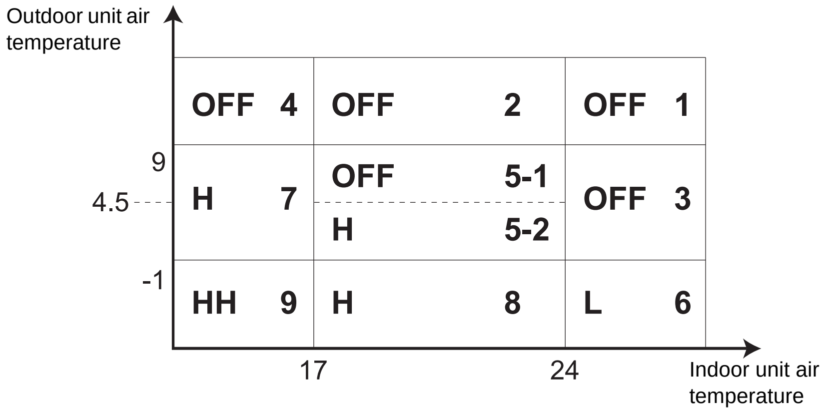
The purpose of the starting outdoor fan control is to control the fan speed in function of the indoor and outdoor unit air temperature.

Method

The illustration below shows the fan starting control in heating mode.

- ➤ LPS is not detected for 3 min after start-up.
- ➤ The starting fan speed lasts 5 min. The fan speed stays at H for the first 5 s if it is switched from OFF to L.

The fan operating areas 1 ~ 9 are indicated.



Different fan speeds

The table below explains the meaning of L, H and HH fan speed.

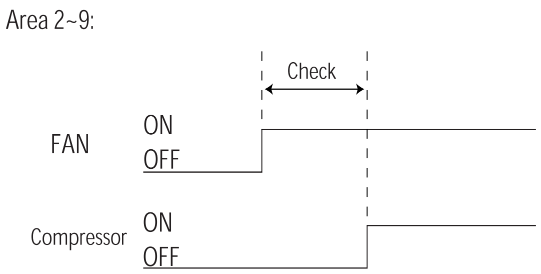
Fan operation	71 and 100	125	
	1 fan	Upper fan (MF1)	Lower fan (MF2)
OFF	OFF	OFF	OFF
L	L	L	L
H	H	H	H
HH	HH	HH	HH

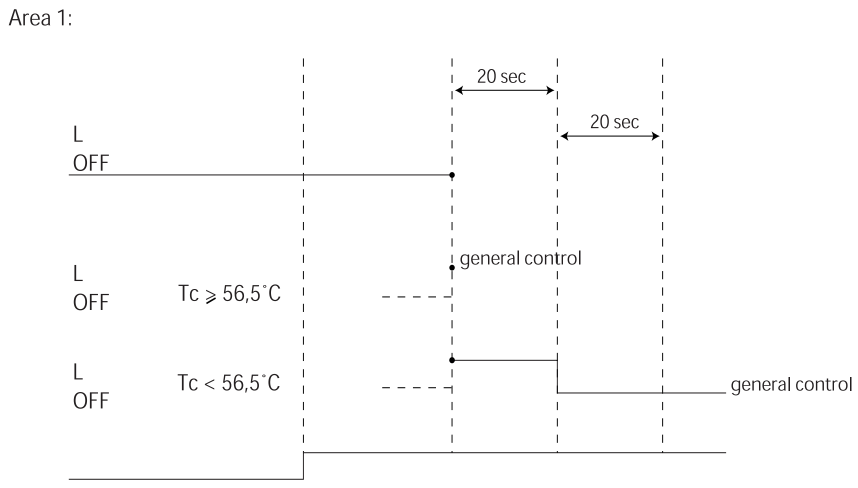
Used input

The outdoor fan starting control in heating mode uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor thermistor	—	R1T
Suction thermistor	R1T	—
Outdoor coil thermistor	—	R2T

Time charts


Area 2~9:
Check
FAN
ON
OFF
Compressor
ON
OFF


Area 1:
20 sec
20 sec
L
OFF
general control
L
OFF
Tc ⩾ 56,5˚C
L
OFF
Tc < 56,5˚C
general control

3.7 Normal Outdoor Fan Control in Heating Mode

Applicable units

RYP71-125L

Purpose

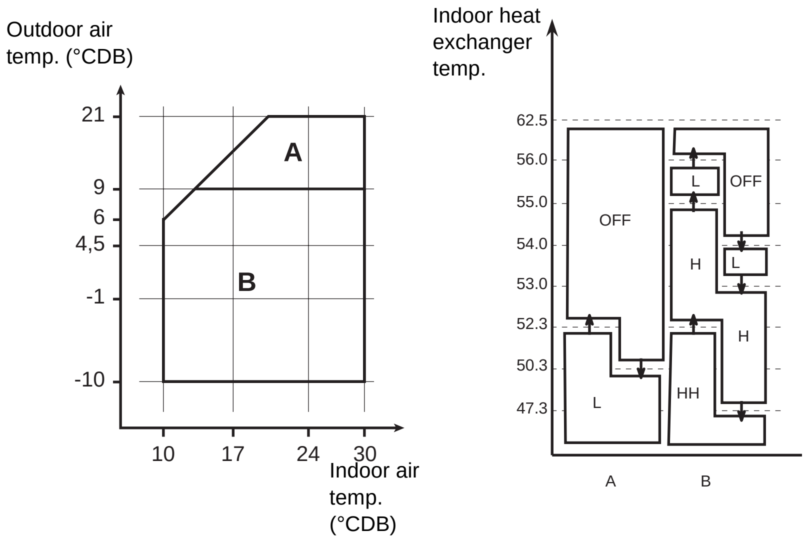
The purpose of the normal outdoor fan control is to:

- ➤ Reduce the chance of overload during high ambient temperature.
- ➤ Reduce the chance of icing up.

Method

Normal fan control operation is done after 5 min of starting fan control operation.

The operation range is divided into three areas (A, B and C).



Example

For area A, the fans go:

- ➤ From L speed to OFF at 52.3°C
- ➤ From OFF to L speed at 50.3°C.

2

Different fan speeds

The table below explains the meaning of L, H and HH fan speed.ì

Fan operation	71 and 100	125	
	1 fan	Upper fan (MF1)	Lower fan (MF2)
OFF	OFF	OFF	OFF
L	L	L	L
H	H	H	H
HH	HH	HH	HH

Used input

The normal outdoor fan control during heating operation uses the following inputs:

Input	Connection on indoor PCB	Connection on outdoor PCB
Outdoor thermistor	—	R1T
Suction thermistor	R1T	—
Indoor heat exchanger thermistor	R2T	—

Part 3
Troubleshooting

What is in this part?

This part contains the following chapters:

3

1 Troubleshooting

1.1 What Is in This Chapter?

Introduction

When a problem occurs, you have to check all possible malfunctions. This chapter gives a general idea of where to look for malfunctions.

Not all repair procedures are described. Some procedures are considered common practice.

Overview

This chapter contains the following topics:

1.2 Overview of General Problems

Introduction

The general problems are:

- None of the indoor units operates
- Equipment operates but stops sometimes
- Some indoor units do not operate (twin / triple)
- Equipment operates but is not able to cool
- Abnormal operating noise and vibrations
- Equipment does not operate (operation light OFF)
- Poor cooling or heating
- Operation stops suddenly (operation light flashes)
- Abnormal functioning.

None of the indoor units operates

To troubleshoot, check the following:

- Make sure the rated voltage is supplied.
- Make sure the indoor unit type is compatible with the outdoor unit.
- Troubleshoot with the indoor unit LEDs.
- Make sure the address for the remote controller and indoor unit are set correctly. See page 4–5.

Equipment operates but stops sometimes

To troubleshoot, check the following:

- A power failure of 2 to 10 sine wave cycles can stop air conditioner operation.
- Cooling operation cannot be used when the outside temperature is below 0°C.
- Troubleshoot with the indoor unit LEDs. See page 3–15.

Some indoor units do not operate (twin / triple)

To troubleshoot, check the following:

- Make sure the indoor unit type is compatible with the outdoor unit.
- Troubleshoot with the indoor unit LEDs. See page 3–15.

Equipment operates but is not able to cool

To troubleshoot, check the following:

- Make sure the thermistor has not disconnected from the pipe holder.
- Troubleshoot with the indoor unit LEDs. See page 3–15.
- Check for gas shortage. See page 3–62.

Abnormal operating noise and vibrations

Make sure the required space for installation is provided. See chapters “General Outline: Indoor Units” and “General Outline: Outdoor Units”.

Equipment does not operate (operation light OFF)

To troubleshoot, check the following:

➤ Check if the breaker has switched OFF or the fuse has blown.

➤ Check if the batteries are placed in the remote controller.

➤ Check if the address switch is set correctly. See page 4–5.

➤ Check if the timer is set correctly.

Poor cooling or heating

To troubleshoot, check the following:

➤ Check if the filters are clean.

➤ Check if there is no obstruction of the air inlet or outlet of the indoor and outdoor units.

➤ Check if the temperature settings are correct.

➤ Check if all windows and doors are closed.

➤ Check if the air flow and air direction are set correctly.

➤ Check if there is no ventilation operation.

Operation stops suddenly (operation light flashes)

To troubleshoot, check the following:

➤ Check if the air filters are clean.

➤ Check if there is no obstruction of the air inlet or outlet of the indoor and outdoor units.

The operation light flashes when the following errors are detected:

➤ Activation of a safety device or malfunctioning thermistors.

➤ Transmission error between the indoor and the outdoor unit.

Abnormal functioning

The air conditioner may malfunction due to lightning or radio waves. To check, proceed as follows:

Step	Action
1	Switch OFF the breaker.
2	Switch it back ON.
3	Check the operation by trying to operate with the remote controller.

1.3 Emergency Operation and Checking with the Wired Remote Controller

Emergency operation

When the remote controller is not available or its battery is dead, you can use the emergency button on the front panel of the indoor unit :

- ➤ To start the automatic mode, press the emergency button.
- ➤ To stop the automatic mode, press the button again.

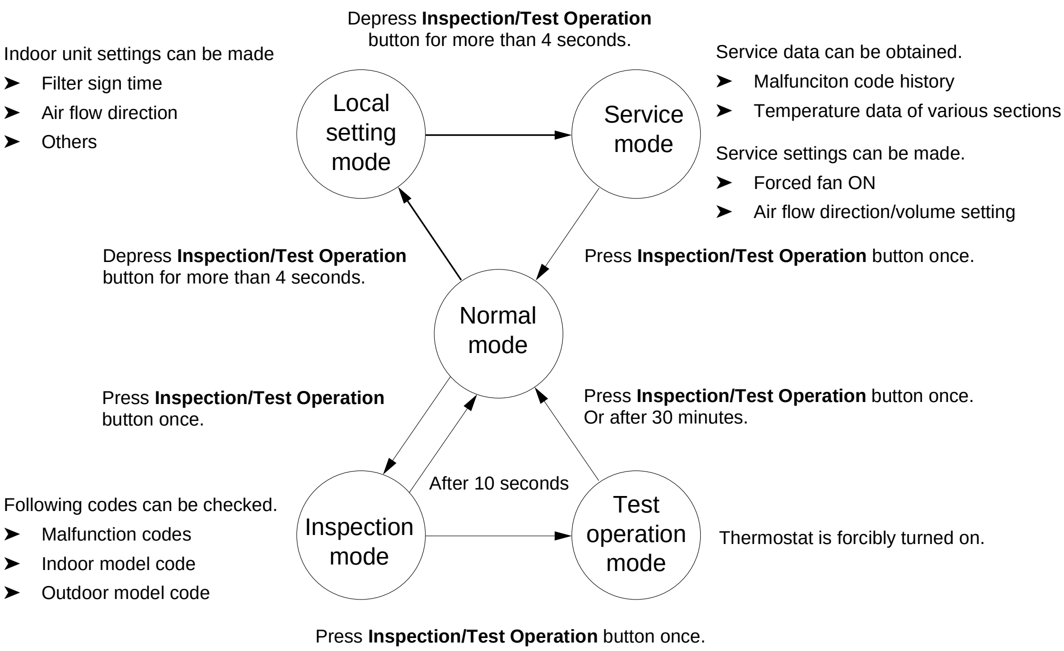
Checking with the wired remote controller

If the operation stops due to a malfunction, the remote controller's operation LED flashes, and the controller displays the error code. The error code helps you to troubleshoot. See page 3–15, 3–16 and 3–17.

1.4 Procedure of Self-Diagnosis by Remote Controller

The Inspection/Test Button: explanation

By turning the remote controller's inspection/test button ON, you can change the mode as shown in the figure below.



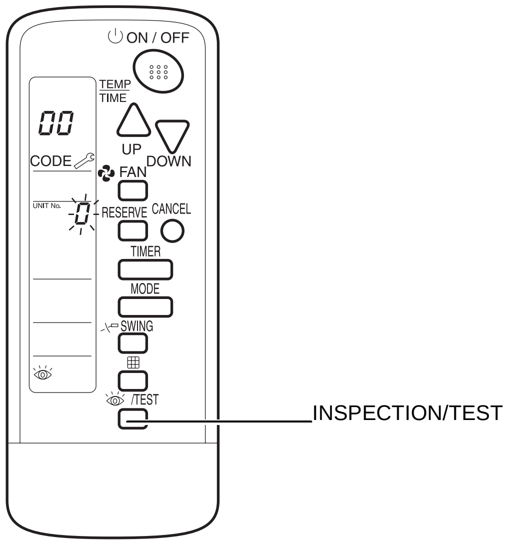
1.5 Checking with the Wireless Remote Controller Display

Introduction

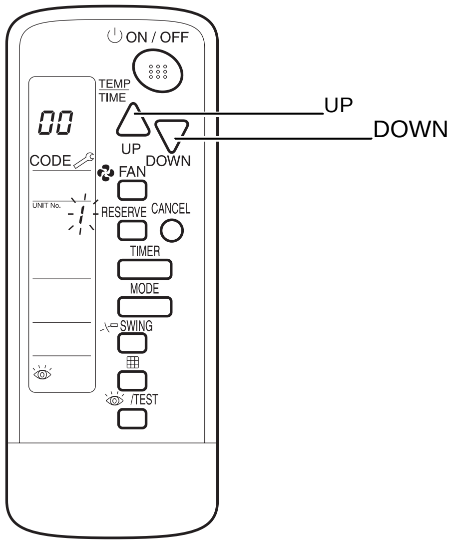
Contrary to the wired remote controller, the wireless remote controller does not display the error code. Instead, the operation LED on the light reception section flashes.

Checking

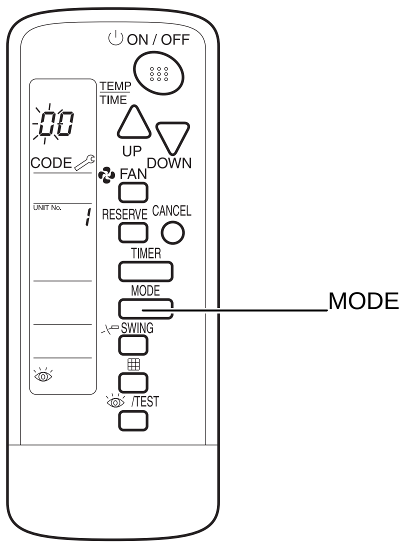
To find the error code, proceed as follows:

Step	Action
1	Press the INSPECTION/TEST button to select “inspection”. The equipment enters the inspection mode. “0” flashes in the UNIT No. display. 

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>2</td><td>Press the UP or DOWN button and change the UNIT No. until the receiver of the remote controller starts to beep.

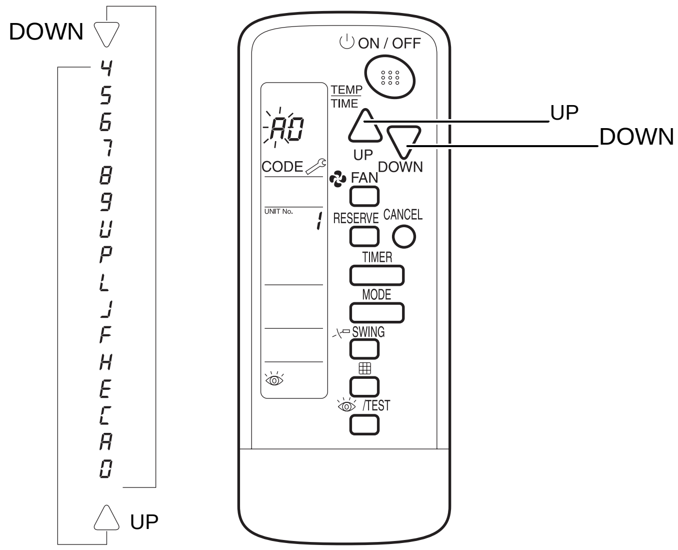


<table>
<tr><th>If you hear...</th><th>Then...</th></tr>
<tr><td>3 short beeps</td><td>Follow all steps below.</td></tr>
<tr><td>1 short beep</td><td>Follow steps 3 and 4. Continue the operation in step 4 until you hear a continuous beep. This continuous beep indicates that the error code is confirmed.</td></tr>
<tr><td>1 continuous beep</td><td>There is no abnormality.</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Press the MODE selector button.The left “0” (upper digit) indication of the error code flashes.’

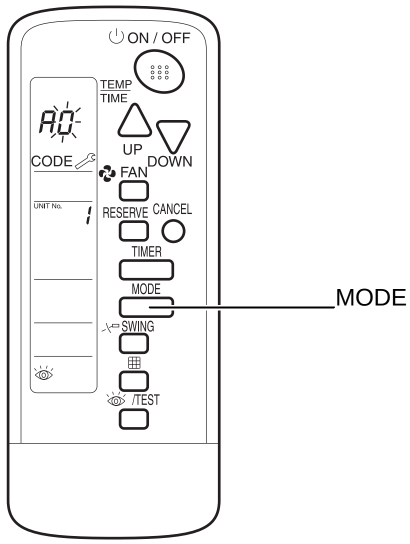


</td></tr>
</table>

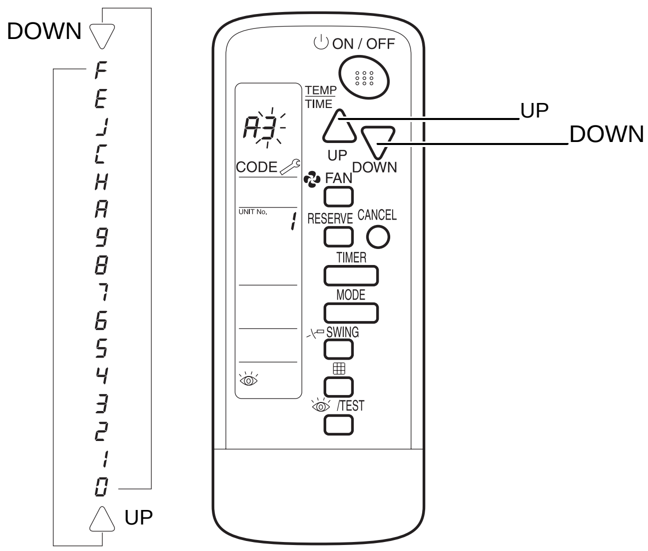
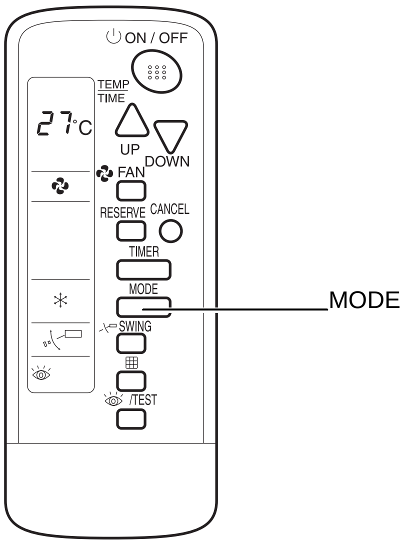
<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>4</td><td>Press the UP or DOWN button to change the error code upper digit until the receiver of the remote controller starts to beep.



<table>
<tr><th>If you hear...</th><th>Then...</th></tr>
<tr><td>2 short beeps</td><td>The upper digit matches.</td></tr>
<tr><td>1 short beep</td><td>No digits match.</td></tr>
<tr><td>1 continuous beep</td><td>Both upper and lower digits match.</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>Press the MODE selector button.The right “0” (lower digit) indication of the error code flashes.



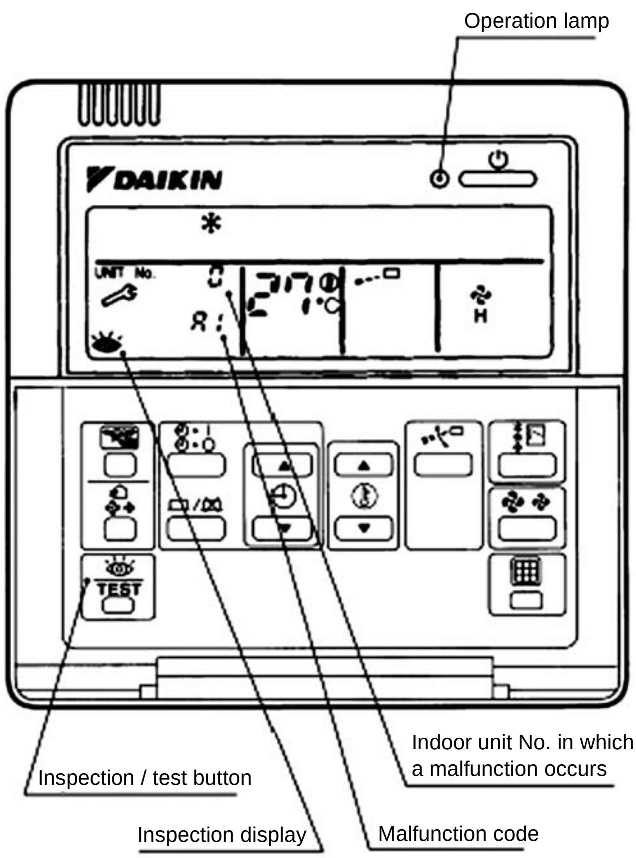
</td></tr>
</table>

Step	Action
6	Press the UP or DOWN button and change the error code lower digit until the receiver of the remote controller generates a continuous beep. 
7	Press the MODE button to return to normal status. If you do not press any button for at least 1 min, the remote controller returns automatically to normal status. 

1.6 Self-Diagnosis by Wired Remote Controller

Explanation

If operation stops due to malfunction, the remote controller's operation LED blinks, and malfunction code is displayed. (Even if stop operation is carried out, malfunction contents are displayed when inspection mode is entered.) The malfunction code enables you to tell what kind of malfunction caused operation to stop. See page 3-13 for malfunction code and malfunction contents.
<New Remote Controller> BRC1D527



1.7 Remote Controller Display Malfunction Code and Contens

Malfunction Code	Contents/Processing	Remarks
A1	Failure of PC board ass'y for indoor unit	
A3	Malfunction of water level system	
A6	Indoor unit fan motor overload / overcurrent / lock	
AF	Malfunction of water level system	Float switch is OFF during indoor unit stops.
AJ	Failure of capacity setting	Either capacity data is set incorrectly, or capacityhas not been set for the data IC
C4	Malfunction of heat exchanger temperature sensor system	
C9	Malfunction of suction air temperature sensor system	
CJ	Malfunction of remote control temperature sensor system	The remote controller thermistor does not function, but the system thermostat operation is possible.
E0	Actuation of safety device (outdoor unit)	
E1	Outdoor P.C. board malfunction	
E3	High pressure malfunction (outdoor unit)	
E4	Low pressure malfunction (outdoor unit)	
E6	Compressor overcurrent	
E9	Malfunction of electronic expansion valve (outdoor unit)	
F3	Discharge pipe temperature malfunction (outdoor unit)	
F6	Heat exchanger temperature abnormal	
H3	Failure of high pressure switch (outdoor unit)	
H9	Malfunction of outdoor air temperature sensor system (outdoor unit)	(See Note below)
J2	Malfunction of current sensor system	
J3	Malfunction of discharge pipe temperature sensor system (outdoor unit)	
J6	Malfunction of heat exchanger temperature sensor system (outdoor unit)	(See Note below)
PJ	Failure of capacity setting (outdoor unit)	Either capacity data is set incorrectly, or capacity has not been set for the data IC
U0	Malfunction of suction pipe temperature	
U1	Reverse phase Switch R.S.T. of the 3-phase power supply.	

Malfunction Code	Contents/Processing	Remarks
U4 or UF	Failure of transmission (between indoor and outdoor unit)	Wrong wiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wiring between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wiring. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.)
U5	Failure of transmission (between indoor unit and remote controller)	Transmission between indoor and remote controller is not being correctly carried out.
U8	Failure of transmission (between "main" and "sub" remote controller	Transmission between "main" and "sub" remote controller is not being correctly carried out.
UA	Failure of field setting	System setting mistake for Twin system.
UC	Address duplication of central remote controller	

➤ In the case of the shaded error codes, "inspection" is not displayed. The system operates, but be sure to inspect and repair it.

Note Operation when a malfunction occurs may differ according to the model.

1.8 Troubleshooting with the Indoor Unit LEDs and the Remote Controller

Shutdown

For some errors, the system only shuts down when the error occurs several times. This means that you have to wait until the system shuts down to be able to see the flashing LED on the front panel and the error code on the remote controller.

Malfunction overview

The table below contains an overview of the indoor unit malfunctions.

If...				Then...			
LED front panel	Indoor unit LED		Remote controller display	Location of the malfunction		Malfunction description	See page
	H1P (HAP)	H2P (HBP)		Other than PCB	PCB ind. unit		
●	☀	☀	Note 1	—	—	Normal	—
☀	☀	☼	A1	—	○	Malfunctioning Indoor PCB (A1)	3–26
	☀	●					
	☼	—					
	●	—					
	☀	☀	A3	◎	—	Malfunctioning Drain Water Level System (A3)	3–27
			A6	◎	□	Indoor Unit Fan Motor Lock (A6)	3–29
			AF	◎	○	Malfunctioning Drain System (AF)	3–31
			AJ	◎	○	Malfunctioning Capacity Setting (AJ)	3–32
			C4 or C9	◎	□	Thermistor Abnormality (C4 or C9)	3–34
			CJ	◎	○	Malfunctioning Remote Controller Air Thermistor (CJ)	3–36

Symbols and notes

The table below describes the symbols and notes used in the malfunction overview.

Symbol / note	Description
Note 1	Variety of circumstances
☼	LED is ON
☀	LED is flashing
●	LED is OFF
◎	High probability of malfunction
○	Low probabiltiy of malfunction
□	No possibility of malfunction (do not replace)

1.9 Troubleshooting with the Remote Controller: Outdoor Malfunctions

Malfunction overview

The table below contains an overview of the outdoor unit malfunctions.

Outdoor Unit Mal-functions	Remote Controller Display	Location of Malfunction				Contents of Malfunction	Details of Malfunction (Reference page)
		Other than PC Board	PC Board				
			Outdoor Unit	Indoor unit	Remote Contr.		
	E0	◎	□	—	—	Actuation of safety device	3–38
	E1	—	○	—	—	Outdoor P.C. board malfunction	3–43
	E3	◎	—	—	—	High pressure system (HPS) malfunction	3–44
	E4	◎	—	—	—	Low pressure system (LPS) malfunction	3–46
	E6	◎	□	—	—	Compressor Overcurrent	3–48
	E9	◎	□	—	—	Malfunction of electronic expansion valve	3–50
	F3	◎	□	—	—	Discharge pipe temperature malfunction	3–52
	F6	◎	—	—	—	Malfunction of heat exchanger temperature	3–57
	H3	◎	□	—	—	Failure of high pressure switch	3–54
	H9	◎	□	—	—	Malfunction of outdoor air temperature sensor system	3–55
	J2	—	○	—	—	Malfunction of current sensor system	3–59
	J3	◎	□	—	—	Malfunction of discharge pipe temperature sensor system	3–56
	J6	◎	□	—	—	Malfunction of heat exchanger temperature sensor system	3–57
	PJ	◎	□	—	—	Failure of capacity setting	3–60

Symbols and notes

The table below describes the symbols and notes used in the malfunction overview.

Symbol / note	Description
◎	High probability of malfunction
○	Low probabiltiy of malfunction
□	No possibility of malfunction (do not replace)

1.10 Troubleshooting with the Remote Controller: System Malfunctions

Malfunction overview

The table below contains an overview of the system malfunctions.

If...	Then...					
Rem. contr. display	Location of the malfunction				Malfunction description	See page
	Other than PCB	PCB outd. unit	PCB ind. unit	Rem. contr.		
U0	◎	—	—	—	Gas Shortage Detection (UO)	3–62
U1	◎	☐	—	—	Reverse Phase (U1)	3–63
U4 or UF	◎	○	○	—	Transmission Error between Indoor and Outdoor Unit (U4 or UF)	3–65
U5	◎	—	○	○	Transmission Error between Indoor Unit and Remote Controller (U5)	3–67
U8	◎	—	○	○	Transmission Error between MAIN Remote Controller and SUB Remote Controller (U8)	3–68
UA	◎	—	○	—	Malfunctioning Field Setting Switch (UA)	3–69

Symbols and notes

The table below describes the symbols and notes used in the malfunction overview.

Symbol / note	Description
◎	High probability of malfunction
○	Low probabiltiy of malfunction
☐	No possibility of malfunction (do not replace)

3

1.11 Overview of the Indoor Safety Devices

Overview

The table below contains an overview of the indoor safety devices.

Applicable unit	Thermal protector fan motor		Thermal fuse fan motor
	Abnormal	Reset (automatic)	
FH(Y)C(P)	> 130 ± 5°C	< 83 ± 20°C	N.A.
FHYBP	N.A.	N.A.	> 152°C
FH(Y)(P)	> 130 ± 5°C	< 83 ± 20°C	N.A.
FUYP	> 130 ± 5°C	< 83 ± 20°C	N.A.
FDYP	N.A.	N.A.	> 160°C
FAYP	> 130 ± 5°C	< 83 ± 20°C	N.A.
FH(Y)K(P)	> 120 ± 5°C	< 105°C	N.A.
FDYMP	N.A.	N.A.	>152°C

1.12 Overview of the Outdoor Safety Devices

Overview

The table below contains an overview of the outdoor safety devices.

<table>
<tr><th>Applicable outdoor unit</th><th>Reverse phase protector</th><th>Overload contact compressor</th><th>Thermal protector fan motor</th><th>Overcurrent relay compressor</th><th>High-pressure switch</th><th>Low-pressure switch</th></tr>
<tr><td>RP71L7V1</td><td rowspan="2">—</td><td rowspan="10">—</td><td rowspan="10">X</td><td rowspan="10">—</td><td rowspan="10">X</td><td rowspan="10">X</td></tr>
<tr><td>RYP71L7V1</td></tr>
<tr><td>RP71L7W1</td><td rowspan="2">X</td></tr>
<tr><td>RYP71L7W1</td></tr>
<tr><td>VRP100L7V1</td><td rowspan="2">—</td></tr>
<tr><td>RYP100L7V1</td></tr>
<tr><td>RP100L7W1</td><td rowspan="4">X</td></tr>
<tr><td>RYP100L7W1</td></tr>
<tr><td>RP125L7W1</td></tr>
<tr><td>RYP125L7W1</td></tr>
</table>

1.13 Outdoor Safety Device: Thermal Protector Fan Motor

Thermal protector fan motor

The table below describes the thermal protector of the fan motor.

Applicable outdoor unit	Wiring symbol	Location safety	Settings		Type
			Abnormal	Reset	Reset
RP71L7V1	Q1M	Outdoor fan motor Q1M connected to X11A Q2M connected to X12A	> 135±5°C	< 95±15°C	Automatic
RYP71L7V1					
RP71L7W1					
RYP71L7W1					
RP100L7V1					
RYP100L7V1					
RP100L7W1					
RYP100L7W1					
RP125L7W1	Q1M and Q2M				
RYP125L7W1					

1.14 Outdoor Safety Device: Reverse Phase Protector

Reverse phase protector

The table below describes the reverse phase protector.

Applicable outdoor unit	Wiring symbol	Location safety	Type / Reset
RP71L7V1	No reverse phase protector		
RYP71L7V1			
RP71L7W1	PRC	Switch Box	Automatic and power OFF
RYP71L7W1			
RP100L7V1	No reverse phase protector		
RYP100L7V1			
RP100L7W1	PRC	Switch box	Automatic and power OFF
RYP100L7W1			
RP125L7W1			
RYP125L7W1			

3

1.15 Outdoor Safety Device: High-Pressure Switch

High-pressure switch

The table below describes the high-pressure switch.

Applicable outdoor unit	Wiring symbol	Location safety	Settings		Type
			Abnormal	Reset	Reset
RP71L7V1	S1PH	Discharge pipe	> 33 Bar	< 25.5 Bar	Automatic
RYP71L7V1					
RP71L7W1					
RYP71L7W1					
RP100L7V1					
RYP100L7V1					
RP100L7W1					
RYP100L7W1					
RP125L7W1					
RYP125L7W1					

1.16 Outdoor Safety Device: Low-Pressure Switch

Low-pressure switch

The table below describes the low-pressure switch.

Applicable outdoor unit	Wiring symbol	Location safety	Settings		Type
			Abnormal	Reset	Reset
RP71L7V1	S1LP	Low-pressure switch located in suction pipe	< -0.3 bar	> +0.5 bar	Automatic
RYP71L7V1					
RP71L7W1					
RYP71L7W1					
RP100L7V1					
RYP100L7V1					
RP100L7W1					
RYP100L7W1					
RP125L7W1					
RYP125L7W1					

3

2 Error Codes: Indoor Units

2.1 What Is in This Chapter?

Introduction

In the first stage of the troubleshooting sequence, it is important to correctly interpret the error code on the remote controller display. The error code helps you to find the cause of the problem.

Shutdown

For some errors, the system only shuts down when the error occurs several times. This means that you have to wait until the system shuts down to be able to see the flashing LED on the front panel and the error code on the remote controller.

Overview

This chapter contains the following topics:

2.2 Malfunctioning Indoor PCB (A1)

Error code

A1

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal	◐	◐
Malfunctioning	◐	☼
	◐	●
	☼	—
	●	—

Error generation

The error is generated when the data from the EEPROM is not received correctly.

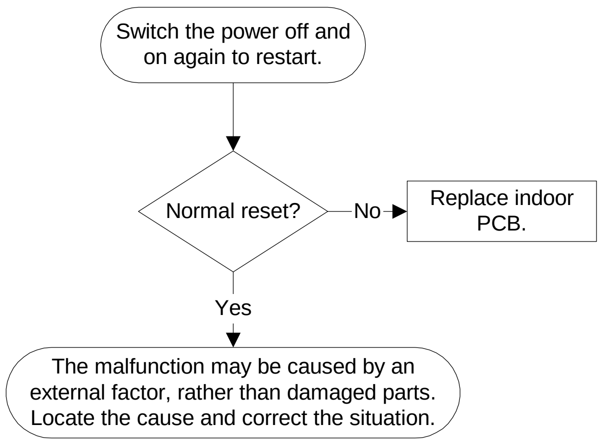
EEPROM (Electrically Erasable Programmable Read Only Memory): A memory chip that holds its content without power. It can be erased, either within the computer or externally and usually requires more voltage for erasure than the common +5 volts used in logic circuits. It functions like non-volatile RAM, but writing to EEPROM is slower than writing to RAM.

Causes

The possible cause is a malfunctioning indoor PCB.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

2.3 Malfunctioning Drain Water Level System (A3)

Error code

A3

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal	☼	☼
Malfunctioning	☼	☼

Error generation

The error is generated when the water level reaches its upper limit and when the float switch turns OFF.

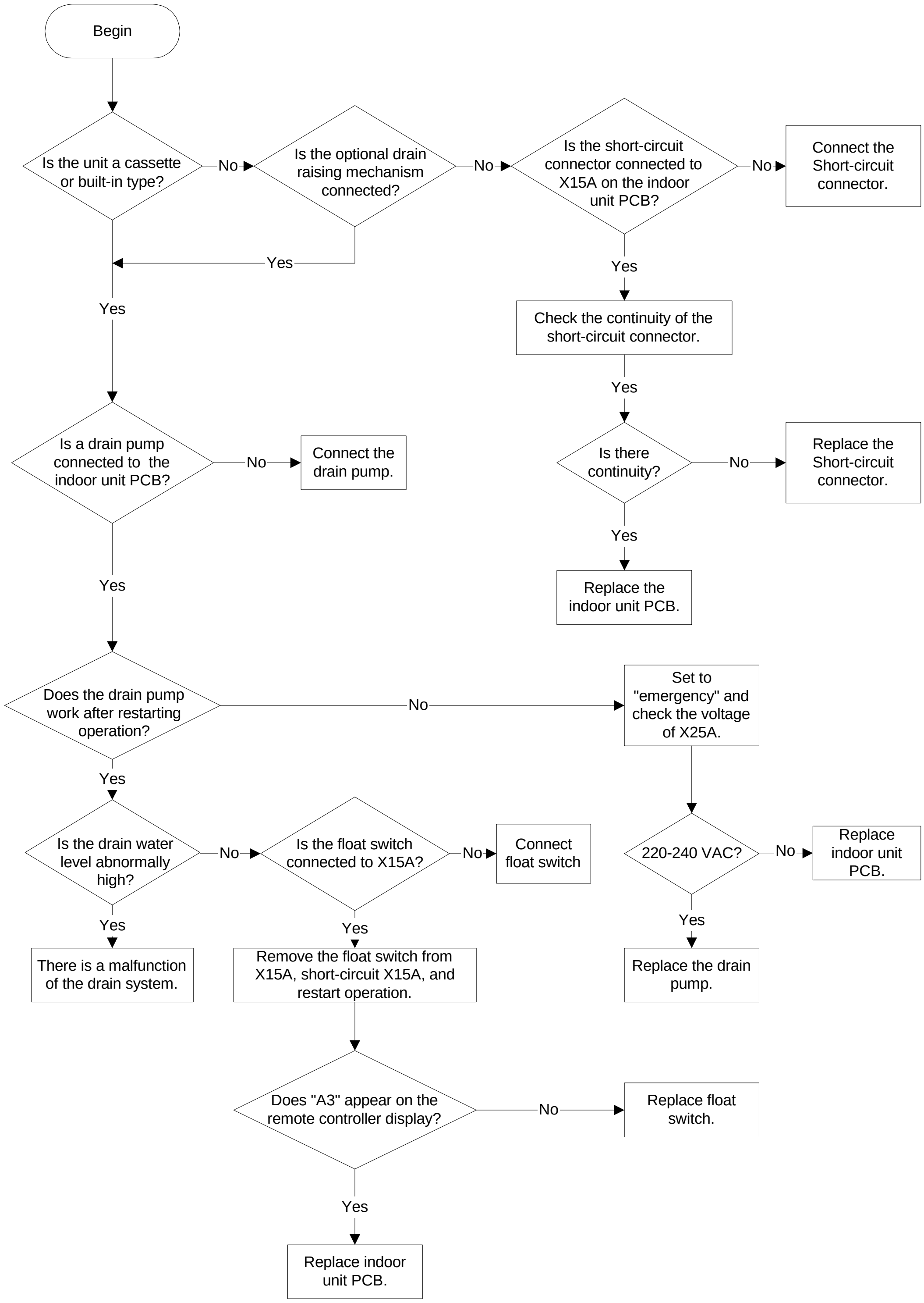
Causes

The possible causes are:

- ➤ Malfunctioning drain pump
- ➤ Improper drain piping work
- ➤ Drain piping clogging
- ➤ Malfunctioning float switch
- ➤ Malfunctioning indoor unit PCB
- ➤ Malfunctioning short-circuit connector X15 on PCB.

Troubleshooting

To troubleshoot, proceed as follows:



Remark

If "A3" is detected by a PC board which is not mounted with X15A, the PC board is defective.

Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

2.4 Indoor Unit Fan Motor Lock (A6)

Error code

A6

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal	◐	◐
Malfunctioning	◐	◐

Error generation

The error is generated when the fan rotations are not detected while the output voltage to the fan is at its maximum.

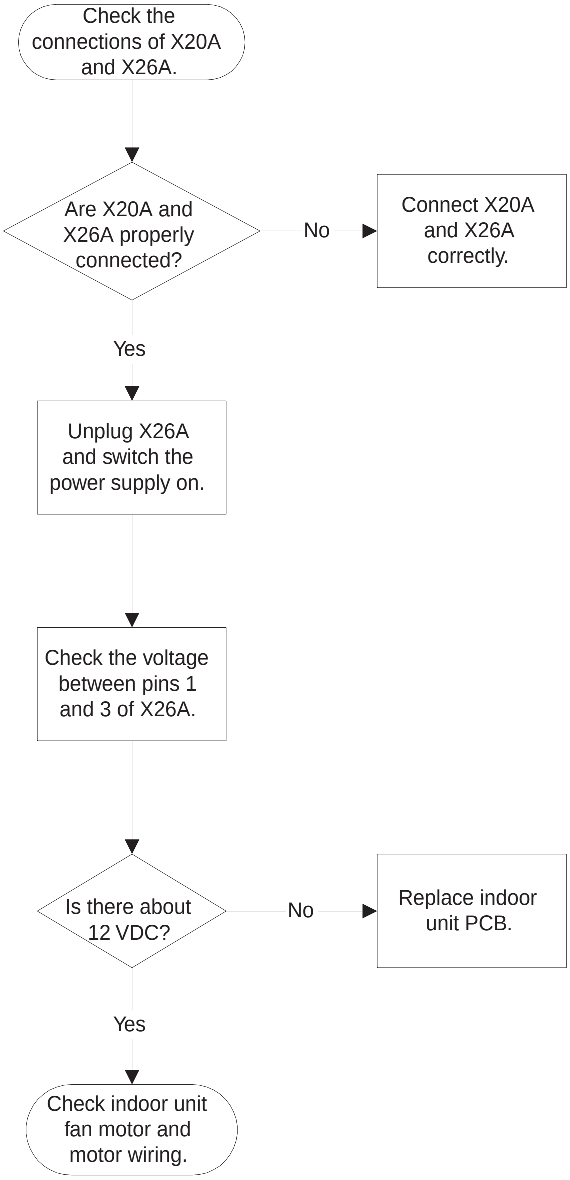
Causes

The possible causes are:

- ➤ Malfunctioning indoor unit fan motor
- ➤ Broken or disconnected wire
- ➤ Malfunctioning contact
- ➤ Malfunctioning indoor unit PCB.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

2.5 Malfunctioning Drain System (AF)

Error code

AF

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal	☼	☼
Malfunctioning	☼	☼

Error generation

The error is generated when the float switch changes from ON to OFF while the compressor is OFF.

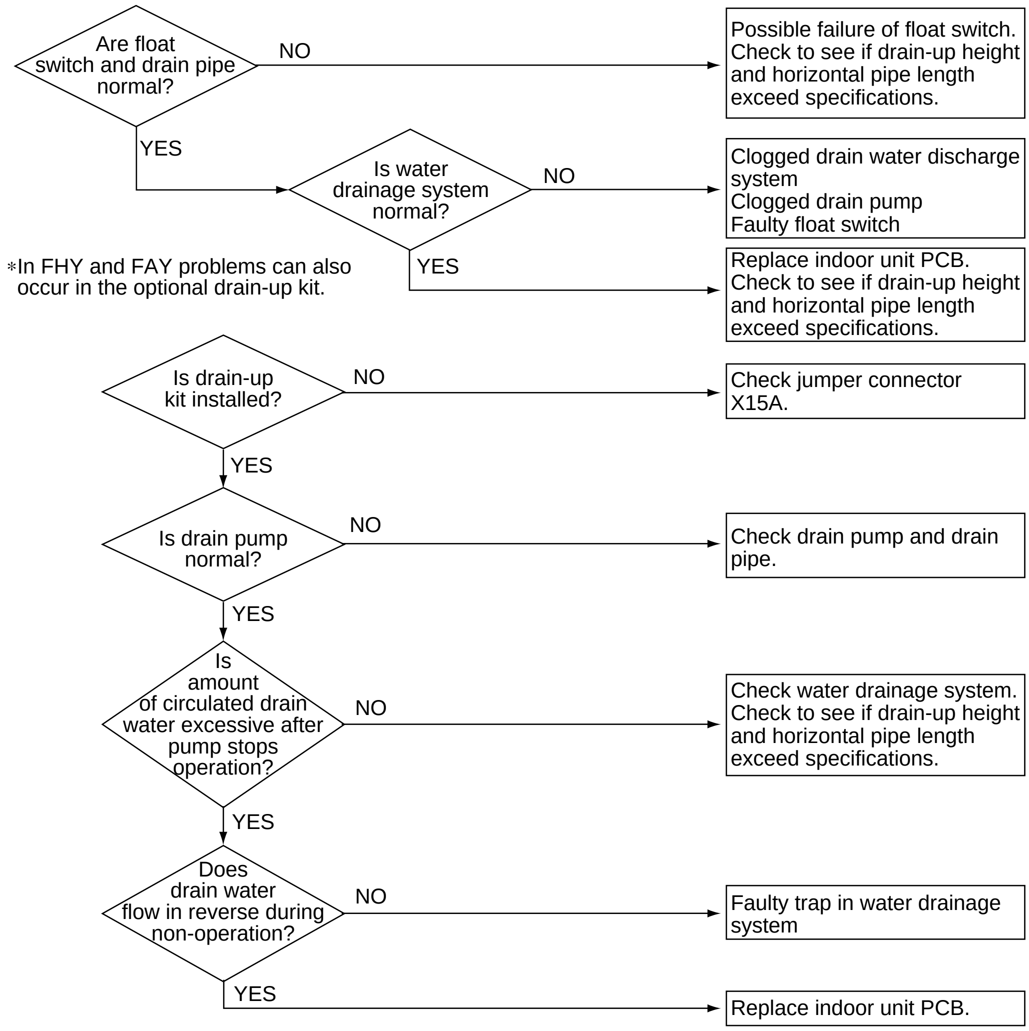
Causes

The possible causes are:

- ➤ Error in the drain pipe installation
- ➤ Malfunctioning float switch
- ➤ Malfunctioning indoor unit PCB.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

2.6 Malfunctioning Capacity Setting (AJ)

Error code

AJ

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal	☀	☀
Malfunctioning	☀	☀

3

Error generation

The error is generated when the following conditions are fulfilled:

Condition	Description
1	➤ The unit is in operation. ➤ The PCB’s memory IC does not contain the capacity code. ➤ The capacity setting adapter is not connected.
2	➤ The unit is in operation. ➤ The capacity that is set, does not exist for that unit.

Causes

The possible causes are:

- ➤ Malfunctioning capacity setting adapter connection
- ➤ Malfunctioning indoor unit PCB.

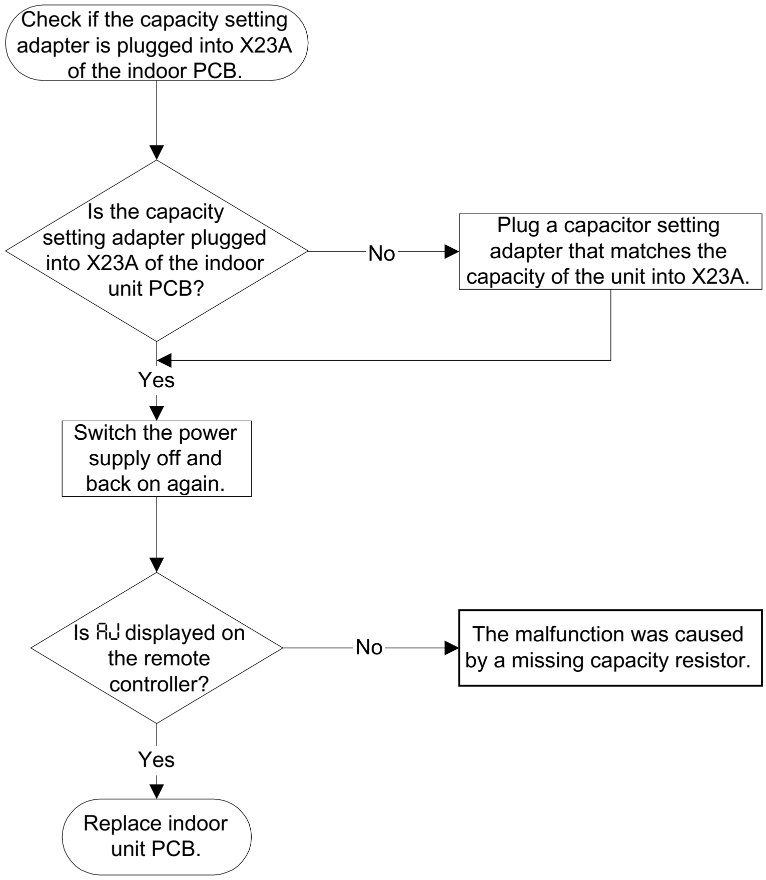
Capacity setting adapter

The capacity is set in the PCB’s memory IC. A capacity setting adapter that matches the capacity of the unit is required in the following case:

In case the indoor PCB installed at the factory is for some reason changed at the installation site, the capacity will not be contained in the replacement PCB. To set the correct capacity for the PCB you have to connect a capacity setting adapter with the correct capacity setting to the PCB. The capacity setting for the PCB will become the capacity setting of the adapter because the capacity setting adapter has priority.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

2.7 Thermistor Abnormality (C4 or C9)

Error code

The table below describes the two thermistor abnormalities.

Error	Description
C4	Malfunctioning heat exchanger thermistor system.
C9	Malfunctioning suction air thermistor system.

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal		
Malfunctioning		

Error generation

The error is generated when during compressor operation:

- Thermistor input > 4.96 V, or
- Thermistor output < 0.04 V.

Causes

The possible causes are:

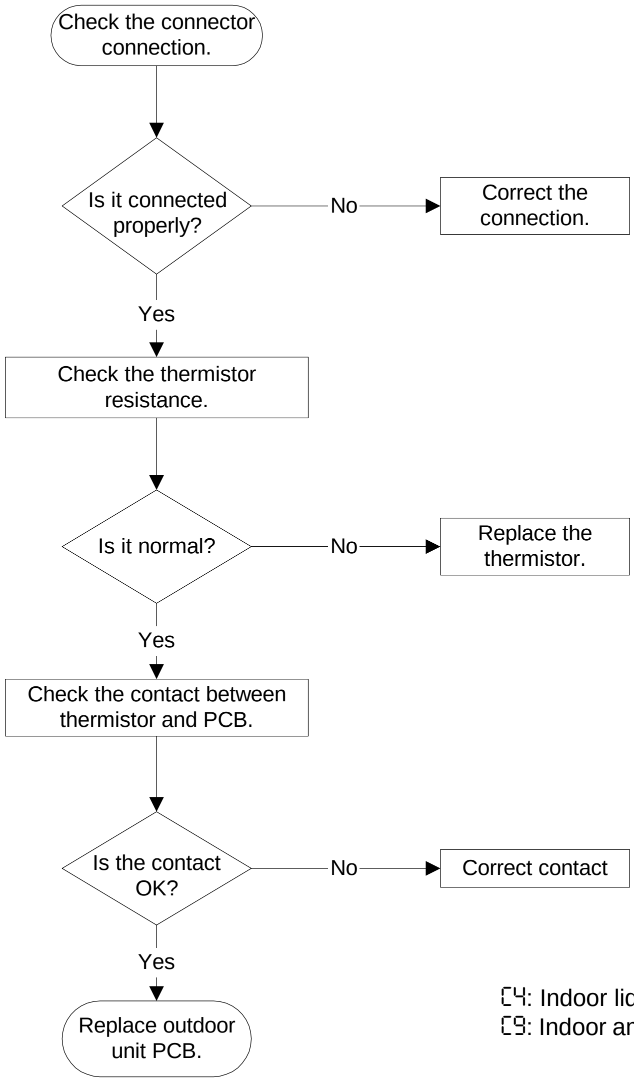
- Malfunctioning connector connection
- Malfunctioning thermistor
- Malfunctioning PCB
- Broken or disconnected wire.

Checking thermistors

See page 3–78.

Troubleshooting

To troubleshoot, proceed as follows:



C4: Indoor liquid pipe thermistor (R2T).
C9: Indoor ambient temperature thermistor (R1T).

Caution

Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

2.8 Malfunctioning Remote Controller Air Thermistor (CJ)

Error code

CJ

LED indications

The table below shows the LED indications.

Operation	HAP (green)	HBP (green)
Normal	☼	☼
Malfunctioning	☼	☼

Error generation

The error is generated when the remote controller thermistor becomes disconnected or shorted while the unit is running.

Even if the remote controller thermistor is malfunctioning, the system can operate with the system thermistor.

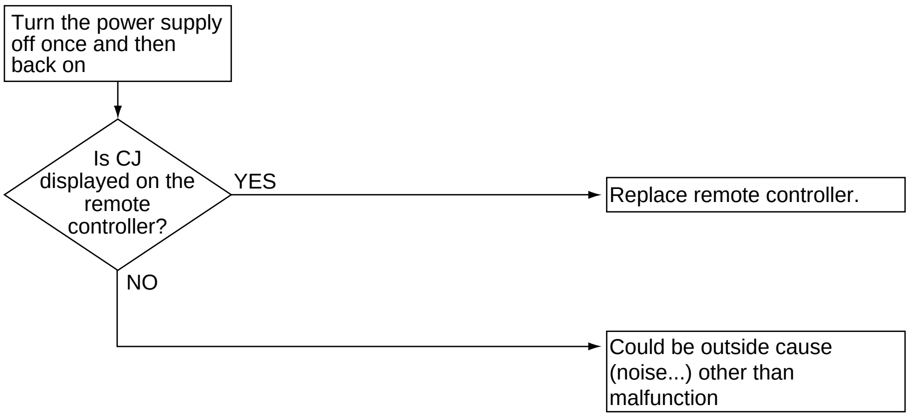
Causes

The possible causes are:

- ➤ Malfunctioning thermistor
- ➤ Broken wire.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

3 Error Codes: Outdoor Units

3.1 What Is in This Chapter?

Introduction

In the first stage of the troubleshooting sequence, it is important to correctly interpret the error code on the remote controller display. The error code helps you to find the cause of the problem.

Overview

This chapter contains the following topics:

3.2 Activation of Safety Device (E0)

Error code

E0

Error generation

The error is generated when a safety device has detected an abnormality.

Causes

The possible causes are:

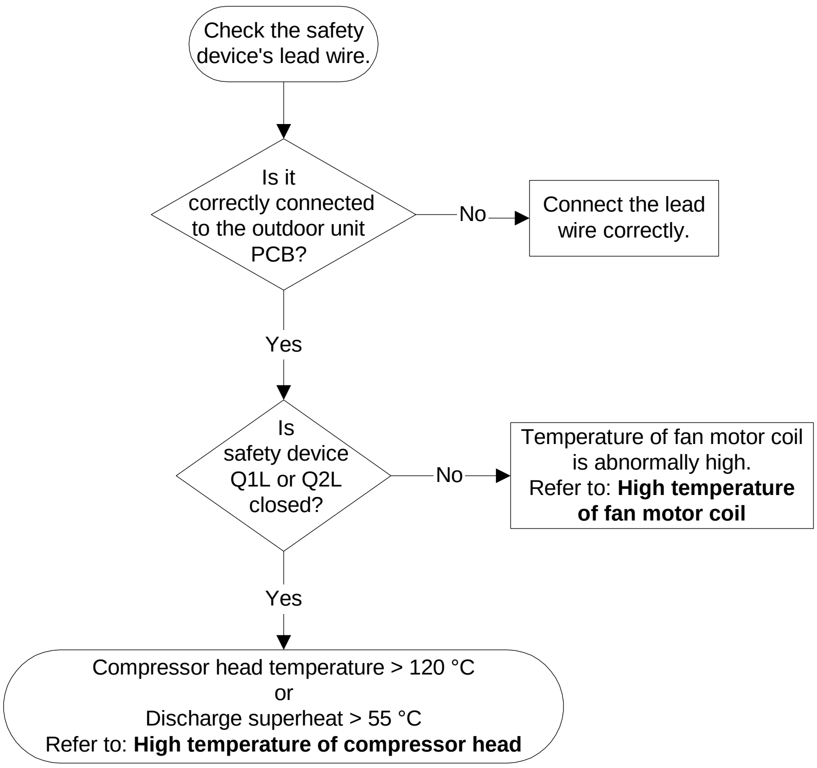
- ➤ Malfunctioning safety device input connection
- ➤ Broken or disconnected safety device harness
- ➤ Stop valve is set to “close”
- ➤ Clogging refrigerant piping circuit
- ➤ Air short-circuit
- ➤ Malfunctioning outdoor PCB.

Overview outdoor safety devices

See page 3–19.

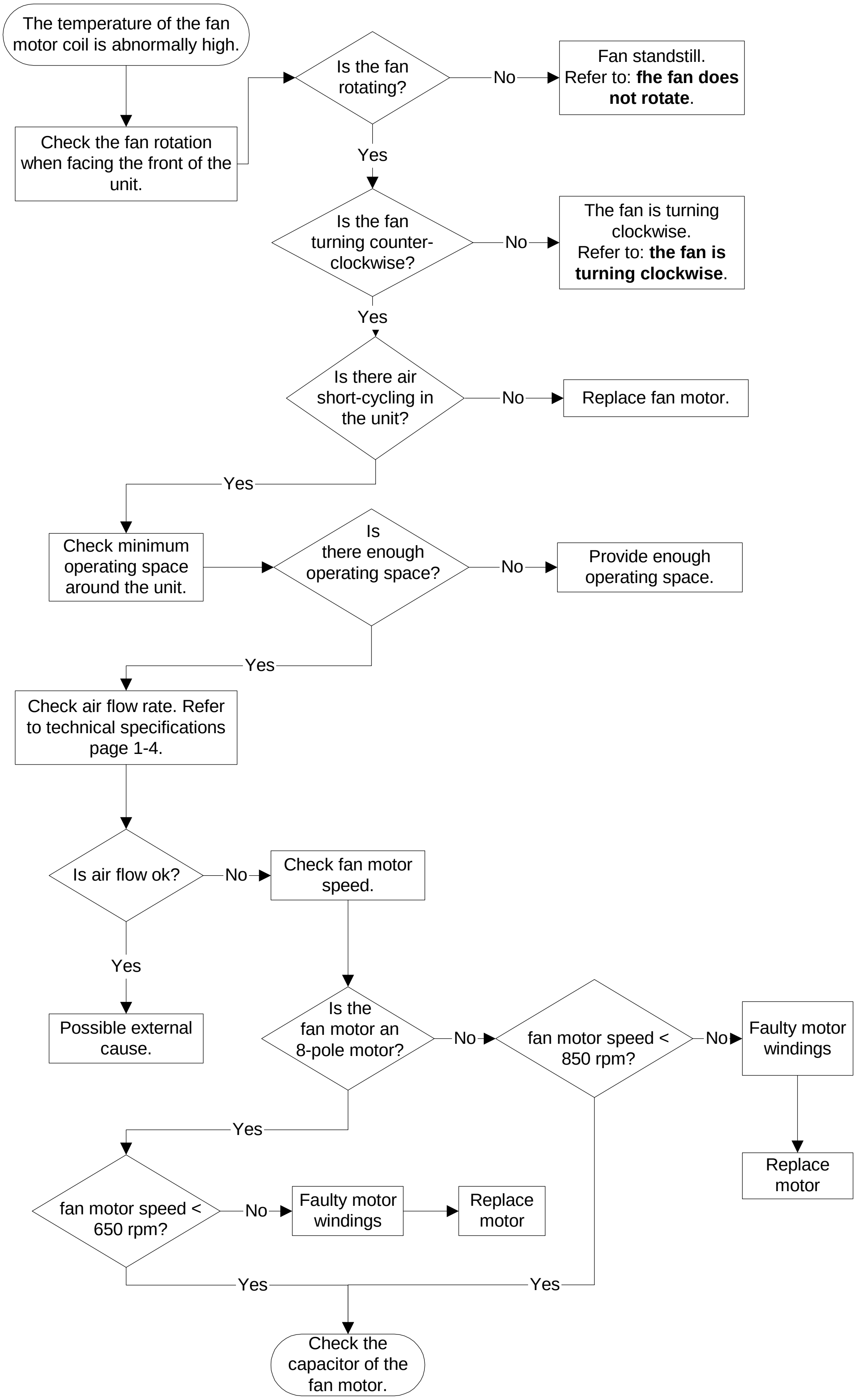
Troubleshooting

To troubleshoot, proceed as follows:



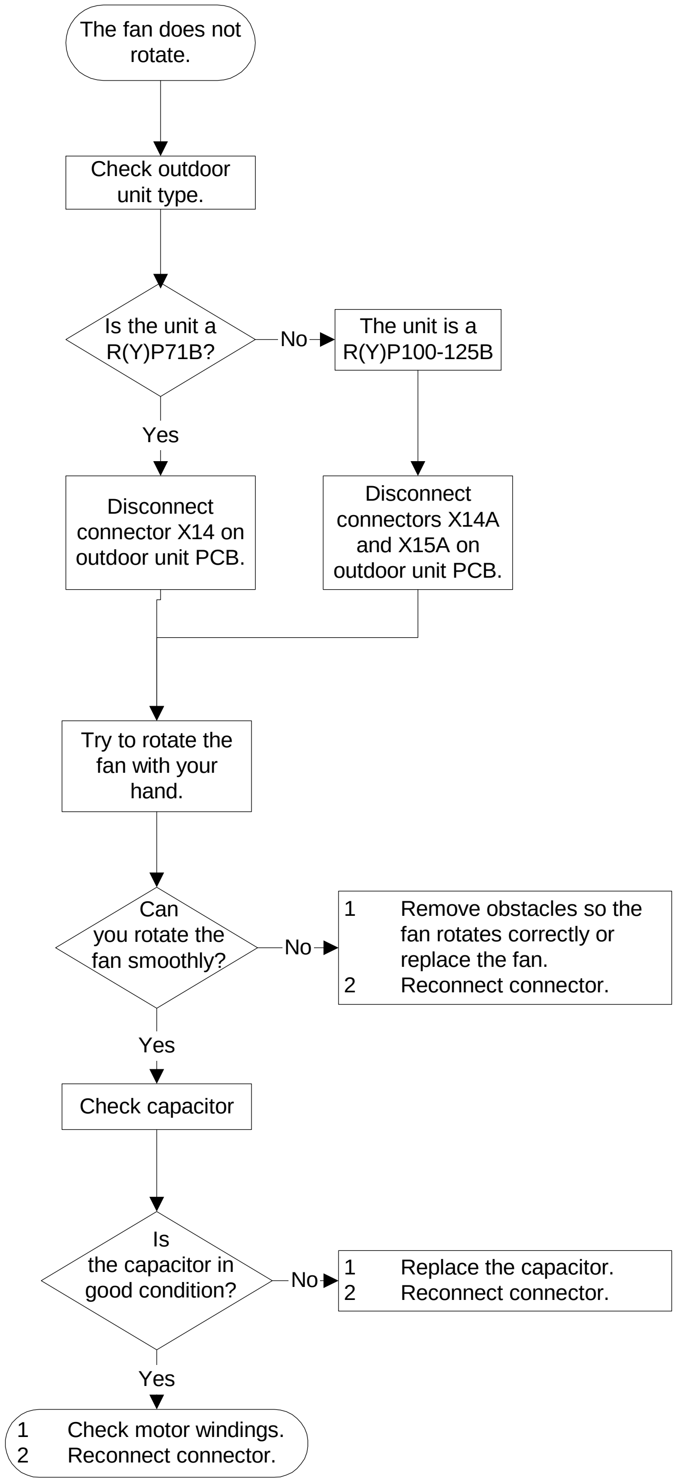
High temperature of fan motor coil

To troubleshoot, proceed as follows:



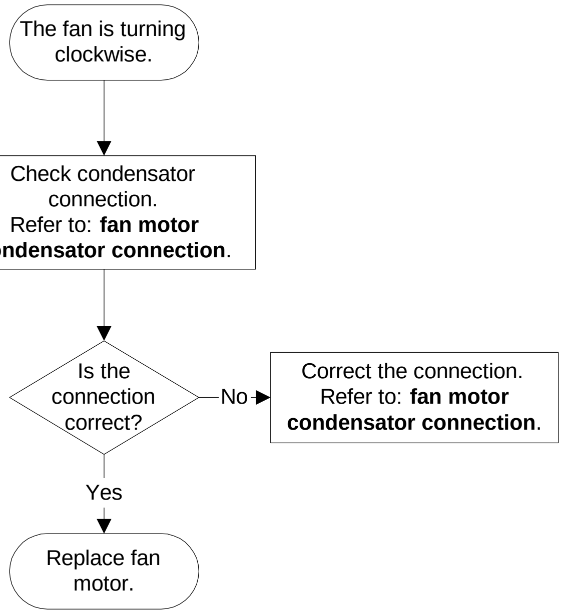
The fan does not rotate

To troubleshoot, proceed as follows:



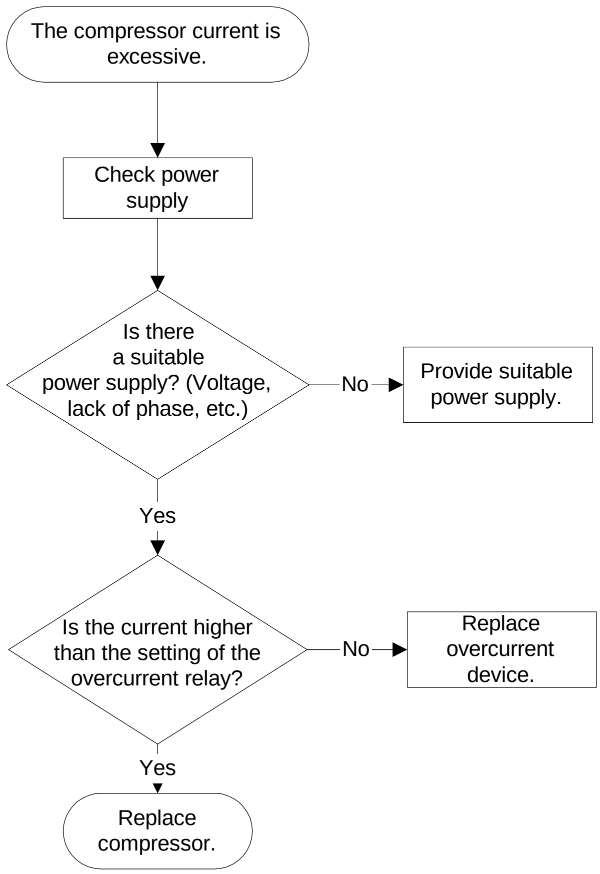
The fan is turning clockwise

To troubleshoot, proceed as follows:



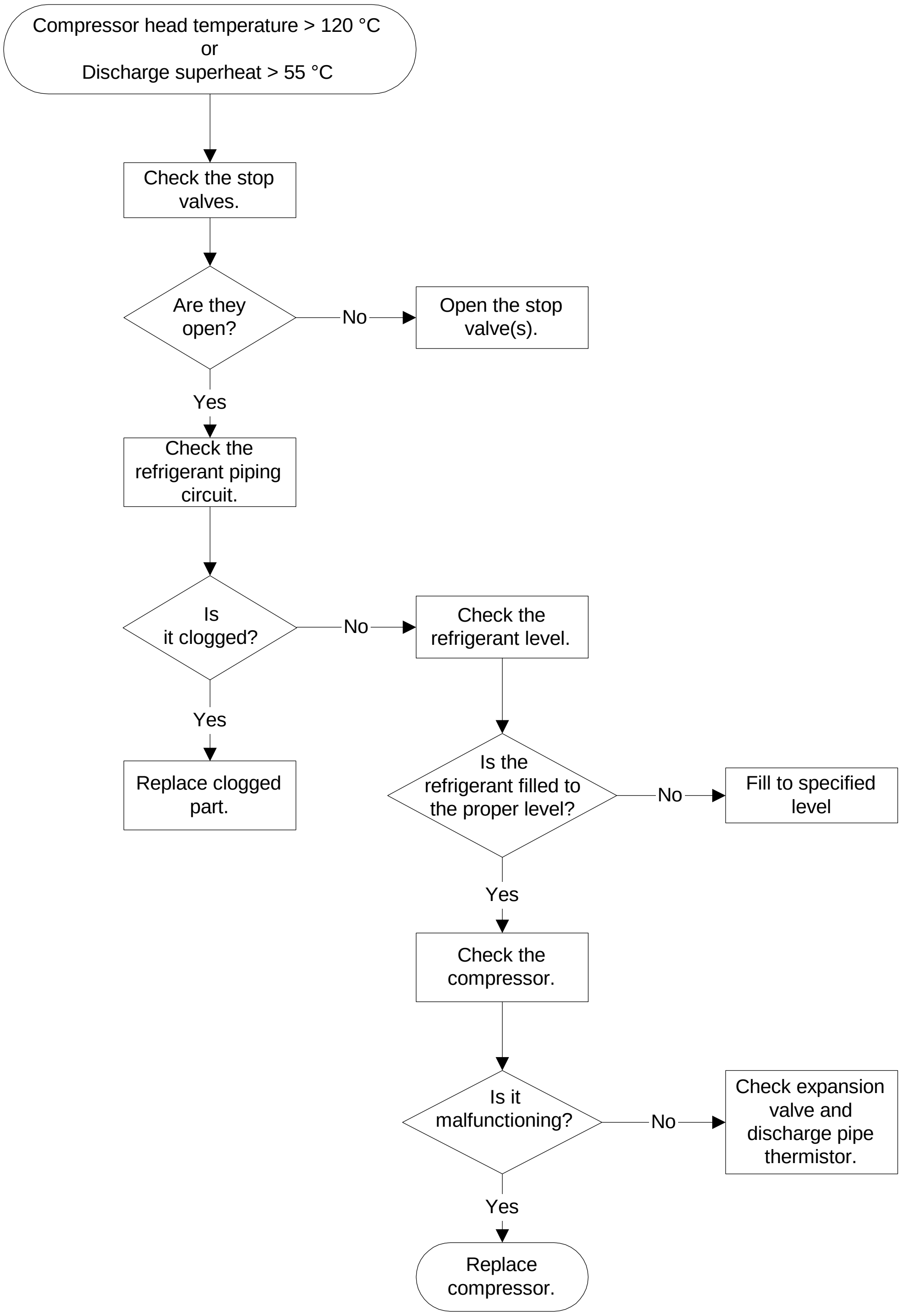
Excessive compressor current

To troubleshoot, proceed as follows:



High temperature of compressor head

To troubleshoot, proceed as follows:



3.3 Failure of Outdoor Unit PC Board (E1)

Remote Controller Display

E1

Method of Malfunction Detection

A microcomputer checks whether or not E^2PROM is normal.

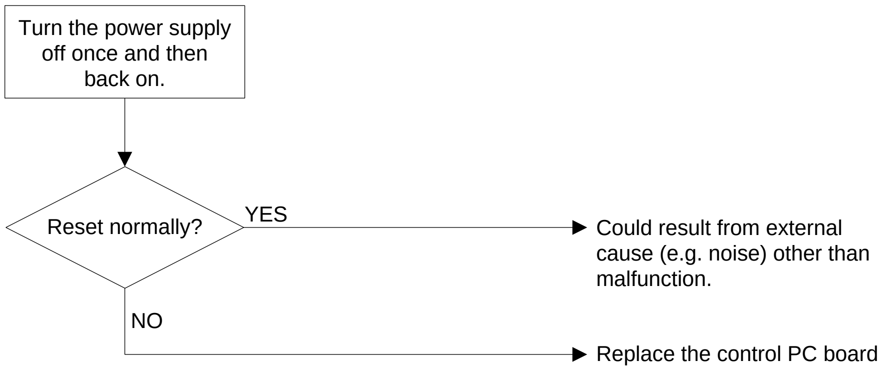
Malfunction Decision Conditions

The E^2PROM is malfunctioning when the power supply is turned on.

Possible Causes

- ➤ Faulty outdoor unit PC board

Troubleshooting



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

3.4 Abnormal High Pressure (Detected by the HPS) (E3)

Error code

E3

Error generation

The error is generated when the high-pressure switch is activated during compressor operation.

Causes

The possible causes are:

- Abnormal high pressure caused by too much refrigerant or by non-condensable gas (air or nitrogen)
- Inaccuracy of the high-pressure switch
- Broken or disconnected high-pressure switch harness
- Malfunctioning high-pressure switch connector connection
- Malfunctioning outdoor unit PCB
- Malfunctioning refrigerant piping circuit
- Indoor unit air filter is clogged (Heat mode)
- Outdoor heat exchanger dirty (Cool mode)
- Outdoor fan malfunction (Cool mode)
- Stop valves remained close

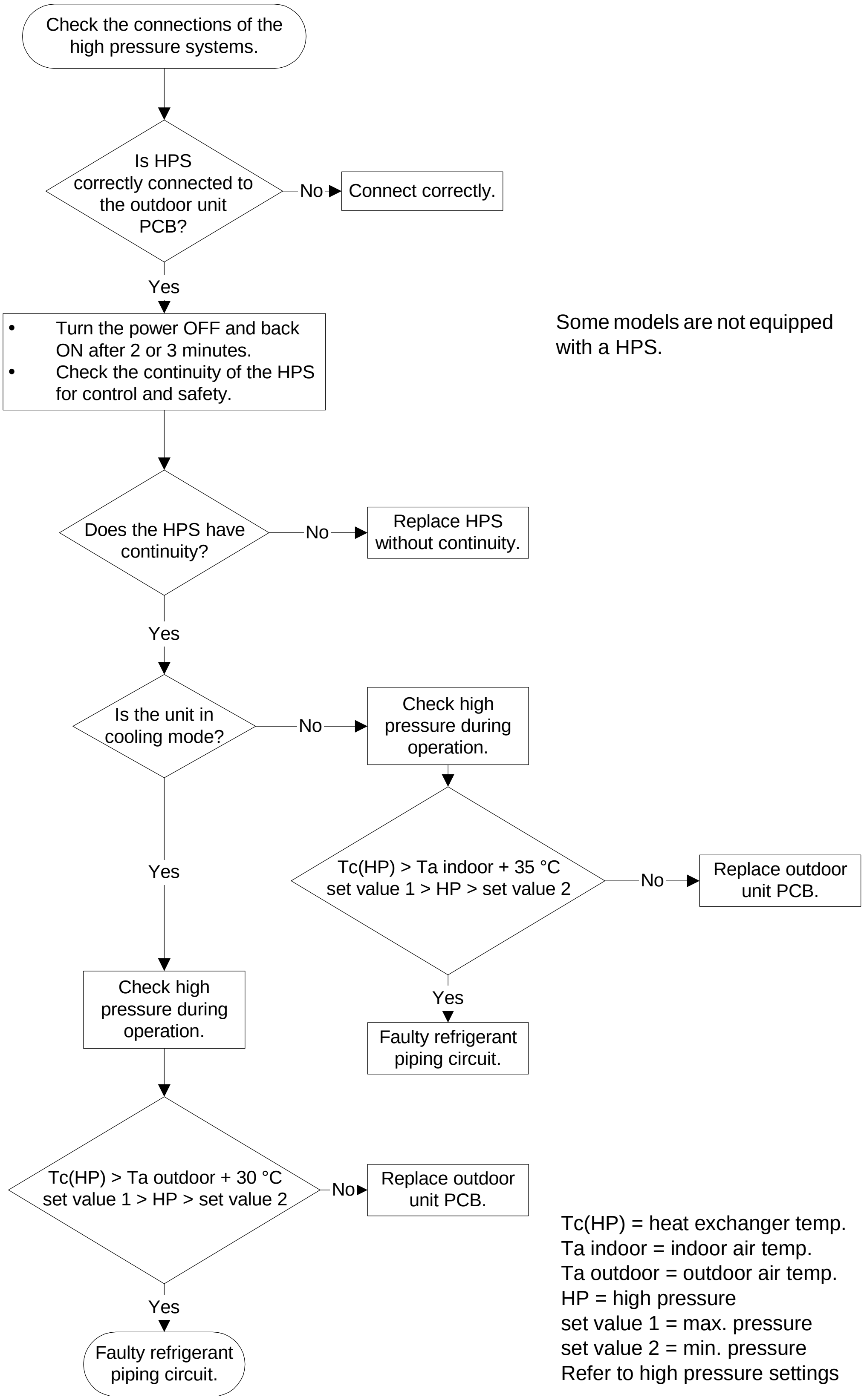
HPS settings

The table below contains the preset HPS values.

Applicable units	Abnormal	Reset
R(Y)P71/100/125L	> 33 bar	< 25.5 bar

Troubleshooting

To troubleshoot, proceed as follows:



Some models are not equipped with a HPS.

Tc(HP) = heat exchanger temp.
Ta indoor = indoor air temp.
Ta outdoor = outdoor air temp.
HP = high pressure
set value 1 = max. pressure
set value 2 = min. pressure
Refer to high pressure settings

Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

3.5 Abnormal Low Pressure (Detected by the LPS) (E4)

Error code

E4

Error generation

The error is generated when the low-pressure switch is activated during compressor operation.

Causes

The possible causes are:

- Malfunctioning refrigerant piping circuit
- Malfunctioning low-pressure switch
- Disconnected or broken low-pressure switch harness
- Malfunctioning low-pressure switch connector connection
- Malfunctioning outdoor unit PCB.
- Stop valve is left close

LPS settings

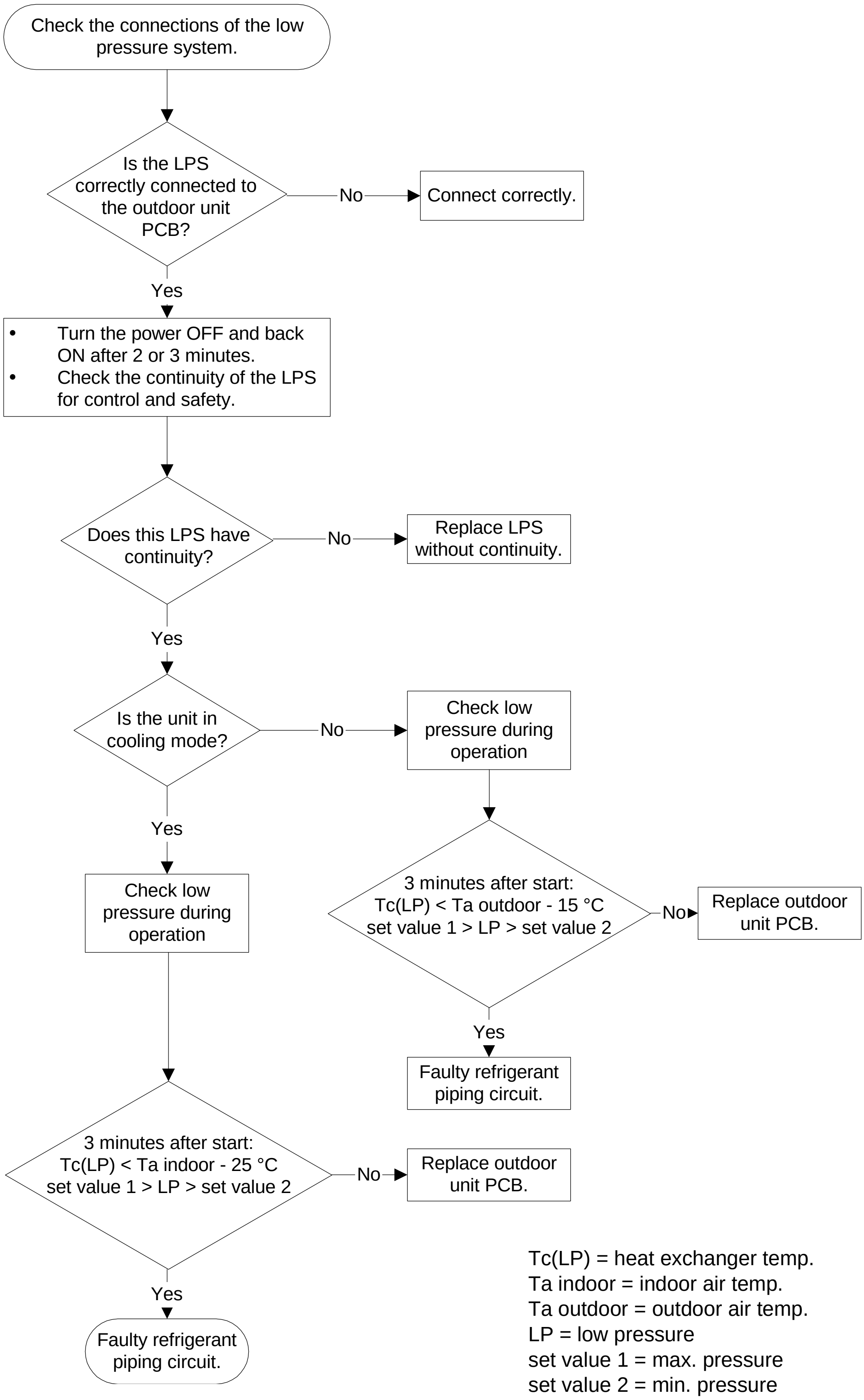
The table below contains the preset LPS values.

Applicable units	Abnormal	Reset
R(Y)P71/100/125L	< -0.3 bar	> +0.5 bar

3

Troubleshooting

To troubleshoot, proceed as follows:



Tc(LP) = heat exchanger temp.
Ta indoor = indoor air temp.
Ta outdoor = outdoor air temp.
LP = low pressure
set value 1 = max. pressure
set value 2 = min. pressure
Refer to low pressure settings

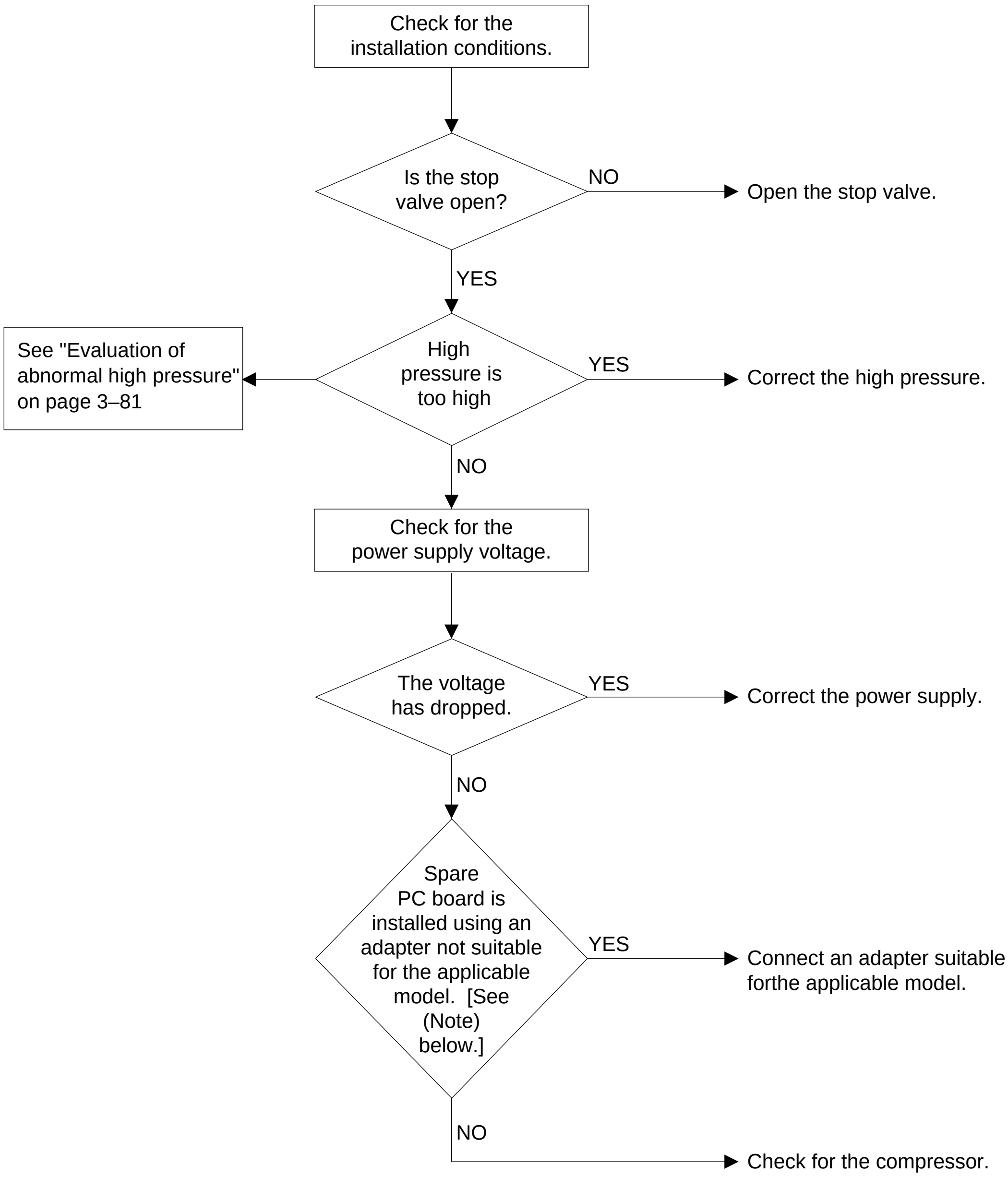
Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

3.6 Compressor Overcurrent (E6)

Remote Controller Display	E6
Method of Malfunction Detection	The input current value is detected with a current sensor.
Malfunction Decision Conditions	When the compressor input current exceeds the specified input current value. Refer "Approximate Input current value" on next page.
Possible Causes	➤ High pressure increased too high ➤ Voltage drop ➤ Failure to open the stop valve ➤ Faulty compressor (compressor lock)

Troubleshooting



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

Note

For details, refer to information in Section "Failure of PJ Capacity Setting".

Approximate Input current value:

		Input current value
RYP71L7V1	JT90FA-V1N	25.3
RYP71L7W1	JT90FA-YE	11.5
RYP100L7V1	JT125FA-V1N	38.0
RYP100L7W1	JT125FA-YE	11.5
RYP125L7W1	JT160FA-YE	15.0

3.7 Malfunctioning Electronic Expansion Valve (E9)

Error code E9

Error generation The error is generated when the following coil current condition is not met:

Open circuit < coil current < short circuit.

Resistance values The table below contains the reference resistance values.

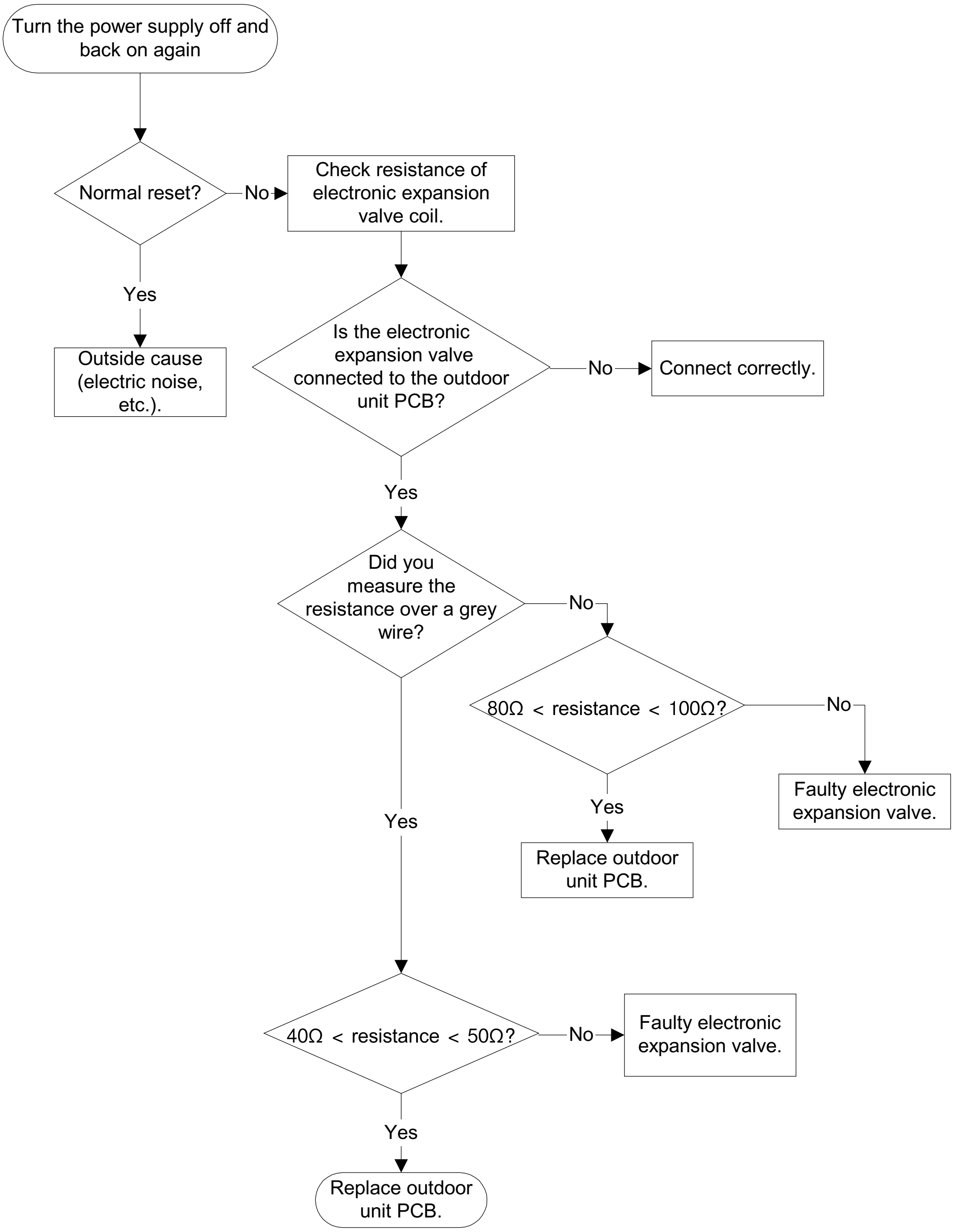
—	**Grey**	**Black**	**Yellow**	**Red**	**Orange**
Grey	—	40-50 Ω	40-50 Ω	40-50 Ω	40-50 Ω
Black	40-50 Ω	—	80-100 Ω	80-100 Ω	80-100 Ω
Yellow	40-50 Ω	80-100 Ω	—	80-100 Ω	80-100 Ω
Red	40-50 Ω	80-100 Ω	80-100 Ω	—	80-100 Ω
Orange	40-50 Ω	80-100 Ω	80-100 Ω	80-100 Ω	—

Causes The possible causes are:

- Malfunctioning electronic expansion valve
- Broken or disconnected electronic expansion valve harness
- Malfunctioning electronic expansion valve connector connection
- Malfunctioning outdoor unit PCB
- Outside cause (electric noise...).

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

3.8 Malfunctioning in Discharge Pipe Temperature (F3)

Error code

F3

Error generation

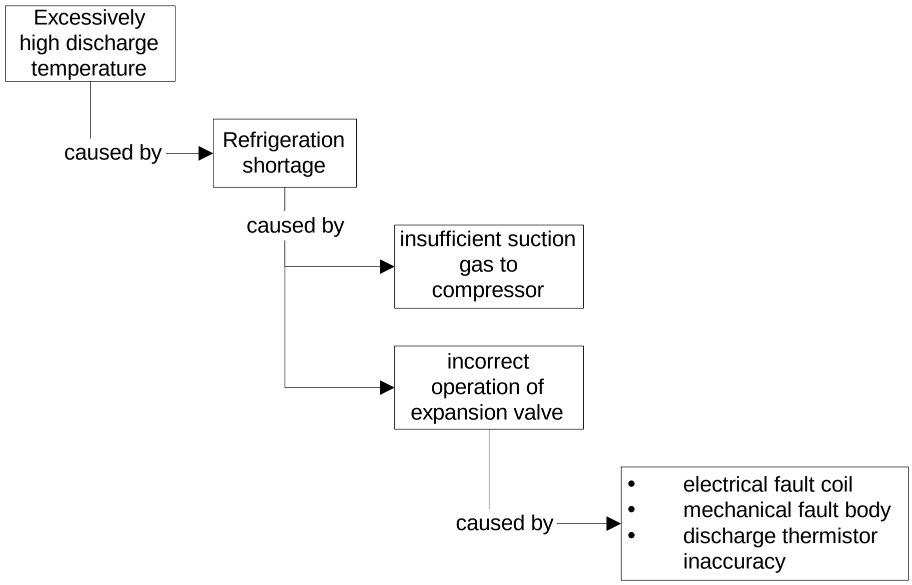
The error is generated when:

- ➤ Discharge pipe temperature becomes abnormally high
- ➤ Discharge pipe temperature rises suddenly
- ➤ Discharge pipe thermistor is not in its holder.

Causes

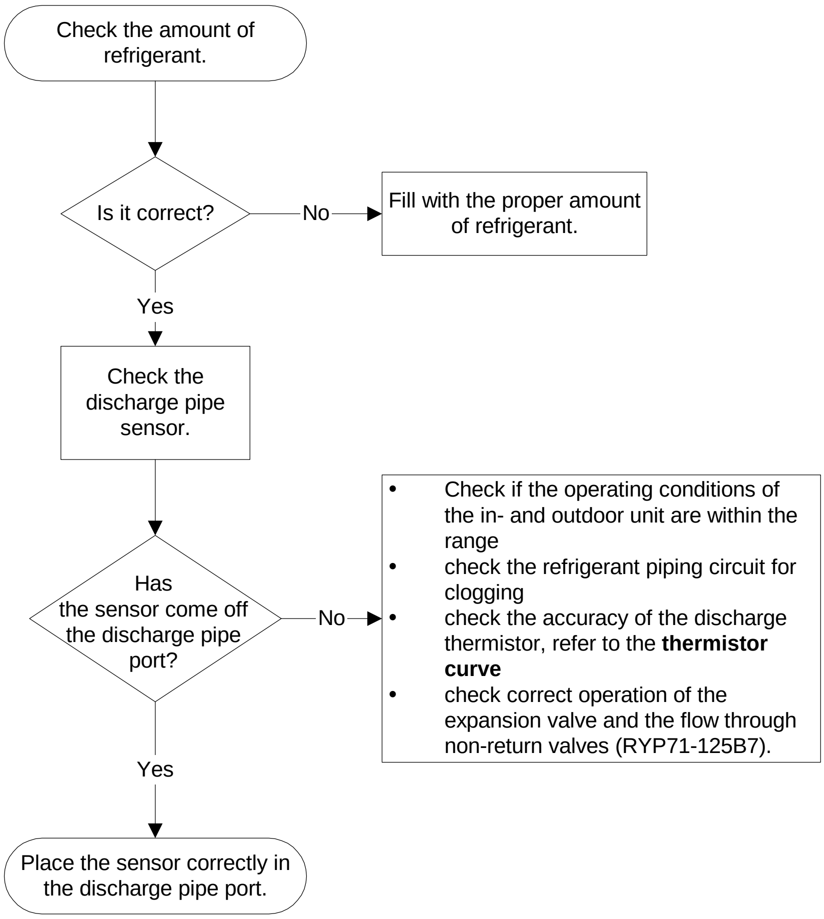
The possible causes are:

- ➤ Improper refrigerant amount
- ➤ Clogging refrigerant piping circuit
- ➤ Discharge temperature that is too low due to too much refrigerant or due to the discharge thermistor being out of its holder
- ➤ Discharge temperature that is too high. The possible causes are:
- ➤ Electronic expansion valve coil is disconnected from valve body



Troubleshooting

To troubleshoot, proceed as follows:



Thermistor curve

See page 3–80.

Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

3.9 Malfunctioning HPS (H3)

Error code

H3

Error generation

The error is generated when there is no continuity in the high-pressure switch during compressor OFF.

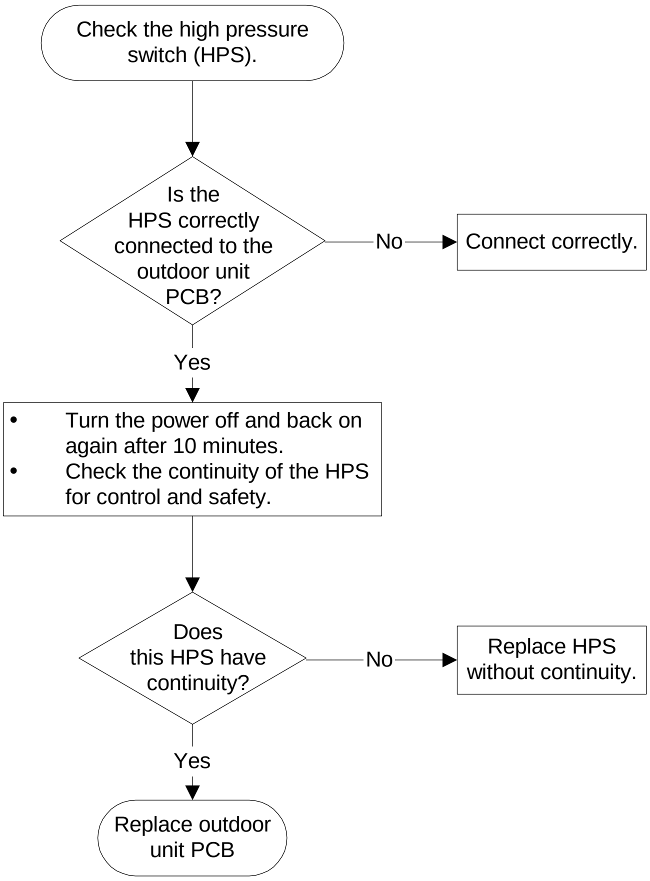
Causes

The possible causes are:

- ➤ Malfunctioning high-pressure switch
- ➤ Broken or disconnected high-pressure switch harness
- ➤ Malfunctioning high-pressure switch connector connection
- ➤ Malfunctioning outdoor unit PCB.

Troubleshooting

To troubleshoot, proceed as follows:



3.10 Malfunctioning Outdoor Thermistor System (H9)

Error code

H9

Error generation

The error is generated when the thermistor resistance is out of its range (60Ω to 600kΩ).

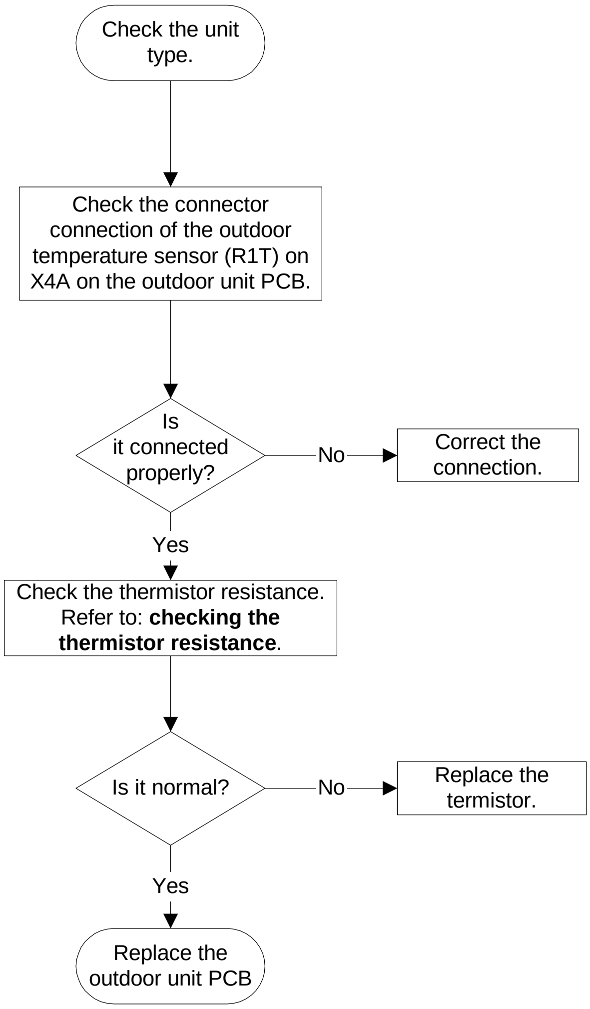
Causes

The possible causes are:

- Malfunctioning outdoor thermistor
- Malfunctioning outdoor thermistor connector connection
- Malfunctioning outdoor unit PCB.

Troubleshooting

To troubleshoot, proceed as follows:



Checking the thermistor resistance

See page 3–79.

3.11 Malfunctioning Discharge Pipe Thermistor System (J3)

Error code

J3

Error generation

The error is generated when the thermistor resistance is out of its range.

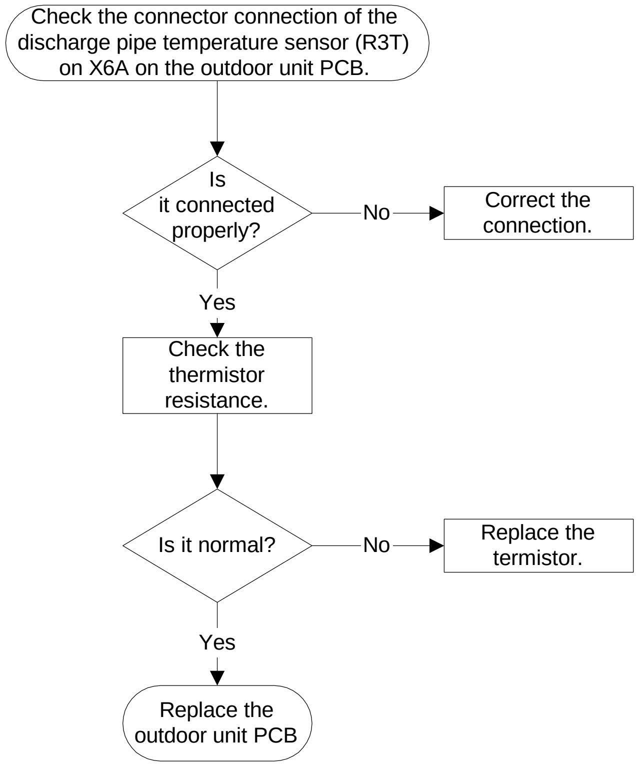
Causes

The possible causes are:

- ➤ Malfunctioning discharge pipe thermistor
- ➤ Malfunctioning discharge pipe thermistor connector connection
- ➤ Malfunctioning outdoor unit PCB.

Troubleshooting

To troubleshoot, proceed as follows:



3.12 Malfunctioning Heat Exchanger Thermistor System (J6)

Error code

J6

Error generation

The error is generated when the thermistor resistance is out of its range.

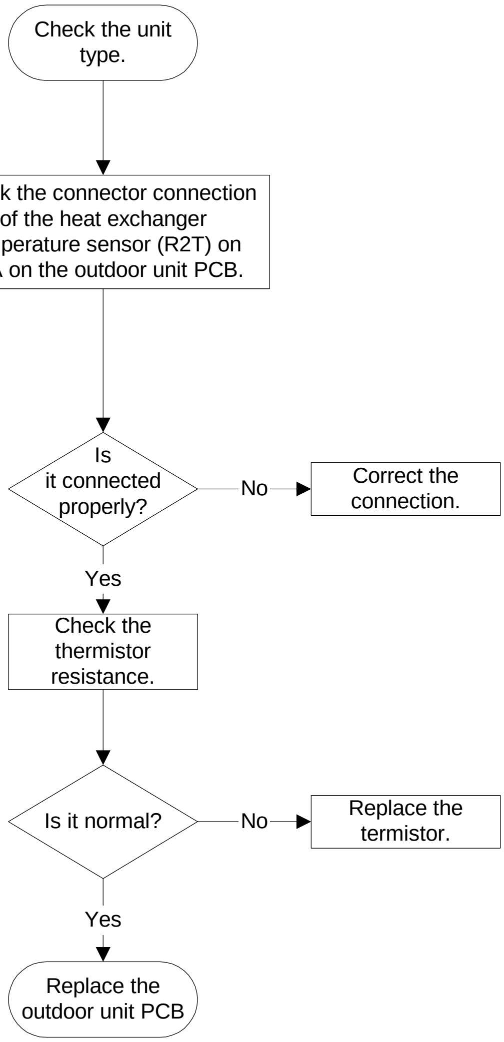
Causes

The possible causes are:

- Malfunctioning heat exchanger thermistor
- Malfunctioning heat exchanger thermistor connector connection
- Malfunctioning outdoor unit PCB.

Troubleshooting

To troubleshoot, proceed as follows:



3.13 Abnormal Heat Exchanging Temperature (F6)

Remote Controller Display

F6

Method of Malfunction Detection

The high pressure control (stop) is made according to temperature detected with outdoor unit heat exchanging thermistor in cooling operation or indoor unit heat exchanging thermistor in heating operation.

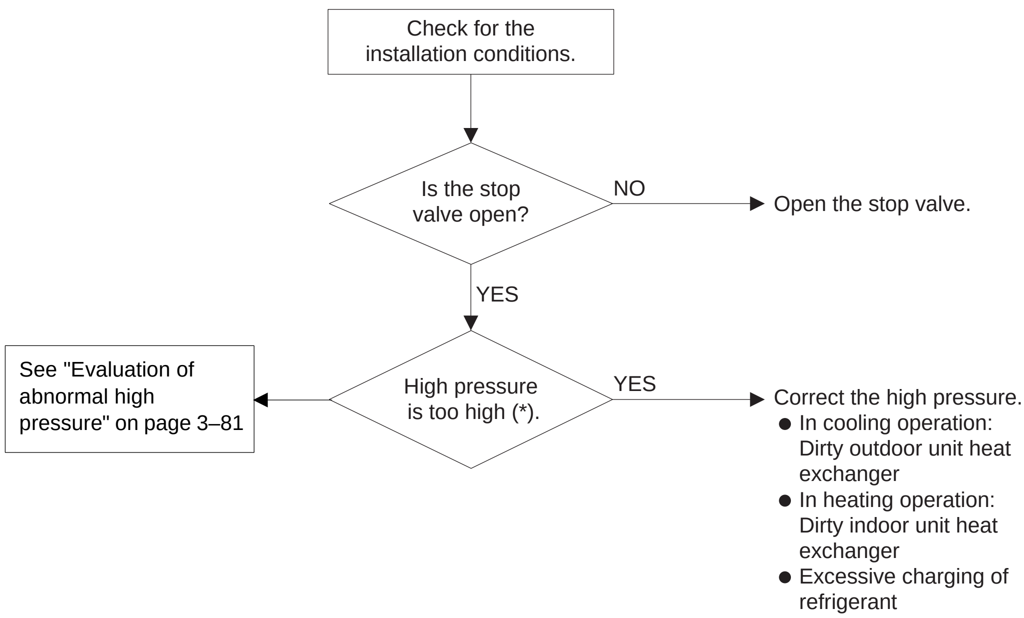
Malfunction Decision Conditions

When the outdoor unit heat exchanging temperature in cooling operation or the indoor unit heat exchanging temperature in heating operation exceeds a rated value. (Refer to information in Part 7 "Function and Operation".)

Possible Causes

- ➤ Clogged indoor unit suction filter (in heating operation)
- ➤ Dirty outdoor unit heat exchanger
- ➤ Faulty outdoor unit fan
- ➤ Excessive charging of refrigerant
- ➤ Failure to open the stop valve

Troubleshooting



* See "Evaluation of abnormal high pressure" on page 81

3.14 Malfunction of Current Sensor System (J2)

Remote Controller Display

J2

Method of Malfunction Detection

The malfunction of current sensor is detected through the current detected with the current sensor.

Malfunction Decision Conditions

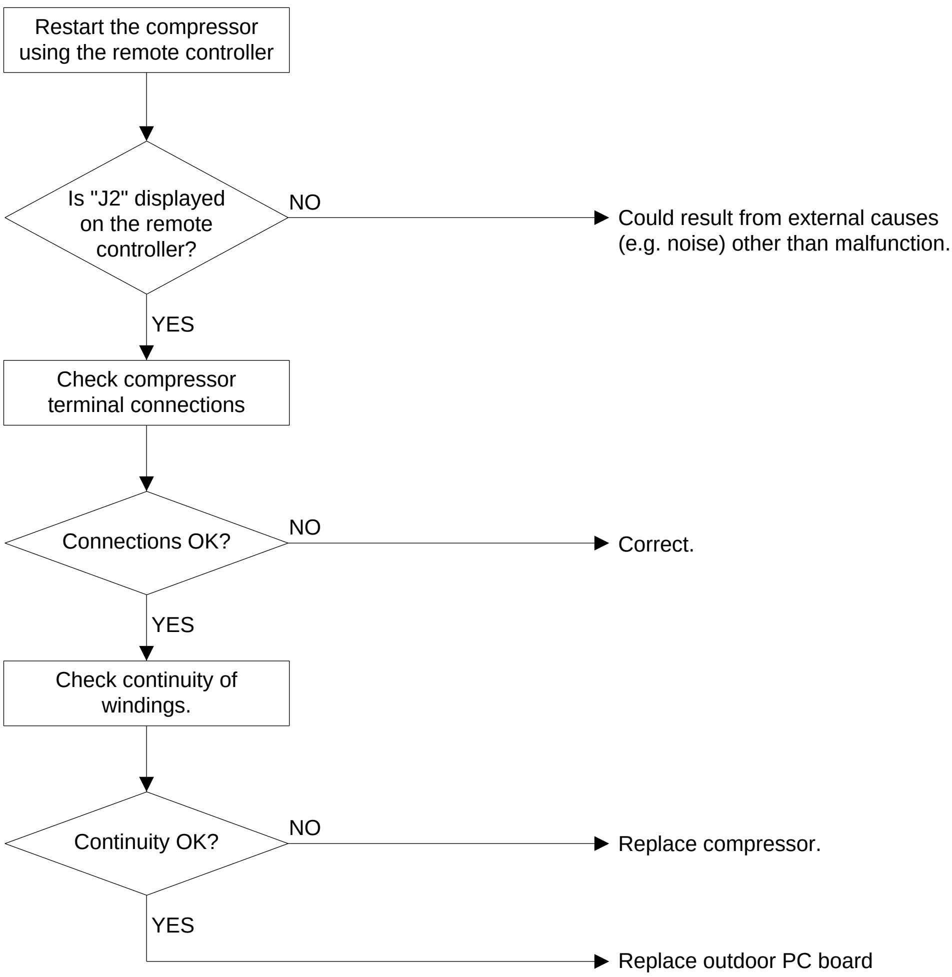
While in operation:
When the current detected with the current sensor is not more than a constant value.

While in stopping:
When the current detected with the current sensor is not less than a constant value.

Possible Causes

- ➤ Faulty current sensor
- ➤ Faulty outdoor unit PC board
- ➤ Disconnected compressor

Troubleshooting



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

3.15 Failure of Capacity Setting (PJ)

Remote Controller Display

PJ

Method of Malfunction Detection

Check whether set value (i.e., factory set value) written in E^2PROM or set value with the (replaced) capacity setting adapter (X26A) is the same as that of outdoor unit capacity.

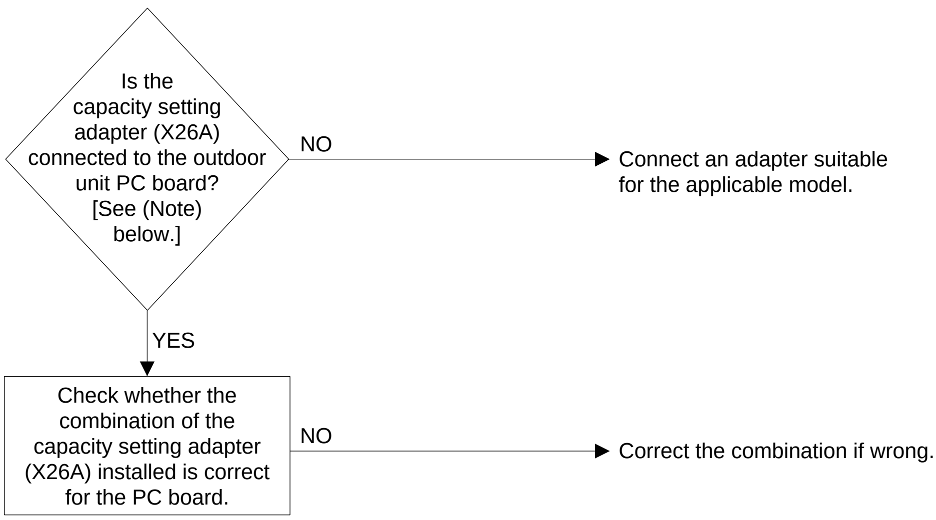
Malfunction Decision Conditions

When the set value with the E^2PROM differs from that of the outdoor unit capacity or any capacity setting adapter other than that suitable for the applicable PC board is installed. (However, the failure decision is made only when the power supply is turned on.)

Possible Causes

- Improper set value with E^2PROM
- Improper capacity setting adapter installed
- Faulty outdoor unit PC board

Troubleshooting



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

Notes

- The capacity setting adapter is not connected at the time of shipment from factory. (The capacity is written in the E^2PROM.) This capacity setting adapter is required only when the PC board is replaced with a spare PC board.
- Refer to instructions on how to set Sky-Air L- series Spare Part outdoor PC board on page 4-20.

4 Error Codes: System Malfunctions

4.1 What Is in This Chapter?

Introduction

In the first stage of the troubleshooting sequence, it is important to correctly interpret the error code on the remote controller display. The error code helps you to find the cause of the problem.

Overview

This chapter contains the following topics:

3

4.2 Gas Shortage Detection (U0)

Error code

U0

Error method

The discharge pipe thermistor detects the malfunction temperature at which there can be a gas shortage. If the discharge temperature exceeds 125°C during more than 20 s, the outdoor unit will stop and retry when the guard timer is OFF (3 min have passed).

During the retrial, the expansion valve will be opened 90 pulses more than in case of the previous start. When the unit restarts with a fully opened expansion valve, the remote controller displays “U0” after pressing the test button.

Error generation

The error is generated when the microcomputer detects gas shortage. However, the unit can still operate.

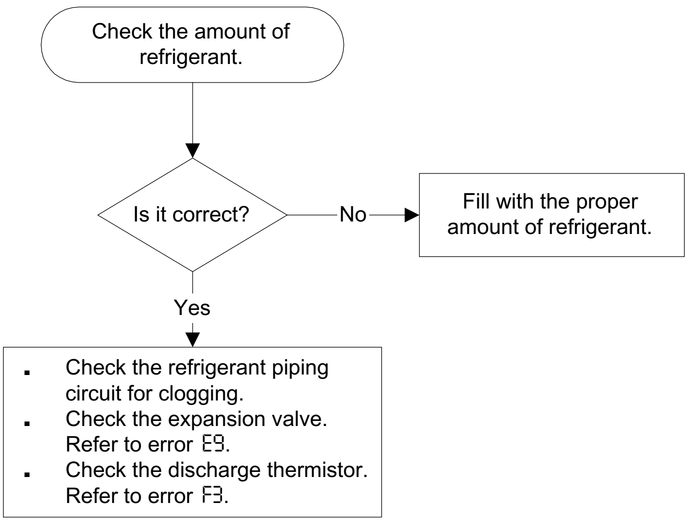
Causes

The possible causes are:

- ➤ Refrigerant shortage
- ➤ Clogging of the refrigerant piping circuit.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

4.3 Reverse Phase (U1)

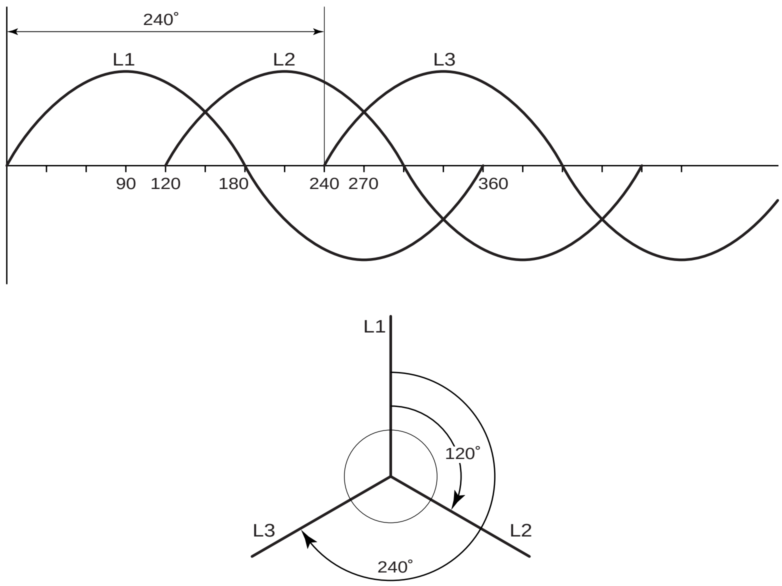
Error code

U1

This error code is only for 3-phase equipment.

Error generation

The error is generated when the difference between phase L1 and L3 is not 240°. The illustration below shows the 3-phase network.



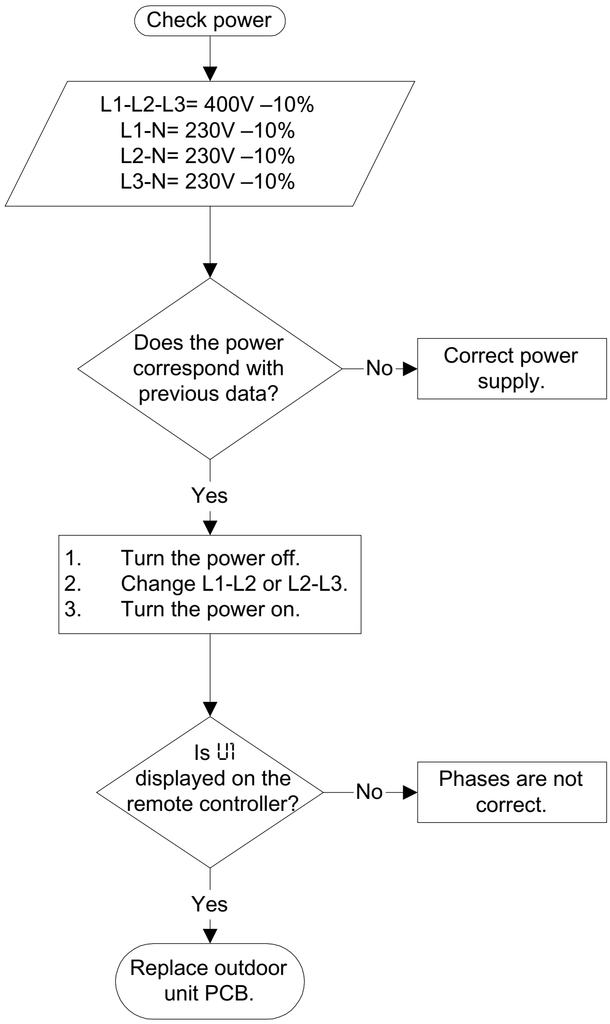
Causes

The possible causes are:

- ➤ Malfunctioning power supply wiring connection
- ➤ Broken or disconnected power supply wiring
- ➤ Malfunctioning outdoor unit PCB

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

4.4 Transmission Error between Indoor and Outdoor Unit (U4 or UF)

Error code

U4 or UF

Error generation

The error is generated when the microprocessor detects that the transmission between the indoor and the outdoor unit is not normal over a certain amount of time.

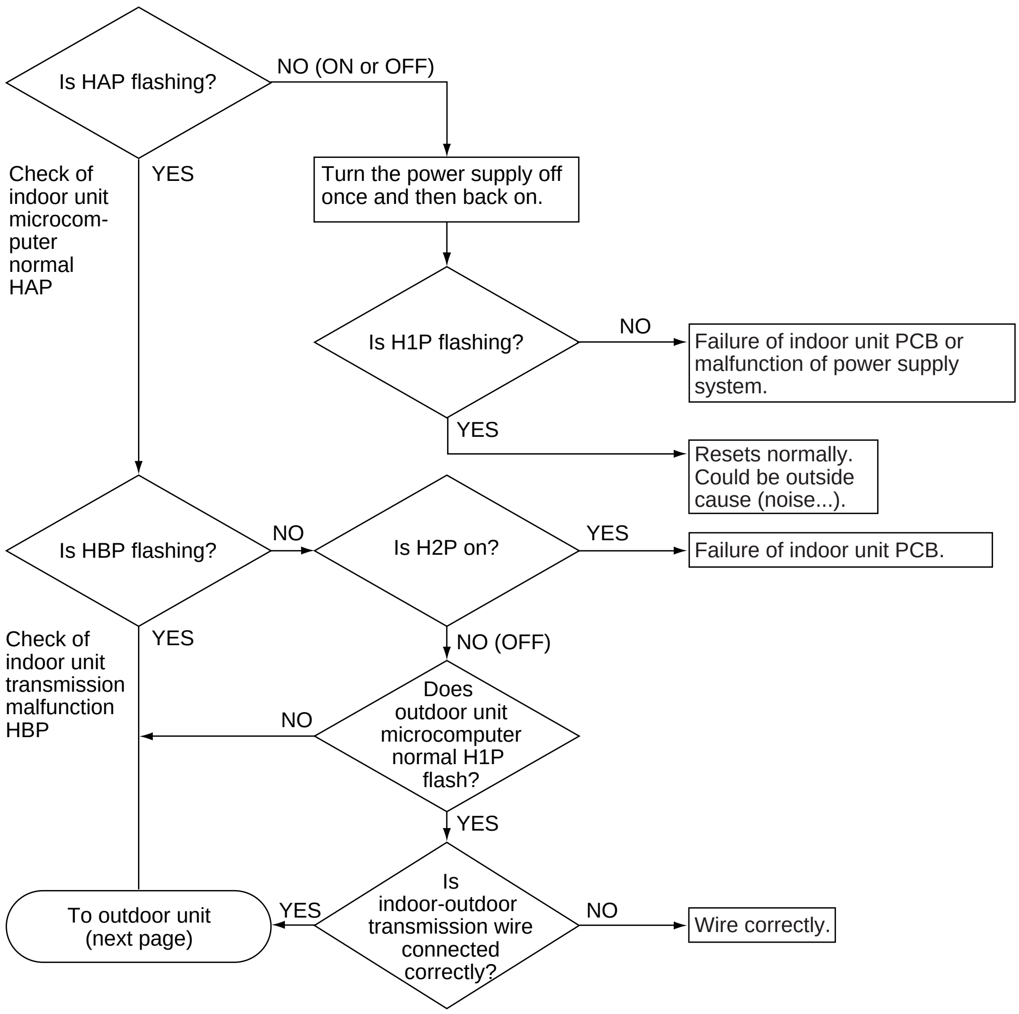
Causes

The possible causes are:

- ➤ Wiring indoor-outdoor transmission wire is incorrect
- ➤ Malfunctioning indoor unit PCB
- ➤ Malfunctioning outdoor unit PCB
- ➤ Outside cause (noise...).

Troubleshooting 1

Diagnosis of incorrect or broken/disconnected wiring. If the LEDs on the indoor unit PC board are off, it indicates that the transmission wiring between indoor and outdoor units may be incorrect or broken/disconnected.:

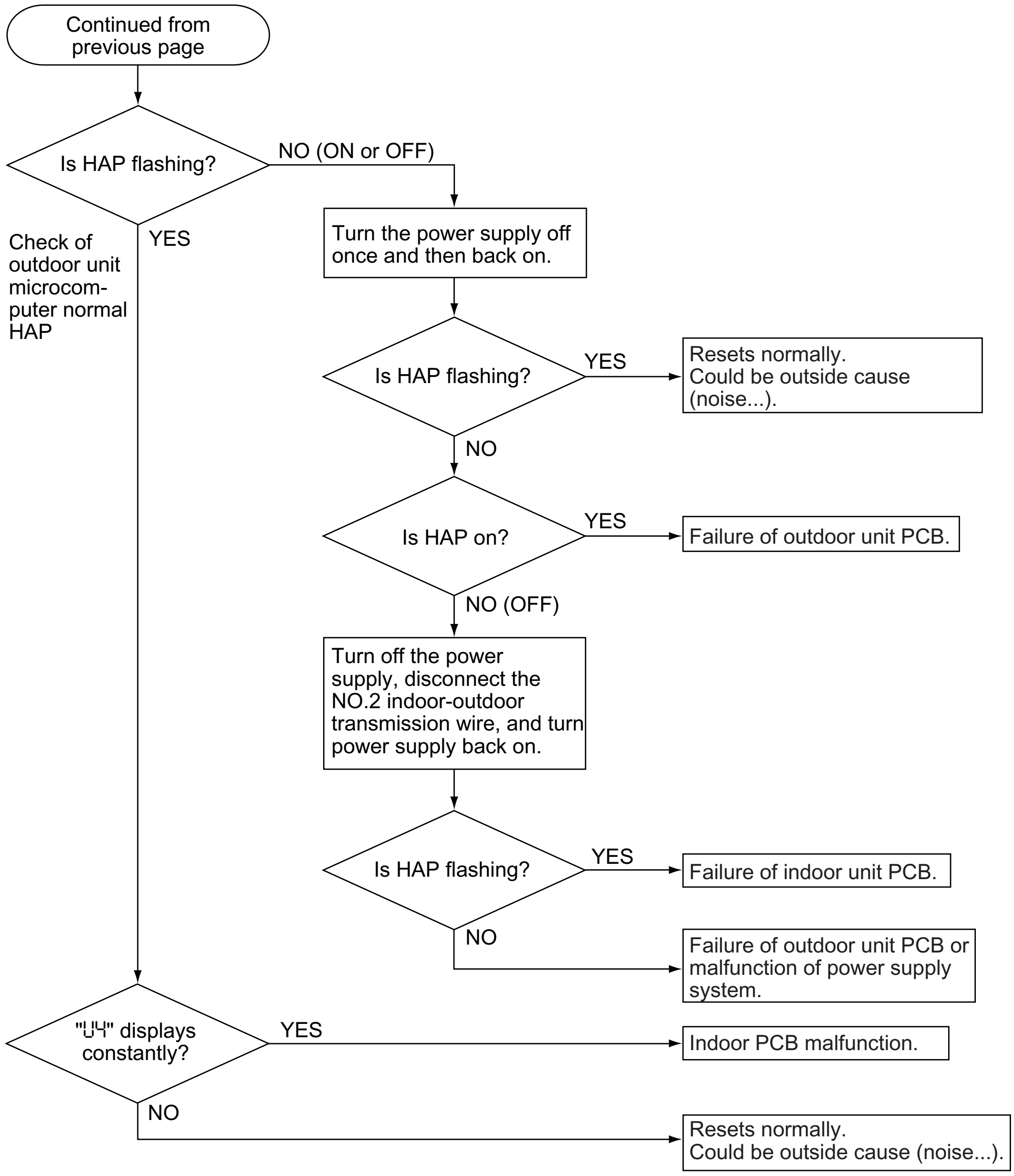


Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

Troubleshooting 2

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

4.5 Transmission Error between Indoor Unit and Remote Controller (U5)

Error code

U5

Error generation

The error is generated when the microprocessor detects that the transmission between the indoor unit and the remote controller is not normal over a certain amount of time.

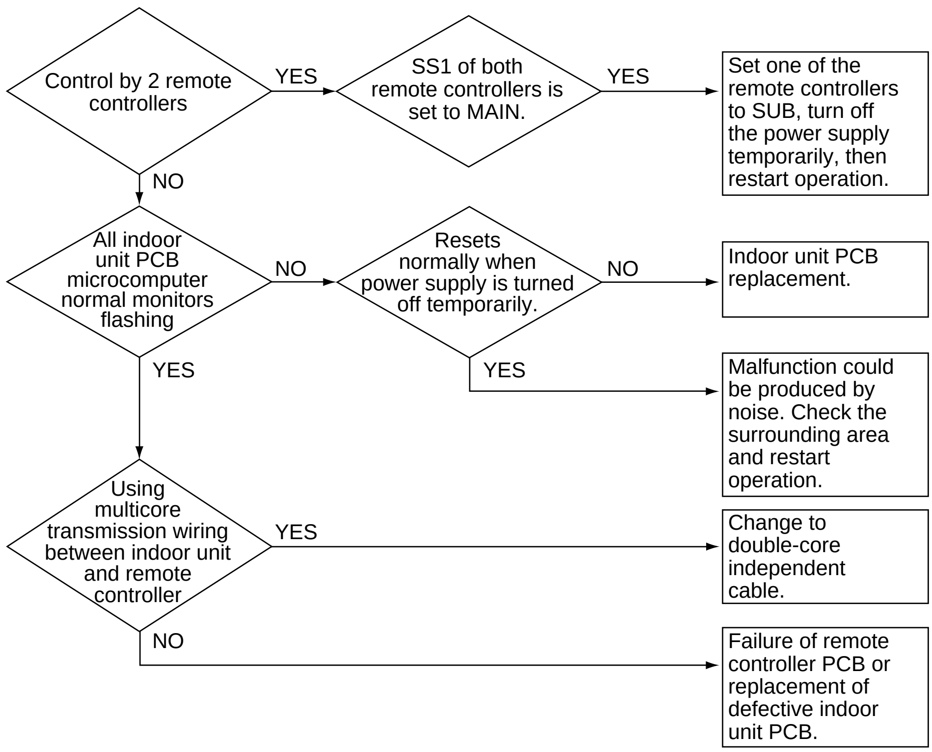
Causes

The possible causes are:

- ➤ Malfunctioning remote controller
- ➤ Malfunctioning indoor PCB
- ➤ Outside cause (noise...)
- ➤ Connection of two master remote controllers (when using two remote controllers).

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

4.6 Transmission Error between MAIN Remote Controller and SUB Remote Controller (U8)

Error code

U8

Error generation

The error is generated when, in case of controlling with two remote controllers, the microprocessor detects that the transmission between the indoor unit and the remote controllers (MAIN and SUB) is not normal over a certain amount of time.

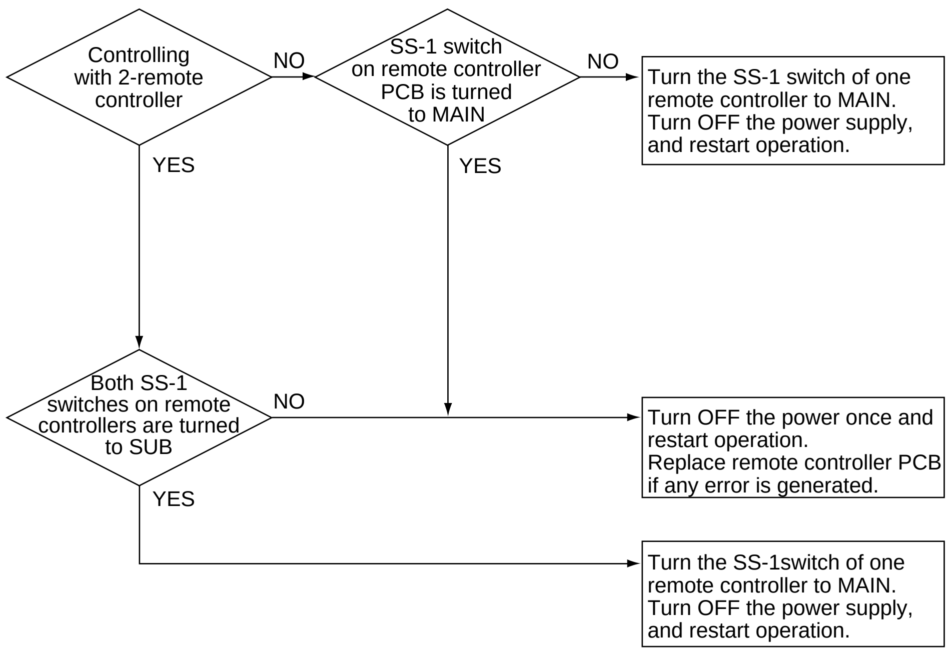
Causes

The possible causes are:

- ➤ Transmission error between MAIN remote controller and SUB remote controller
- ➤ Connection among SUB remote controllers
- ➤ Malfunctioning remote controller PCB.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

4.7 Malfunctioning Field Setting Switch (UA)

Error code

UA

Error generation

The error is generated when incorrect field settings have been set for pair/twin/triple/double twin.

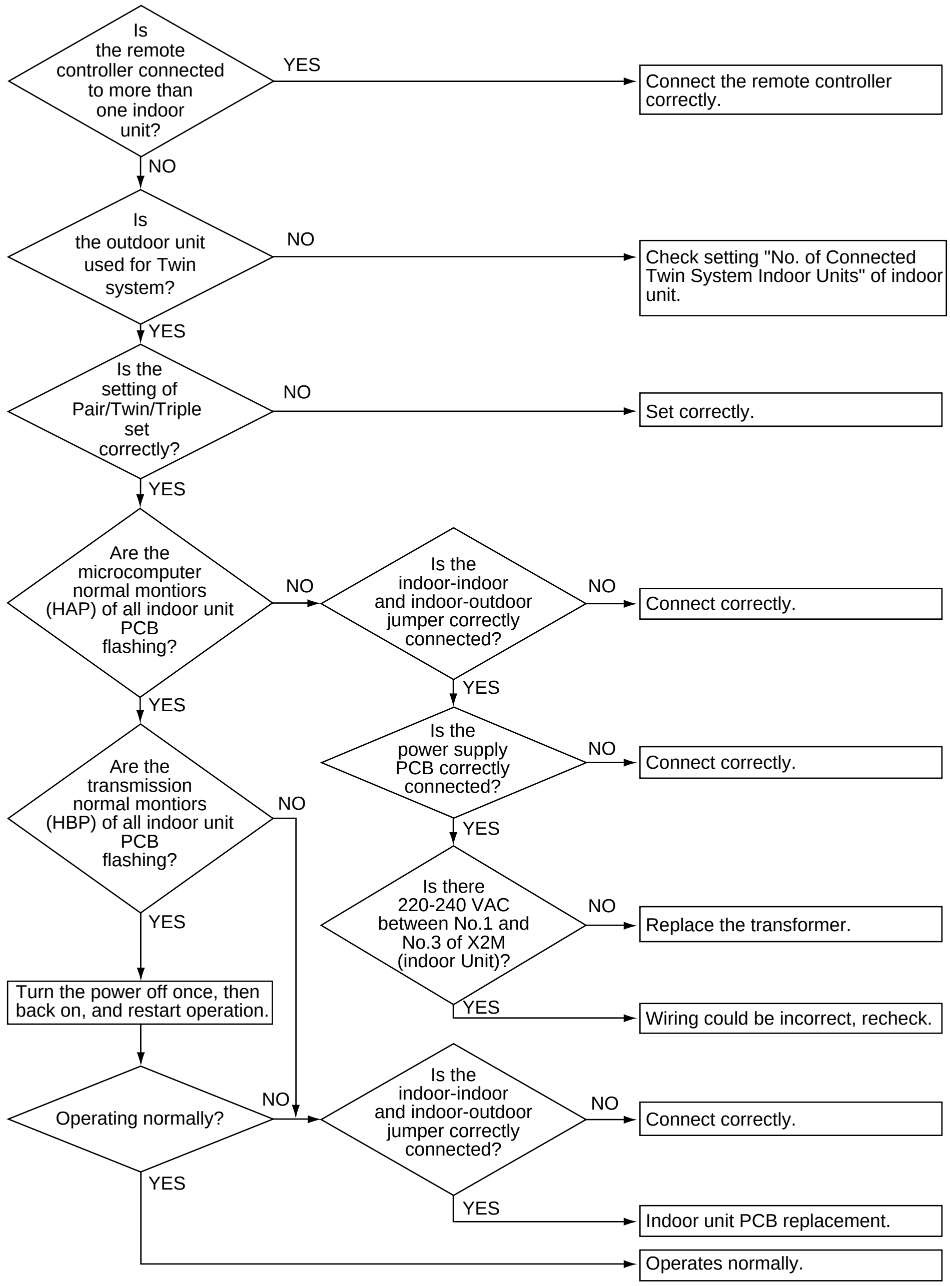
Causes

The possible causes are:

- Malfunctioning indoor or outdoor unit PCB
- Malfunctioning power supply PCB
- Indoor-outdoor, indoor-indoor unit transmission wiring
- Malfunctioning remote controller wiring.

Troubleshooting

To troubleshoot, proceed as follows:



Caution

Be sure to turn off power switch before connecting or disconnecting the connector, or parts damage may occur.

5 Additional Checks for Troubleshooting

5.1 What Is in This Chapter?

Introduction

This chapter explains how you must check the units to carry out troubleshooting correctly.

Overview

This chapter contains the following topics:

5.2 Indoor Unit: Checking the Fan Motor Hall IC

Applicable units

Units using phase cut controlled fan motor with feedback signal.

Checking

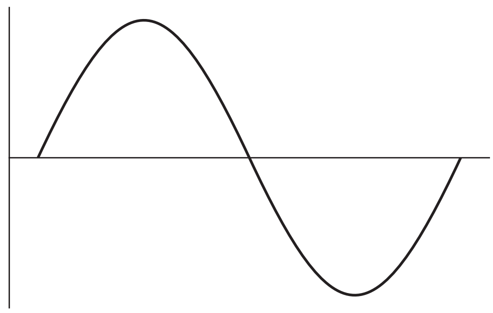
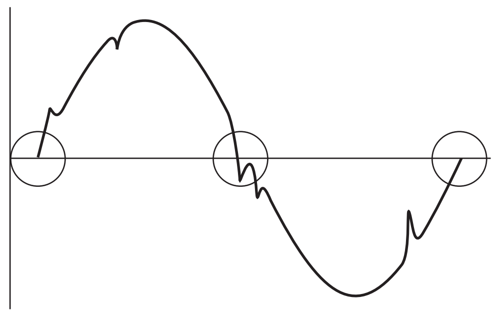
To check the indoor unit fan motor hall IC, proceed as follows:

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Make sure connector S7 on PCB 1 is properly connected.</td></tr>
<tr><td>2</td><td>Make sure the power is ON and that there is no operation.</td></tr>
<tr><td>3</td><td>Measure the voltage between pin 1 and 3 of S7.</td></tr>
<tr><td>4</td><td>Turn the fan one rotation with your hand and measure the generated pulses.</td></tr>
<tr><td>5</td><td>Proceed as follows:
<table>
<tr><th>If...</th><th>Then...</th></tr>
<tr><td>The measured voltage between pin 1 and 3 does not equal 5 V</td><td>Replace the PCB 1.</td></tr>
<tr><td>The generated pulses do not equal 3 pulses between pin 2 and 3</td><td>Replace the fan motor.</td></tr>
<tr><td>The measured voltage does not equal 5 V and the generated pulses do not equal 3 pulses between pin 2 and 3</td><td>Replace the PCB 1.</td></tr>
</table>
</td></tr>
</table>

5.3 Indoor Unit: Checking the Power Supply Wave Form

Checking

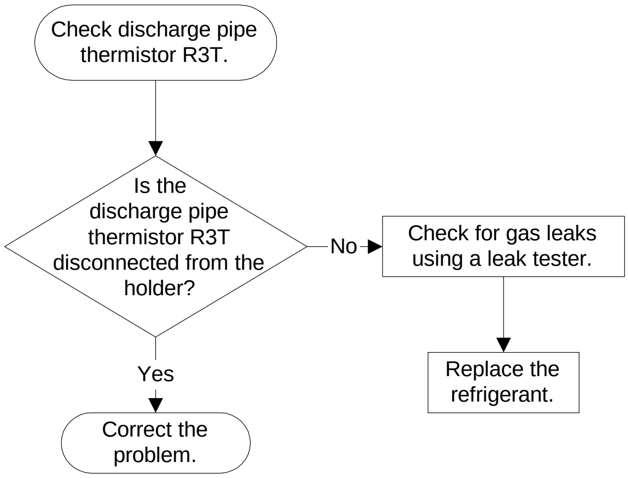
To check the power supply wave form, proceed as follows:

Step	Action
1	Measure the power supply wave form between pin 1 and 3 of X1M for the outdoor units or between pin 1 and 3 of X2M for the indoor units.
2	Check whether the power supply wave form is a sine wave: 
3	Check whether there is wave form disturbance near the zero cross: 
4	Adjust the supply voltage.

5.4 Outdoor Unit: Checking the Refrigerant System

Checking

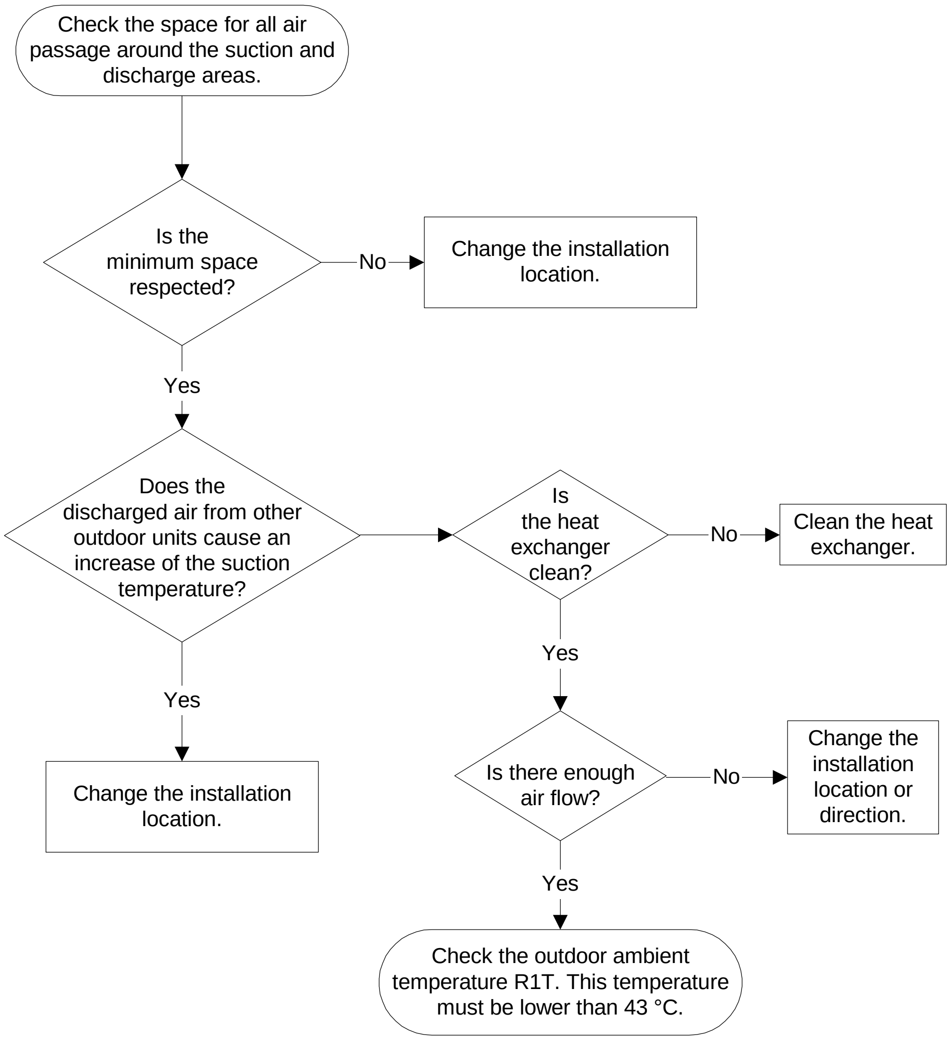
To check the refrigerant system, proceed as follows:



5.5 Outdoor unit: Checking the Installation Condition

Checking

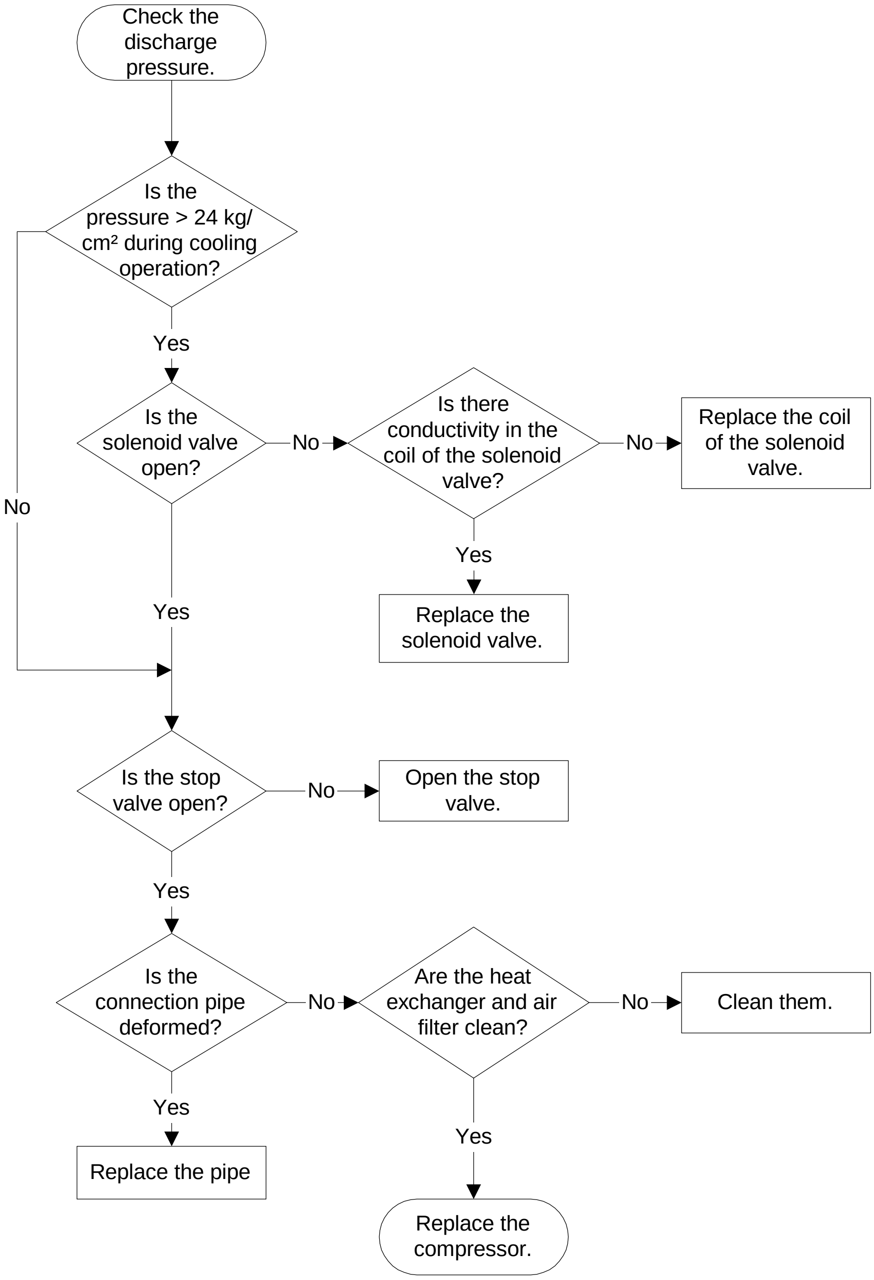
To check the installation condition, proceed as follows:



5.6 Outdoor Unit: Checking the Discharge Pressure

Checking

To check the discharge pressure, proceed as follows:



5.7 Outdoor Unit: Checking the Expansion Valve

Checking

To check the electronic expansion valve, proceed as follows:

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Check if the expansion valve connector is correctly inserted in the X24A of PCB 1.</td></tr>
<tr><td>2</td><td>Compare the expansion valve unit with the number of the connector to make sure it is correctly connected.</td></tr>
<tr><td>3</td><td>Switch the power OFF.</td></tr>
<tr><td>4</td><td>Switch the power ON to check whether the expansion valve is producing a clicking sound.
<table>
<tr><th>If...</th><th>Then...</th></tr>
<tr><td>The expansion valve has no clicking sound</td><td>Disconnect the valve connector without the clicking sound and proceed to step 5.</td></tr>
</table></td></tr>
<tr><td>5</td><td>Check the coil current: Open circuit < normal < short circuit
The table below contains the reference resistance values.
<table>
<tr><th>—</th><th>Grey</th><th>Black</th><th>Yellow</th><th>Red</th><th>Orange</th></tr>
<tr><td>Grey</td><td>—</td><td>40-50 Ω</td><td>40-50 Ω</td><td>40-50 Ω</td><td>40-50 Ω</td></tr>
<tr><td>Black</td><td>40-50 Ω</td><td>—</td><td>80-100 Ω</td><td>80-100 Ω</td><td>80-100 Ω</td></tr>
<tr><td>Yellow</td><td>40-50 Ω</td><td>80-100 Ω</td><td>—</td><td>80-100 Ω</td><td>80-100 Ω</td></tr>
<tr><td>Red</td><td>40-50 Ω</td><td>80-100 Ω</td><td>80-100 Ω</td><td>—</td><td>80-100 Ω</td></tr>
<tr><td>Orange</td><td>40-50 Ω</td><td>80-100 Ω</td><td>80-100 Ω</td><td>80-100 Ω</td><td>—</td></tr>
</table></td></tr>
<tr><td>6</td><td>Check the clicking sound again.
<table>
<tr><th>If...</th><th>Then...</th></tr>
<tr><td>There is a clicking sound</td><td>The expansion valve works properly.</td></tr>
<tr><td>There is no clicking sound</td><td>Replace the expansion valve unit.</td></tr>
<tr><td>There is still no clicking sound</td><td>Replace outdoor PCB 1.</td></tr>
</table></td></tr>
</table>

5.8 Checking the Thermistors

Thermistors

If the cause of the problem is related to the thermistors, then the thermistors should be checked prior to changing the PCB.

For more information about these thermistors, see:

- ’Wiring Diagrams: Outdoor Units’
- ‘Wiring Diagrams: Indoor Units’
- "Functions of Thermistors" on page 4.

Overview of thermistors

The table below contains an overview of the thermistors:

Thermistor		Description
Indoor	R1T	Suction air thermistor
	R2T	Heat exchanger thermistor (coil thermistor)
Outdoor	R1T	Ambient air thermistor
	R2T	Heat exchanger thermistor (coil thermistor)
	R3T	Discharge pipe thermistor

Checking

To check the thermistors, proceed as follows:

Step	Action
1	Disconnect the thermistor from the PCB.
2	Read the temperature and the resistor value.
3	Check if the measured values correspond with the values in the table on the next pages.

5.9 R1T and R2T

Temperature – resistance

The table below is the thermistor (R1T and R2T) temperature – resistance conversion table.

Temp. (°C)	R1T (kΩ)	R2T (kΩ)
-20	197.81	192.08
-19	186.53	181.16
-18	175.97	170.94
-17	166.07	161.36
-16	156.80	152.38
-15	148.10	143.96
-14	139.94	136.05
-13	132.28	128.63
-12	125.09	121.66
-11	118.34	115.12
-10	111.99	108.96
-9	106.03	103.18
-8	100.41	97.73
-7	95.14	92.61
-6	90.17	87.79
-5	85.49	83.25
-4	81.08	78.97
-3	76.93	74.94
-2	73.01	71.14
-1	69.32	67.56
0	65.84	64.17
1	62.54	60.96
2	59.43	57.94
3	56.49	55.08
4	53.71	52.38
5	51.09	49.83
6	48.61	47.42
7	46.26	45.14
8	44.05	42.98
9	41.95	40.94
10	39.96	39.01
11	38.08	37.18
12	36.30	35.45
13	34.62	33.81
14	33.02	32.25
15	31.50	30.77
16	30.06	29.37
17	28.70	28.05
18	27.41	26.78
19	26.18	25.59

Temp. (°C)	R1T (kΩ)	R2T (kΩ)
20	25.01	24.45
21	23.91	23.37
22	22.85	22.35
23	21.85	21.37
24	20.90	20.45
25	20.00	19.56
26	19.14	18.73
27	18.32	17.93
28	17.54	17.17
29	16.80	16.45
30	16.10	15.76
31	15.43	15.10
32	14.79	14.48
33	14.18	13.88
34	13.59	13.31
35	13.04	12.77
36	12.51	12.25
37	12.01	11.76
38	11.52	11.29
39	11.06	10.84
40	10.63	10.41
41	10.21	10.00
42	9.81	9.61
43	9.42	9.24
44	9.06	8.88
45	8.71	8.54
46	8.37	8.21
47	8.05	7.90
48	7.75	7.60
49	7.46	7.31
50	7.18	7.04
51	6.91	6.78
52	6.65	6.53
53	6.41	6.53
54	6.65	6.53
55	6.41	6.29
56	6.18	6.06
57	5.95	5.84
58	5.74	5.43
59	5.14	5.05

Temp. (°C)	R1T (kΩ)	R2T (kΩ)
60	4.96	4.87
61	4.79	4.70
62	4.62	4.54
63	4.46	4.38
64	4.30	4.23
65	4.16	4.08
66	4.01	3.94
67	3.88	3.81
68	3.75	3.68
69	3.62	3.56
70	3.50	3.44
71	3.38	3.32
72	3.27	3.21
73	3.16	3.11
74	3.06	3.01
75	2.96	2.91
76	2.86	2.82
77	2.77	2.72
78	2.68	2.64
79	2.60	2.55
80	2.51	2.47
—		

5.10 R3T

Temperature – resistance

The table below is the thermistor (R3T) temperature – resistance conversion table.

Temp. (°C)	Resist. (kΩ)
—	—
—	—
-6.0	1120.0
-4.0	1002.5
-2.0	898.6
0.0	806.5
2.0	724.8
4.0	652.2
6.0	587.6
8.0	530.1
10.0	478.8
12.0	432.9
14.0	392.0
16.0	355.3
18.0	322.4
20.0	292.9
22.0	266.3
24.0	242.5
26.0	221.0
28.0	201.6
30.0	184.1
32.0	168.3
34.0	154.0
36.0	141.0
38.0	129.3
40.0	118.7
42.0	109.0
44.0	100.2
46.0	92.2
48.0	84.9
50.0	78.3
52.0	72.2
54.0	66.7
56.0	61.6
48.0	57.0

Temp. (°C)	Resist. (kΩ)
60.0	52.8
62.0	48.9
64.0	45.3
66.0	42.0
68.0	39.0
70.0	36.3
72.0	33.7
74.0	31.4
76.0	29.2
78.0	27.2
80.0	25.4
82.0	23.7
—	—
—	—
—	—
—	—
92.0	16.9
94.0	15.8
96.0	14.8
98.0	13.9
100.0	13.1
102.0	12.3
104.0	11.5
106.0	10.8
108.0	10.2
110.0	9.6
112.0	9.0
114.0	8.5
116.0	8.0
118.0	7.6
120.0	7.1
122.0	6.7
124.0	6.4
126.0	6.0
128.0	5.7

Temp. (°C)	Resist. (kΩ)
130.0	5.4
132.0	5.4
134.0	4.8
136.0	4.6
138.0	4.3
140.0	4.1
142.0	3.9
144.0	3.7
146.0	3.5
148.0	3.3
150.0	3.2
152.0	3.0
154.0	2.9
156.0	2.7
158.0	2.6
160.0	2.5
162.0	2.3
164.0	2.5
166.0	2.1
168.0	2.0
170.0	1.9
172.0	1.9
174.0	1.8
176.0	1.7
178.0	1.6
180.0	1.5
—	

5.11 Evaluation of abnormal high pressure

Abnormally high pressure level is mostly caused by the condenser side. The following contents are provided by service engineer based on their field checks. Further, the number is listed in the order of degree of influence.

In cooling operation

Check items (Possible causes)	Judgment
Does the outdoor unit fan run normally?	Visual inspection
Is the outdoor unit heat exchanger clogged?	Visual inspection
Is there clogging before or after the EV (capillary)?	Check if there is a temperature difference before and after EV (capillary). Check if the main valve unit of EV operates (by noise, vibration).
Is the check valve clogged? *Heat pump model only	Check if there is a temperature difference before and after check valve. --> If YES, the check valve is caught.
Is the HPS normal?	Check continuity by using a tester.
Is the outdoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is the piping length 5 meters or less?	Visual inspection
Does air enter the refrigerant system?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.
Is the refrigerant overcharged?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

In heating operation

Check items (Possible causes)	Judgment
Does the indoor unit fan run normally?	Visual inspection
Is the indoor unit heat exchanger clogged?	Visual inspection
Is the indoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is there clogging before or after the EV (capillary)?	Check if there is a temperature difference before and after EV (capillary). Check if the main valve unit of EV operates (by noise, vibration).
Is the check valve clogged?	Check if there is a temperature difference before and after check valve. --> If YES, the check valve is caught.
Is the HPS normal?	Check continuity using a tester.
Is the piping length 5 meters or less?	Visual inspection
Does air enter the refrigerant system?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.
Is the refrigerant overcharged?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

5.12 Evaluation of abnormal low pressure

Abnormally low pressure level is mostly caused by the evaporator side. The following contents are provided based on field checking of service engineer. Further, the number is listed in the order of degree of influence.

In cooling operation

Check items (Possible causes)	Judgment
Does the outdoor unit fan run normally?	Visual inspection
Is the indoor unit filter clogged?	Visual inspection
Is there clogging before or after the EV (capillary)?	Check if there is a temperature difference before and after EV (capillary). Check if the main valve unit of EV operates (by noise, vibration).
Is the check valve clogged? *Heat pump model only	Check if there is a temperature difference before and after check valve. -> If YES, the check valve is caught.
Is the LPS normal?	Check continuity using a tester.
Is the indoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is the refrigerant gas short?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

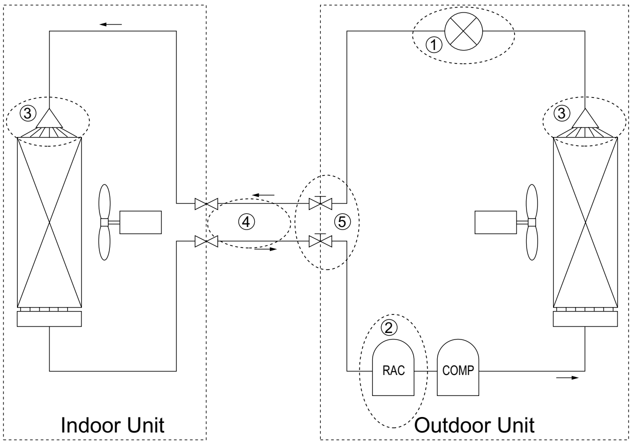
In heating operation

Check items (Possible causes)	Judgment
Does the outdoor unit fan run normally?	Visual inspection
Is the outdoor unit heat exchanger clogged?	Visual inspection
Is the outdoor unit installed under such conditions that short circuit easily occurs?	Visual inspection
Is there clogging before or after the EV (capillary)?	Check if there is a temperature difference before and after EV (capillary). Check if the main valve unit of EV operates (by noise, vibration).
Is the check valve clogged?	Check if there is a temperature difference before and after check valve. --> If YES, the check valve is caught.
Is the LPS normal?	Check continuity using a tester.
Is the refrigerant gas short?	Conduct refrigerant collection and vacuum drying, and then add proper amount refrigerant.

5.13 Check for Clogged Points

Checks

Temperature differences must occur before or after the clogged points!



Check points		Check factor	Causes	Remedies
1	Around expansion mechanism	Temperature difference	➤ Dust ➤ Choked moisture ➤ Reduced effective pipe diameter due to adherent contamination, etc.	Replace the expansion valve.
2	Accumulator	Frosting	➤ Choked moisture	Blow a nitrogen gas, and then replace the refrigerant.
3	Distributor	Temperature difference	➤ Dust ➤ Choked moisture ➤ Reduced effective pipe diameter due to adherent contamination, etc.	Replace the heat exchanger or distributor.
4	Field piping	Temperature difference	➤ Collapsed pipe	Replace the pipe.
5	Stop valve	Temperature difference	➤ The stop valve is not fully open.	Open the stop valve fully.

Part 4
Commissioning and Test Run

What is in this part?

This part contains the following chapters:

4

1 Pre-Test Run Checks

1.1 What Is in This Chapter?

Introduction

This chapter contains the following information:

- Checks before test run
- Test run checks
- Setting the address for the receiver of the wireless remote controller
- Setting the address for the wireless remote controller.

Overview

This chapter contains the following topics:

1.2 Test Run Checks

Checks before test run

Before carrying out a test run, proceed as follows:

Step	Action
1	Make sure the voltage at the primary side of the safety breaker is: ➤ 230 V ± 10% for 1-phase units ➤ 400V ± 10% for 3-phase units.
2	Fully open the liquid and the gas stop valve.

Test run checks

To carry out a test run, check the following:

- ➤ Check that the temperature setting of the remote controller is at the lowest level or test mode.
- ➤ Switch ON the indoor units one by one to check whether they operate correctly. Afterwards, switch ON all units to check whether they all operate simultaneously.
- ➤ Go through the following checklist:

Checkpoints	Cautions or warnings
Are all units securely installed?	➤ Dangerous for turning over during storm. ➤ Possible damage to pipe connections.
Is the earth wire installed according to the applicable local standard?	Dangerous if electric leakage occurs.
Are all air inlets and outlets of the indoor and outdoor units unobstructed?	➤ Poor cooling. ➤ Poor heating.
Does the drain flow out smoothly?	Water leakage.
Is piping adequately heat-insulated?	Water leakage.
Have the connections been checked for gas leakage?	➤ Poor cooling. ➤ Poor heating. ➤ Stop.
Is the supply voltage conform to the specifications on the name plate?	Incorrect operation.
Are the cable sizes as specified?	Damage of cables.
Are the remote controller signals received by the unit?	No operation.

1.3 Setting the Wireless Remote Controller

Introduction

To set the wireless remote controller, you have to set the address for:

- ➤ The receiver of the wireless remote controller
- ➤ The wireless remote controller.

Setting the address for the receiver

The address for the receiver of the wireless remote controller is factory set to 1. To change this setting, proceed as follows:

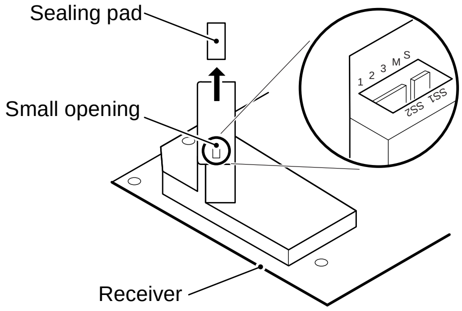
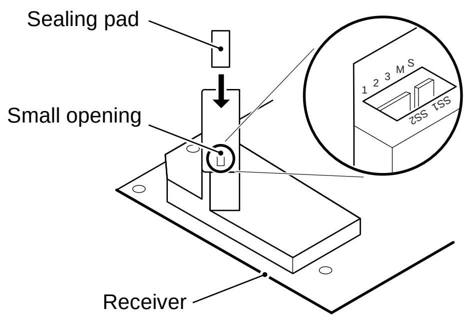
Step	Action
1	Turn OFF the power.
2	Remove the sealing pad on the top of the receiver. 
3	Set the wireless address switch (SS2) according to the table below. You can find the wireless address switch attached on the PCB of the receiver and it is visible through the small opening on the back of the receiver.
4	If you use a wired and a wireless remote controller for one indoor unit, proceed as follows: 1. Set the wired remote controller to MAIN: On the remote controller. 2. Set the wireless remote controller to SUB: On the receiver with the MAIN/SUB switch (SS1).
5	Seal off the opening of the address switch and the MAIN/SUB switch with the attached sealing pad. 
6	Make sure to also change the address on the remote controller.

Table for step 3:

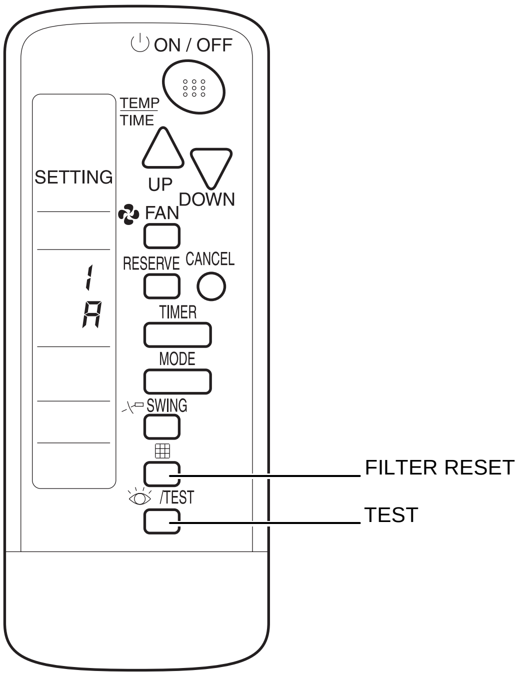
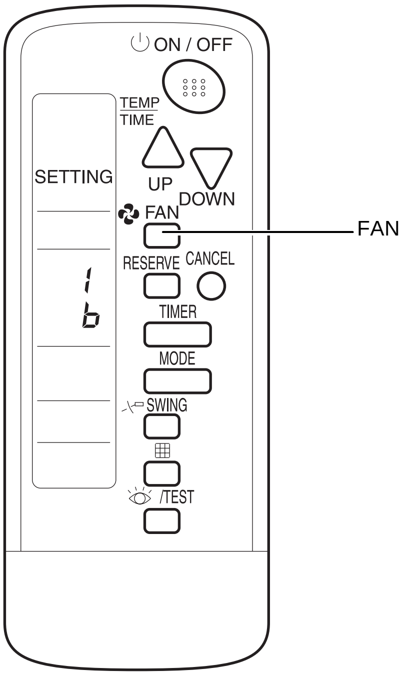
Unit No.	No. 1	No. 2	No. 3
SS2			

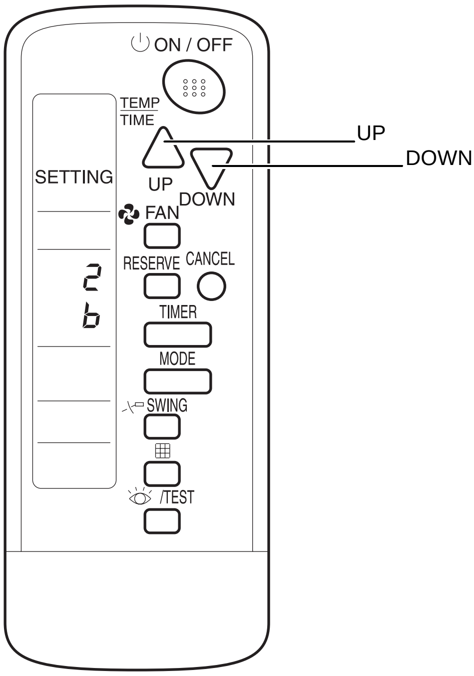
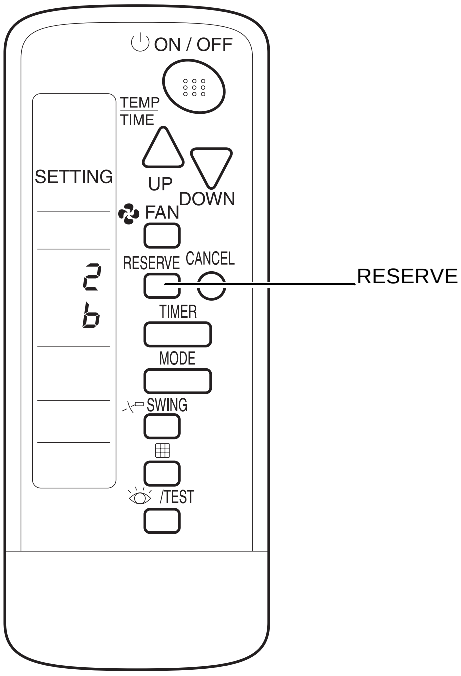
Table for step 4:

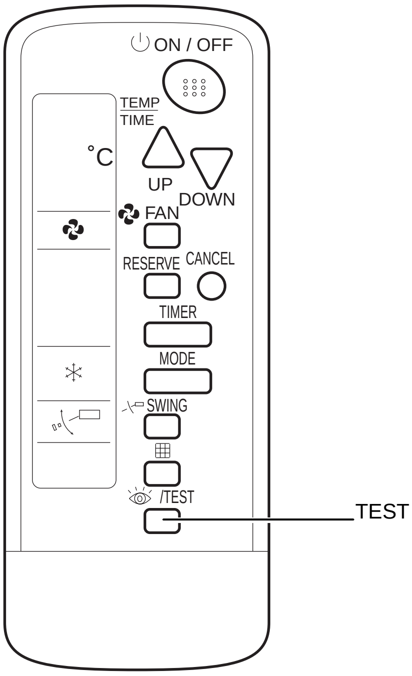
MAIN/SUB	MAIN	SUB
SS1		

Setting the address for the wireless remote controller

The address for the wireless remote controller is factory set to 1. To change this setting, proceed as follows:

Step	Action
1	Hold down the FILTER RESET button and the TEST button for at least 4 s, to go to field set mode. The display indicates the field set mode. 
2	Press the FAN button to select a multiple setting (A/b), see ‘Multiple settings A/b’ further in this section. Each time you press the button, the display switches between “A” and “b”. 

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>3</td><td>Press the UP and DOWN buttons to set the address. Set the same address as the receiver (1, 2 or 3). The receiver does not work with addresses 4, 5 and 6.

</td></tr>
<tr><td>4</td><td>Press the RESERVE button to confirm the setting.

</td></tr>
</table>

Step	Action
5	Press the TEST button to quit the field set mode and return to the normal display. 

Multiple settings A/b

When an outside control (central remote controller...) controls an indoor unit, sometimes the indoor unit does not respond to ON/OFF and temperature settings commands from this controller.

Remote controller		Indoor unit	
Setting	**Remote controller display**	**Control of other air conditioners and units**	**No other control**
A: Standard	All items are displayed.	Commands other than ON/OFF and temperature setting accepted. (1 long beep or 3 short beeps emitted)	
b: Multi System	Only one item is displayed. This item is only shown for a few seconds.	All commands accepted (2 short beeps)	

2 Field settings

2.1 What Is in This Chapter?

Introduction

This chapter contains the following information:

- ➤ How to change the field settings
- ➤ The field settings
- ➤ The factory settings.

Overview

This chapter contains the following topics:

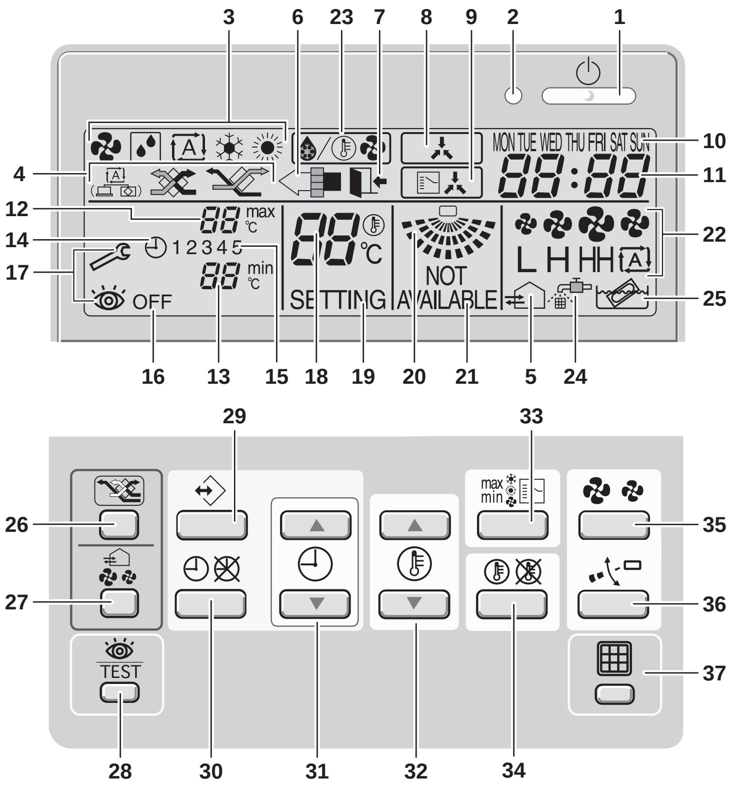
2.2 How to Change the Field Settings with the Wired Remote Controller

Installation conditions

The field settings have to be changed with the remote controller according to the installation conditions.

Wired remote controller

The illustration below shows the wired remote controller.



Components

The table below contains the components of the wired remote controller.

No.	Component	No.	Component
1	ON/OFF button	20	Air flow direction icon
2	Operation lamp	21	Not available
3	Operation mode icon	22	Fan speed icon
4	Ventilation mode icon	23	Defrost/hotstart mode icon
5	Ventilation icon	24	Air filter cleaning time icon
6	Air cleaning icon	25	Element cleaning time icon
7	Leave home icon	26	Ventilation mode button
8	External control icon	27	Ventilation amount button
9	Change-over under centralised control icon	28	Inspection/test operation button
10	Day of the week indicator	29	Programming button
11	Clock display	30	Schedule timer button
12	Maximum set temperature	31	Time adjust button
13	Minimum set temperature	32	Temperature adjust buttons
14	Schedule timer icon	33	Operation change/ button
15	Action icons	34	Setpoint/limit button
16	Off icon	35	Fan speed button
17	Inspection required	36	Air flow direction adjust button
18	Set temperature display	37	Air filter cleaning time icon reset
19	Setting		

Setting

To set the field settings, you have to change:

- "Mode No."
- "First code No."
- "Second code No.".

To change the field settings, proceed as follows:

Step	Action
1	Hold down the INSPECTION/TEST button for at least 4 s during normal mode to enter the "Field setting mode".
2	Press the TEMPERATURE CONTROL button until the desired "Mode No." appears.
3	➤ If the indoor unit is under group control, all settings for all the indoor units are set at the same time. Use the codes 10 to 15 to apply this group control and proceed to the next step. ➤ If you want to set the indoor units of one group individually or if you want to read out the last settings, use the codes 20 to 25 which are displayed in brackets. Press the TIMER SELECTION button to select the "Indoor unit No." for which you want to adjust the field settings.
4	Press the upper part of the PROGRAMMING TIME button to select the "First code No.".
5	Press the lower part of the PROGRAMMING TIME button to select the "Second code No".
6	Press the CONFIRMATION button to confirm the changed setting.
7	Press the INSPECTION/TEST button to return to "Normal mode".

2.3 How to Change the Field Settings with the Wireless Remote Controller

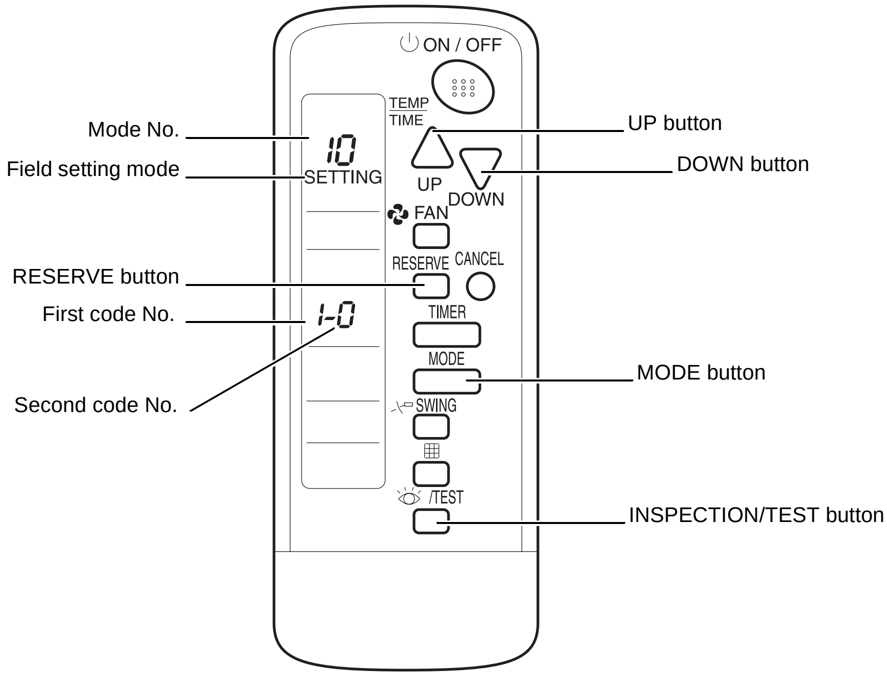
Optional accessories

If optional accessories are mounted on the indoor unit, the indoor unit setting may have to be changed.

Refer to OH98-2 or the installation manual (optional handbook) for each optional accessory.

Wireless remote controller

The illustration below shows the wireless remote controller.



Setting

To set the field settings, you have to change:

- ➤ “Mode No.”
- ➤ “First code No.”
- ➤ “Second code No.”.

To change the field settings, proceed as follows:

Step	Action
1	Hold down the INSPECTION/TEST button for at least 4 s during normal mode to enter the “Field setting mode”.
2	Press the MODE button to select the desired “Mode No.”.
3	Press the UP button to select the “First code No.”.
4	Press the DOWN button to select the “Second code No.”
5	Press the RESERVE button to set the present settings.
6	Press the INSPECTION/TEST button to return to the “Normal mode”.

2.4 Overview of the Field Settings of the Indoor Units

Field settings

The table below contains the possible field settings of all indoor units.

Mode No.	First code No.	Description of the setting	Second code No.			
			01	**02**	**03**	**04**
10 or 20	0	Filter counter	Light contamination	heavy contamination	—	—
	1	Filter type	Long	Super long	External	Oil mist
	2	Remote thermistor of the remote controller	TH1 = rem. controller	TH1 = air return	—	—
	3	Filter display	Filter indic.	No filter indic.	—	—
11 or 21	0	Number indoor to 1 outdoor	Pair	Twin	Triple	Double twin
	1	Unified or indiv. set twin	Group setting	Indiv. setting	—	—
	2	Fan OFF at thermostat OFF	LL-speed	OFF	—	—
12 or 22	0	KRP1B51/52/53 X1/X2 output	Thermostat ON	Option	Operation	Malfunction
	1	EKRORO	Forced OFF	ON/OFF operation	—	—
	3	Fan speed heating thermostat OFF	LL-speed	Set speed	—	—
	5	Automatic restart	Disabled	Enabled	—	—
13 or 23	0	Ceiling height setting	Normal	High	Extra high	—
			≤ 2.7 m	>2.7≤3.0 m	>3.0≤3.5 m	—
	1	Selection of air flow direction (setting for when a blocking pad kit has been installed).	4-way flow	3-way flow	2-way flow	—
	3	Horizontal discharge grill	Enabled	Disabled	—	—
	4	Air flow direction adjust range setting	Draft prevention	Standard	Ceil soil prevention	—
	5	Field fan speed changeover air outlet	Standard	Option 1	Option 2	—
	6	External static pressure	Normal	High	Low	—
14 or 24	0	Additional timer to guard timer	0 s	5 s	10 s	15 s
15 or 25	3	Drain pump during humidifying (heating)	No	Yes	—	—
	5	Ventilation unit indiv. setting	No	Yes	—	—
	6	Air-cleaner unit indiv. setting	No	Yes	—	—
1b	0	Permission level setting	Level 2	Level 3	—	—
	1	Leave home function	Not permitted	Permitted	—	—
	2	Thermostat sensor in remote controller (for limit operation and leave home function only)	Use	Not use	—	—

2.5 Overview of the Factory Settings of the Indoor Units

Factory settings

The table below contains the factory settings of all indoor units

Mode No.	First code No.	Second code No.						
		FHYCP	FHYKP	FHYBP	FAYP	FDYP	FUYP	FHYP
10 or 20	0	01	01	01	01	01	01	01
	1	01	—	01	—	02	01	—
	2	02	02	02	—	02	02	02
	3	01	01	01	01	01	01	01
11 or 21	0	01	01	01	01	01	01	01
	1	01	01	01	01	01	01	01
	2	01	01	01	01	01	01	01
12 or 22	0	01	01	01	01	01	01	01
	3	01	—	01	—	—	—	—
	5	02	02	02	02	02	02	02
13 or 23	0	01	—	—	01	—	01	01
	1	01	—	—	—	—	—	—
	3	—	01	—	—	—	—	—
	4	02	02	—	—	—	—	—
	5	01	—	—	01	—	01	01
	6	—	01	01	—	—	—	—
14 or 24	0	01	01	01	—	01	01	01
15 or 25	3	01	01	01	—	01	01	01
	5	01	01	01	01	01	01	01
	6	01	01	01	01	01	01	01

2.6 Setting the Ceiling Height

Incorrectly setting

If you set the controller incorrectly, a connection mistake malfunction “UA” will appear on the remote controller display.

See ’Malfunctioning Field Setting Switch (UA)’ on page 3–69.

Mode No. 13 or 23
First code No. 0

Set the second code No., according to the tables below.

FHYP

Second code No.	Ceiling-suspended type
01	Height < 2.7 m
02	2.7 m < height < 3.5 m
03	Not used

FAYP

Second code No.	Wall-mounted type
01	Normal
02	High
03	Extra high

FHYCP and FUYP

Indoor unit	Second code No.	4-way outlet	3-way outlet	2-way outlet
FHYCP35-71	01	< 2.7 m	< 3.0 m	< 3.5 m
	02	< 3.0 m	< 3.3 m	< 3.8 m
	03	< 3.5 m	< 3.5 m	—
FHYCP100-125	01	< 3.2 m	< 3.6 m	< 4.2 m
	02	< 3.6 m	< 4.0 m	< 4.2 m
	03	< 4.2 m	< 4.2 m	—
FUYP	01	< 2.7 m	< 3.0 m	< 3.5 m
	02	< 3.0 m	< 3.5 m	< 3.8 m
	03	< 3.5 m	< 3.8 m	—

2.7 Setting the Filter Counter

Mode No. 10 or 20
First code No. 0

When the filter counter indication time is set to ON, set the second code No., according to the table below

Unit	Mode No.	First code No.	Second code No.	Contamination
			01 light	02 heavy
FHYCP	10 or 20	0	±2500 hrs	±1250 hrs
FHYKP			±2500 hrs	±1250 hrs
FHYP			±2500 hrs	±1250 hrs
FUYP			±2500 hrs	±1250 hrs
FAYP~L			±200 hrs	±100 hrs
FATP~B			±200 hrs	±100 hrs
FHYBP			±2500 hrs	±1250 hrs
FDYMP			±2500 hrs	±1250 hrs
FDYP			±2500 hrs	±1250 hrs

Fan speed OFF when thermostat OFF

When the cool/heat thermostat is OFF, you can stop the indoor unit fan by switching the setting to “Fan OFF”. This setting is used as a countermeasure against odour, for example for barber shops and restaurants.

Mode No.	First code No.	Second code No.	Setting
11 or 21	2	01	—
		02	Fan OFF

Fan speed changeover when thermostat OFF

You can switch the fan speed to the set fan speed when the heating thermostat is OFF. This setting is called “Set Fan Speed”.

Mode No.	First code No.	Second code No.	Setting
12 or 22	3	01	LL fan speed
		02	Set fan speed

Air flow direction setting

Set the air flow direction of the indoor units as given in the table below. This setting is needed when the optional air outlet blocking pad has been installed. The “Second code No” is factory set to “01”.

Mode No	First code No	Second code No	Setting
13 or 23	1	01	F: four-direction air flow
		02	T: three-direction air flow
		03	W: two direction air flow

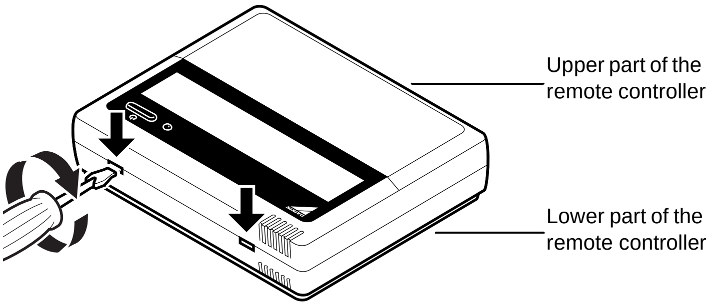
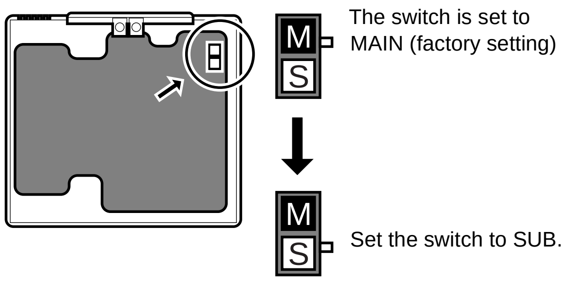
2.8 MAIN/SUB Setting when Using Two Remote Controllers

Situation

The MAIN/SUB setting is necessary when one indoor unit is controlled by two remote controllers. When you use two remote controllers (control panel and separate remote controller), set one to MAIN and the other to SUB. You can do this by setting the switch on the remote controller's PCB.

Setting

The remote controllers are factory set to MAIN, so you only have to change one remote controller from MAIN to SUB. To change a remote controller from MAIN to SUB, proceed as follows:

Step	Action
1	Insert a flathead screwdriver into the recess between the upper and lower part of the remote controller, as shown in the illustration below. Gently pry off the upper part of the controller, working from the two possible positions. 
2	Turn the MAIN/SUB changeover switch on the PCB to "S". 

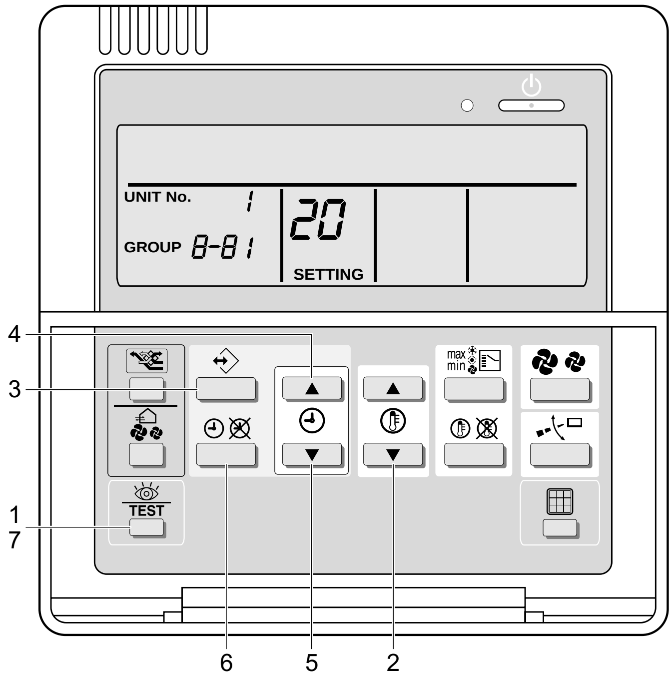
2.9 Setting the Centralized Group No.

When?

If you want to carry out centralized control with a central remote controller and a unified ON/OFF controller, you have to set the group No. for each group with the remote controller.

Wired remote controller

The illustration below shows the wired remote controller.



Setting

To set the “Centralized group No.”, proceed as follows:

Step	Action
1	Switch ON the power supply of the central remote controller, the unified ON/OFF controller and the indoor unit(s).
2	Hold down the INSPECTION/TEST button for at least 4 s during normal mode to enter the “Field setting mode”.
3	Press the TEMPERATURE CONTROL button until “Mode No.” “00” appears.
4	Press the INSPECTION/TEST button to inspect the group No. display.
5	Set the “Group No.” for each group by pressing the PROGRAMMING TIME button. The “Group No.” rises in the order of 1—00, 1—01, ..., 1—15, 2—00, ..., 2—15, 3—00, etc. The unified ON/OFF controller however displays only the range of group numbers selected by the switch for setting each address.
6	Press the CONFIRMATION button to enter the selected group No.
7	Press the INSPECTION/TEST button to return to normal mode.

Individually address setting

If the address must be set individually for each unit, set the “Mode No.” to “30”. For example, for power consumption counting.

Group control for FDYMP indoor units

For group control, cut the jumper indicated as “master/slave” on the PCB of the “slave” indoor units (=slave PCB). Do not cut the jumper on the PCB of the indoor unit to which the remote controller is connected (=master PCB).

Note

It is not necessary to designate an indoor unit address when using group control. Tha address is automatically set when the power is activated.

2.10 Field settings when using a spare part PCB of Sky-Air L-series outdoor unit

When

In case the outdoor PCB needs to be replaced by a spare part PCB, it is required to execute below-mentioned field settings to ensure correct operation of the unit.

Required action

In case of repair using this part, replace the part according to the following instruction:

Attention on service!

1 Please be sure to work after turning off all related circuit breakers.

2 Before starting the work, please touch the metal part of the product to discharge static electricity.

3 Please exchange PCB ass.y when it is still included in the resin case.
(If it would be removed from the resin case, it can cause a PCB failure.)

- The parts for replacement :	**1** The PCB ass'y
- Accessories:	**1** Capacity setting adaptor
	2 The screw for terminal board : Two kinds (M4×3 pieces, M5×6 pieces)

Please replace the printed circuit board according to the following flow chart of "The flow to setup the printed circuit board ass'y".

The flow to setup the printed circuit board ass.y

<Please check the capacity of the unit.>

Please attach the capacity setting adaptor (fig. 4) to CN26/X26A.
(Refer to fig. 3 [Nr. 1])

<Please cut jumper JH>

Please cut jumper JH, as shown in fig. 1 on this page. (Refer to fig. 3 [Nr. 5])
(It becomes a DAIKIN compressor setup by cutting.)

<Is the capacity of the unit 71 or 100?> No **<Is the capacity of the unit 125?>**

Yes Yes

In the case of 71 or 100

Please remove and reuse the two following connectors from the original printed circuit board ass'y.

- Please attach the connector for terminal protection to CN14/X14A. (Refer to fig. 3 [Nr. 2])
- Please attach a short circuit connector to CN12/X12A. (Refer to fig. 3 [Nr. 3])

<Is the model R(Y)P71L7V1 or R(Y)P100L7V1?> No

Yes

Please cut jumper J4, as shown in fig. 1 on this page. (Refer to fig. 3 [Nr. 6])
(It becomes a setup for 230V by cutting.)

<Is it a C/O or H/P?>

<Is it a C/O or H/P?> H/P

C/O

Please cut jumper J5 as shown in fig. 1 on this page. (Refer to fig. 3 [Nr. 7])

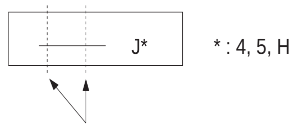
<Replacement of the printed circuit board ass’y>

(CAUTION)

Please replace the PCB ass.y when it is still included in the resin case.

Please reconnect all connectors as before according to the electric wiring diagram.

Figure 1



The cut position of a jumper line

<Test run>

Please confirm that a test run is performed and that the system can operate normally after finishing the replacement.

Figure 3: The outline drawing of the PCB assembly (including the resin case)

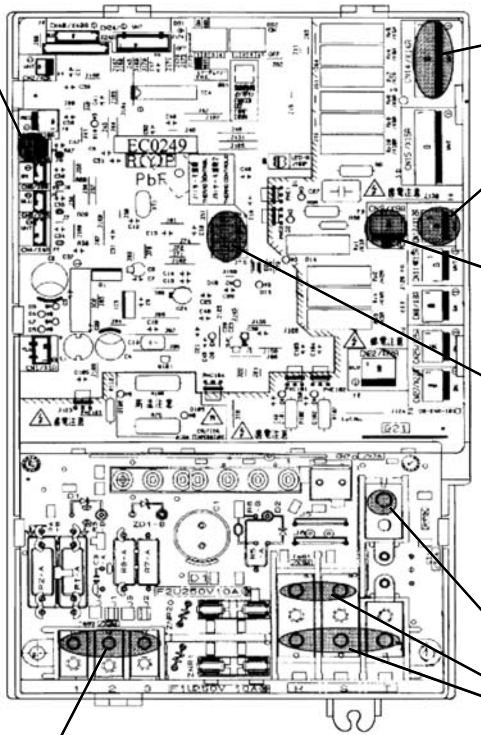
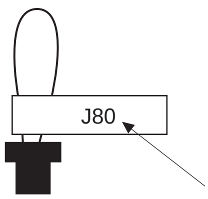


Figure 4: Capacity establish adaptor illustration



2.11 The Field Setting Levels

Introduction

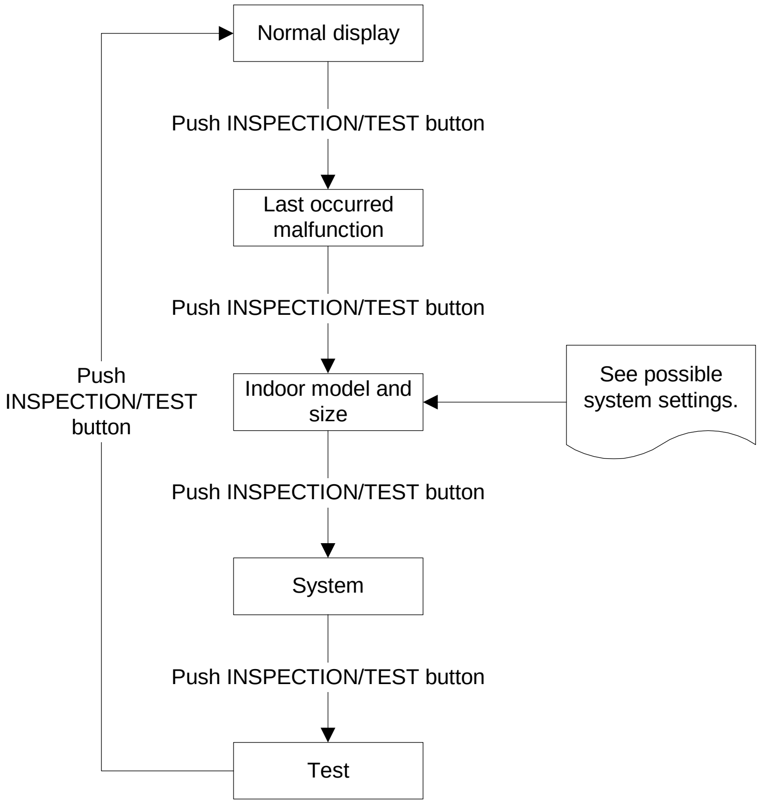
The three field setting levels are:

- ➤ Inspection level
- ➤ Monitoring level
- ➤ Maintenance mode settings.

The inspection level

The inspection level is the highest level of the three field setting levels. You can change the views in the inspection level by pressing the INSPECTION/TEST button.

The flow chart below explains the different windows of the inspection level.



4

Possible system settings

The table below contains the possible system settings, which are displayed on the remote controller if the TEST button is pushed twice shortly.

Size		Software	Type	
Settings	Display		Settings	Display
35	35	5	FHYCP	FC
45	45		FHYP	HC
60	63		FAYP	AC
71	71		FHYKP	EC
100	100		FHYBP	JC
125	125		FUYP	3C
200	200		FDYP	UC
250	250		—	

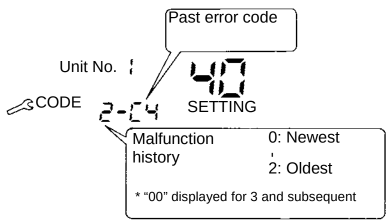
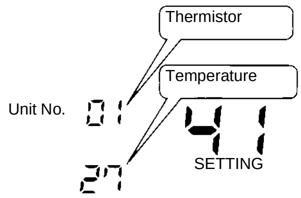
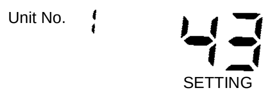
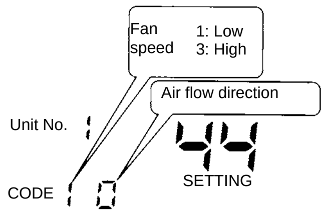
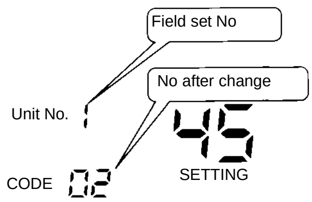
Changing the mode settings

To enter the monitoring level and to change the maintenance mode settings, proceed as follows:

Step	Action
1	Hold down the INSPECTION/TEST button for at least 4 s to enter the field setting mode.
2	Hold down the INSPECTION/TEST button for at least 4 s to enter the maintenance mode.
3	Press the TEMPERATURE CONTROL buttons as many times as needed to select the mode No. you want.
4	Press the TIMER SELECTION button as many times as needed to select the unit No. you want.
5	Carry out the settings for modes 44 and 45. See “Maintenance Mode Settings” further in this section.
6	Press the CONFIRMATION button to confirm the settings of modes 44 and 45.
7	Press the INSPECTION/TEST button to return to the normal operating mode.

Maintenance Mode Settings

The table below describes the maintenance mode settings.

Mode No.	Function	Content and operation method	Example of the remote controller display
40	History error codes	Display malfunction history The history No. can be changed with the programming time button.	
41	Thermistor data display	Select the display thermistor with the programming time button. Thermistor: 0. Remote control thermistor 1. Suction thermistor 2. Heat exchanger thermistor.	
43	Forced fan ON	Turns the fan ON for each unit individually.	
44	Individual setting	Sets fan speed and air flow direction for each unit individually when using group control. Settings are made using the "air flow direction adjust" and "fan speed adjust" buttons. Confirmation by the confirmation button is required.	
45	Unit No. change	Changes unit No. Set the unit No. after changing with the programming time buttons. Confirmation by the confirmation button is required.	

2.12 Overview of the Field Settings: R(Y)P71-125L

Jumpers

The table below contains the jumper field settings.

Jumper	Label on PCB	Function	Applicable units	See page
J1	Thermo CTR	Change thermostat OFF control indoor unit	➤ RP71-125L ➤ RYP71-125L	4–28
J3	Thermo CTR2	Change thermostat ON control indoor unit		4–28

DIP switches

The table below contains the DIP switch field settings.

DIP switch	Function	Details	Applicable units	See page
DS1-1	Emergency ON/OFF	Switch emergency operation outdoor unit ON	RYP71-125L	4–26
DS1-2	Cool / Heat	Select emergency cooling / heating operation on outdoor unit		4–29
DS1-3	Increase possibility to start defrost	➤ Changes the accumulated operation time from 3 hours to 40 minutes in order to advance the defrosting operation. ➤ Increases the temperature conditions for defrost activation with 4K.		4–29
DS1-4	Mode B Avoid risk of liquid back to the compressor	At factory setting (switch = OFF), the E.V. will open at the maximum (480 pulses) for a limited time (1 or 2 minutes) before closing to 100 pulses. ➤ When changing this setting, the time of opening the E.V. at maximum opening is reduced to 30 seconds. ➤ Stops the compressor at defrost start and stop		4–29
DS2-1	Not applicable	—	RYP71-125L	4–29
DS2-2	Not applicable	—		4–29
DS2-3	Change Freeze-up conditions	Freeze-up start / stop decided by indoor unit.(Unit will restart when evaporator temperature reached 7°C for 10 minutes)	➤ RP71-125L ➤ RYP71-125L	4–30
DS2-4	Change Freeze-up conditions	Setting for low humidity applications. (Unit will restart when evaporator temperature reached 7°C for 3 minutes)		4–30

BS

The table below contains the BS field setting.

BS	Label on PCB	Function	Applicable units	Details
BS1	Pump down / forced defrost	Cooling/fan only: Pump down (see further in this section) Heating: Forced defrosting	➤ RP71-125L ➤ RYP71-125L	—

Pump down

Pump down is preferably carried out with the indoor unit set to “fan only” in order to avoid compressor restart with closed stop valves after finishing the previous pump down operation (close stop valves, turn OFF the power supply).

If accidentally, the power was switched back ON, the unit will automatically restart with closed stop valves, which may result in a possible compressor breakdown.

2.13 Jumpers

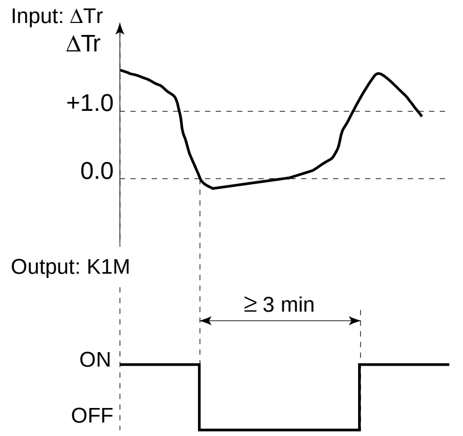
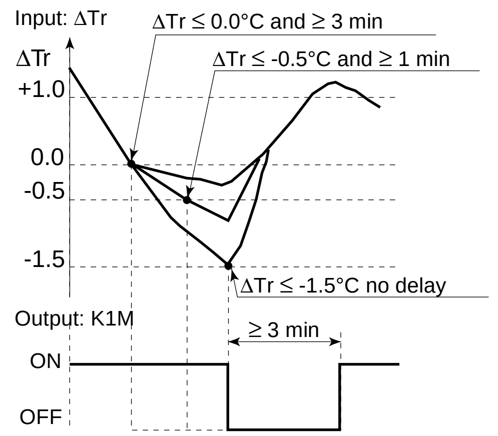
Input and output

The table below describes the input and the output of the jumpers.

Item	**Description**			
Input	ΔTr	Cooling	ΔTr = Tr - Ts	➤ Tr = indoor unit suction air temp. ➤ Ts = temp. set by the remote controller
		Heating	ΔTr = Ts - Tr	
Output	Magnetic switch compressor K1M			

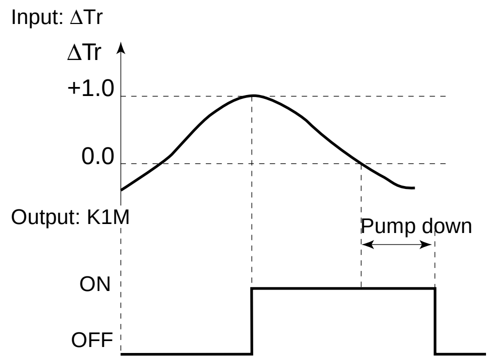
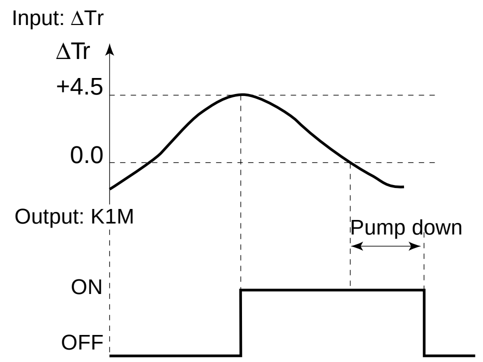
J1

The function of jumper J1 is to reduce the possibility of thermostat OFF (reduce ON/OFF cycle compr.).

Factory setting (closed state)	**Field setting (open state)**
Thermostat goes into OFF-state when ΔTr ≤ 0.0°C	Thermostat goes into OFF-state when ➤ -0.5°C < ΔTr ≤ 0.0°C for 3 min, or ➤ -1.5°C < ΔTr ≤ -0.5°C for 1 min, or ➤ ΔTr ≤ -1.5°C
	

J3

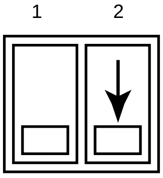
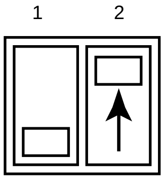
The function of jumper J3 is to increase the differential for thermo ON.

Factory setting (closed state)	**Field setting (open state)**
Thermostat goes into ON-state when ΔTr ≥ 1.0°C	Thermostat goes into ON-state when ΔTr ≥ 4.5°C
	

2.14 DIP switch DS1

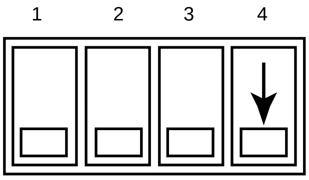
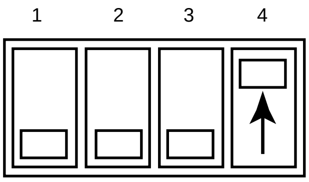
DS1-3: Defrost starting condition

The table below describes the DIP switch.

Setting	Illustration	Function
Factory setting	OFF 	For temperature settings at defrosting, see page 2–40. Accumulated operation time for defrost activation = 3 h.
Field setting	ON 	➤ Increases the temp. conditions for defrost activation with 4°C. ➤ Changes the accumulated operation time from 3 h to 40 min in order to advance the defrosting operation.

DS1-4: Mode B

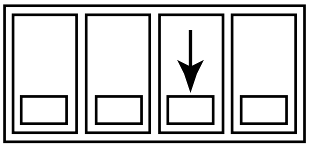
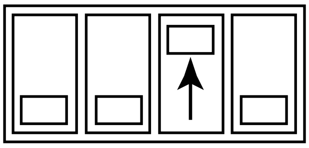
The table below describes the DIP switch.

Setting	Illustration	Function
Factory setting	OFF 	At the start-up of the defrost operation, the E.V. opens at the max. (480 pulses) for a limited time (1 or 2 min), before closing to 100 pulses.
Field setting	ON 	Changes the following in order to avoid liquid back to the compressor: ➤ Changes the limited time of E.V. opening at max. (480 pulses) from 1 or 2 min to 30 s. ➤ Stops the compressor at defrost start and stop.

2.15 DIP switch DS2

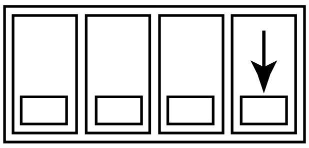
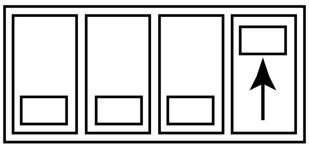
DS2-3:
Freeze 1

The table below describes the DIP switch.

Setting	Illustration	Function
Factory setting	OFF 1 2 3 4 	Enables the “intelligent” control function. See page 2–29.
Field setting	ON 1 2 3 4 	Disables the “intelligent” control function. Freeze-up start/stop decided by indoor unit. (Unit will restart when evaporator temperature reached 70°C for 10 minutes.) To be used in combination with EKRPER only!

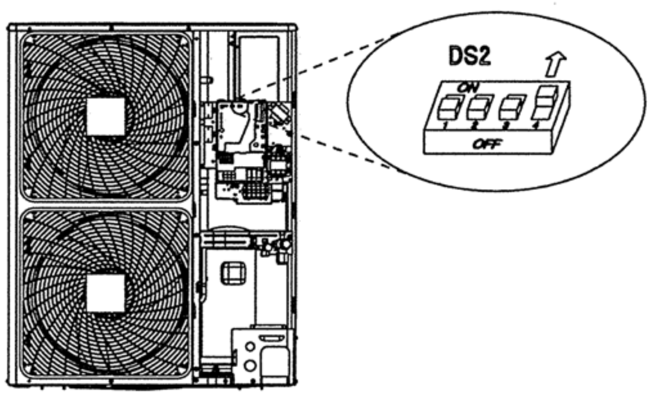
DS2-4:
Freeze 2

The table below describes the DIP switch.

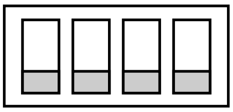
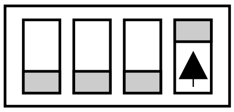
Setting	Illustration	Function
Factory setting	OFF 1 2 3 4 	Normal operation.
Field setting	ON 1 2 3 4 	Countermeasure for low humidity applications.

DS2-4: Method and illustration

The capacity will be increased when the dip switch DS2-4, mounted on the outdoor PCB, is set to ON .



Detail dip switch setting:

OFF (Factory setting)	ON
DS2  ON OFF 1 2 3 4	DS2  ON OFF 1 2 3 4

DS2-4: Capacity result at low temperature:

The capacity increases when outdoor temperature drops below 21°C as indicated on table below:

	Dip switch OFF (Factory setting)	Dip switch ON
Capacity low temperature	100%*	150~200%

*This is a relative comparisson to indicate an increase of 50 to 100% capacity with the dipswitch ON.

Note

See page 2–29 “Freeze up conditions” for detailed information.

DS2-4: Caution

- ➤ Finally the capacity result will depend on the total condition of the installation site. This is the responsibility of the customer.
- ➤ There is additional limitation for the relative humidity when operating this switch. Finally it will depend on the total condition of the installation site and is responsibility of the customer.
- ➤ Evaluation is necessary for each installation site by a proffesional responsible installer.
- ➤ Only use the switch for capacity increase in the area indicated on the graph of page 4.
- ➤ Do not set the switch in combination with the option EKRPER, this is only for use of Daikin indoor units.

Reason for limitation: When operating with switch ON, there will be a change of freeze protection control see table on next page. By this there will be some risk of: ➤ Ice building up at indoor heat exchanger. ➤ Water blown off from the unit into the room

4

3 Test Run and Operation Data

Introduction

This chapter contains the following information:

- ➤ General operation data
- ➤ Operation ranges.

Overview

This chapter contains the following topics:

3.1 General Operation Data

During cooling mode and dry keep

The operating conditions must be as follows:

Items	Operating modes	If the operation is out this range...
Outdoor temp.	➤ c/o: -15 to +46°CDB ➤ h/p: -5 to +46°CDB	➤ A safety device may stop the operation. ➤ Condensation may occur on the indoor unit and start dripping.
Indoor temp.	+14 to +28°CWB	
Indoor humidity	80%	

The operation values are guidelines in the operation range:

- LP: 3.0~6.5 barg (low pressure)
- HP: 12.0~28.0 barg (high pressure)
- Td: 60~95°C (discharge pipe temperature compressor)
- Ts: -2~15°C (suction pipe temperature compressor)
- ΔTi: 8~16°C (indoor temperature difference |air return – air outlet|).

4

During heating mode

The operating conditions must be as follows:

Items	Operating modes	If the operation is out this range...
Outdoor temp.	-10 to +15.5°CWB	A safety device may stop the operation.
Indoor temp.	+15 to +27°CDB	

The operation values are guidelines in the operation range:

- LP: 1.8~6.4 barg (low pressure)
- HP: 13.0~28.0 barg (high pressure)
- Td: 55~95°C (discharge pipe temperature compressor)
- Ts: -15~10°C (suction pipe temperature compressor)
- ΔTi: 12~32°C (indoor temperature difference |air return – air outlet|).

Correlation of Air- Conditioner's Operation Status and Pressure / Running Current

What happens in comparison to normal values is summarized in the table below.
(Measured from 15 ~ 20 minutes or more after operation starts.)

When Cooling

Air-Conditioner Status	Low Pressure	High Pressure	Running Current
Air Filter Fouling	Lower	Lower	Lower
Short Circuit of Indoor Unit Inlet/ Outlet Air	Lower	Lower	Lower
Outdoor Unit Fin Fouling	Higher	Higher	Higher
Short Circuit of Outdoor Unit Inlet/Outlet Air	Higher	Higher	Higher
Air Mixed in Refrigerant	Higher	Higher	Higher
Water Mixed in Refrigerant	*1 Lower	Lower	Lower
Dirt Mixed in Refrigerant	*2 Lower	Lower	Lower
Lack of Refrigerant (Gas)	Lower	Lower	Lower
Unsatisfactory Compression	*3 Higher	Lower	Lower

When Heating

Air-Conditioner Status	Low Pressure	High Pressure	Running Current
Air Filter Fouling	Higher	Higher	Higher
Short Circuit of Indoor Unit Inlet/ Outlet Air	Higher	Higher	Higher
Outdoor Unit Fin Fouling	Lower	Lower	Lower
Short Circuit of Outdoor Unit Inlet/Outlet Air	Lower	Lower	Lower
Air Mixed in Refrigerant	Higher	Higher	Higher
Water Mixed in Refrigerant	*1 Lower	Lower	Lower
Dirt Mixed in Refrigerant	*2 Lower	Lower	Lower
Lack of Refrigerant (Gas)	Lower	Lower	Lower
Unsatisfactory Compression	*3 Higher	Lower	Lower

Note

*1. Water in the refrigerant freezes inside the capillary tube or expansion valve, and is basically the same phenomenon as pump down.

*2. Dirt in the refrigerant clogs filters inside the piping, and is basically the same phenomenon as pump down.

*3. Pressure differential between high and low pressure becomes slight.

3.2 RP71L7V1, RP71L7W1, RP100L7V1, RP100L7W1 and RP125L7W1

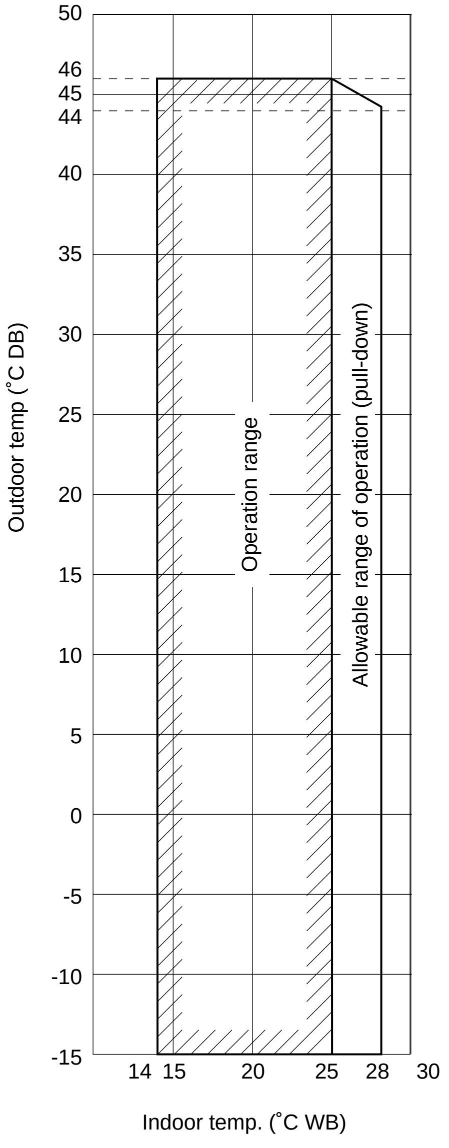
Conditions

The illustration in this section is based on the following conditions:

- Equivalent piping length: 7.5 m
- Level difference: 0 m
- Air flow rate: High.

Operation range

The illustration below shows the operation range.



3.3 RYP71L7V1, RYP71L7W1, RYP100L7V1, RYP100L7W1 and RYP125L7W1

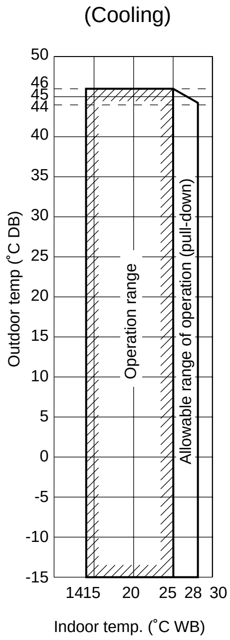
Conditions

The illustrations in this section are based on the following conditions:

- Equivalent piping length: 7.5 m
- Level difference: 0 m
- Air flow rate: High.

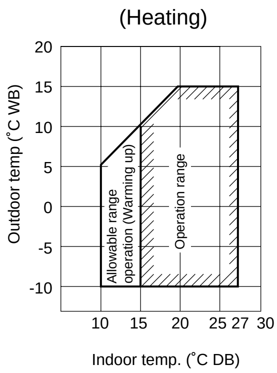
Operation range: Cooling

The illustration below shows the operation range.



Operation range: Heating

The illustration below shows the operation range.



4

Part 5
Disassembly and Maintenance

What is in this part?

This part contains the following chapters:

1 Disassembly and Maintenance: Outdoor Units

1.1 What Is in This Chapter?

Introduction

This chapter contains the following information on the outdoor units:

- Exploded views
- Components.

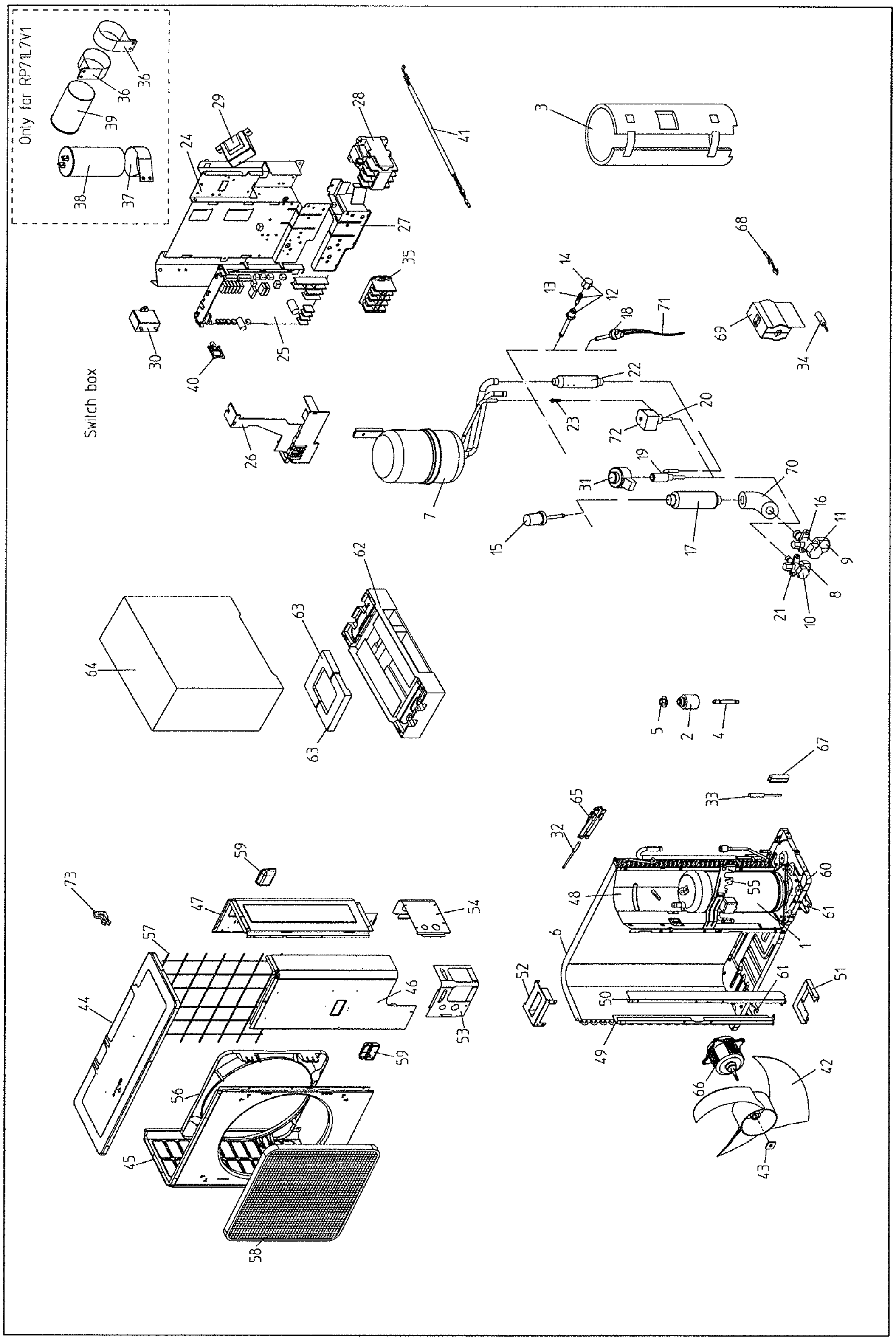
Overview

This chapter contains the following topics:

1.2 RP71L7V1, RP71L7W1

Exploded view

The illustration below shows the exploded view.



Components

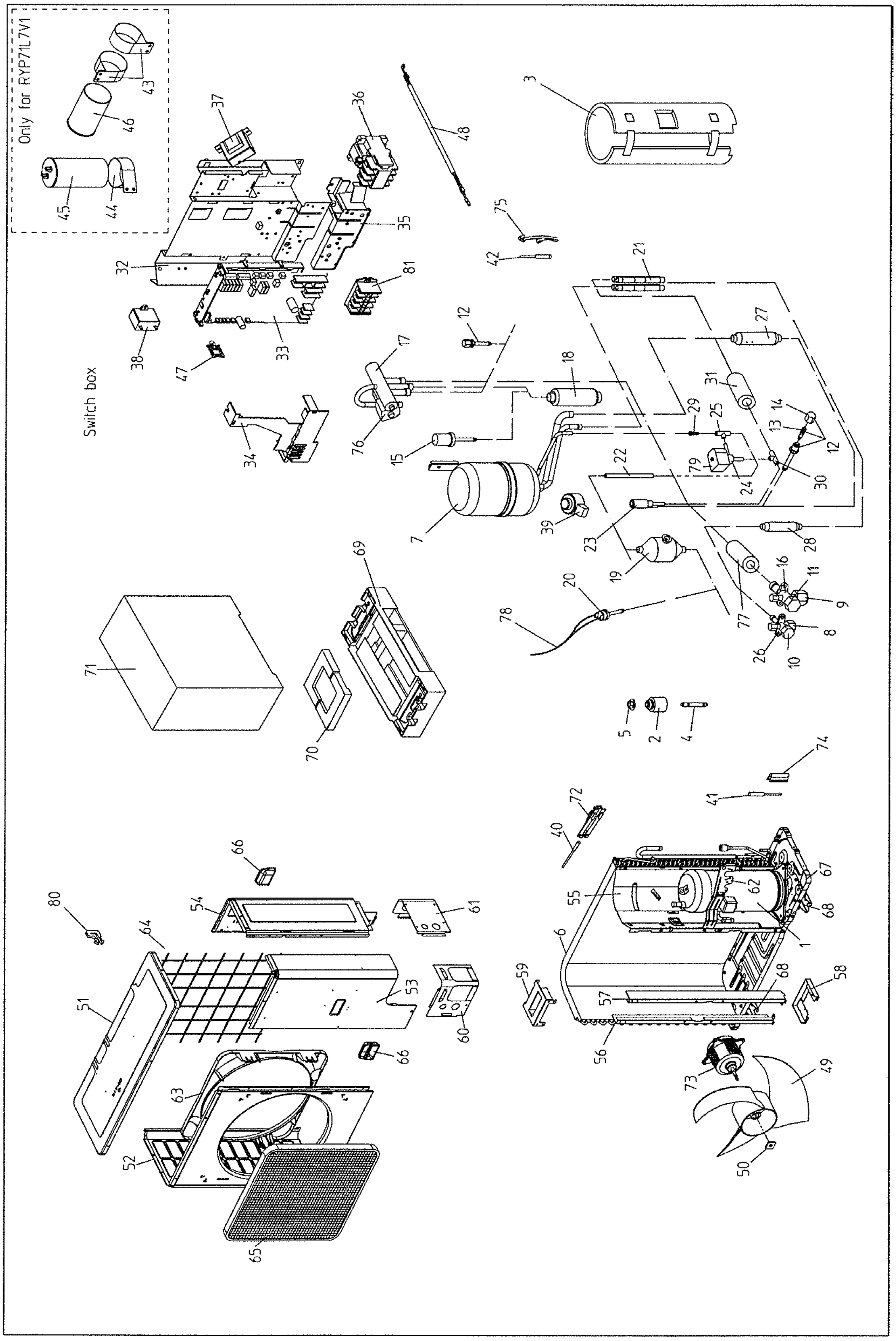
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	#7029# / #7039# Compressor	35	Terminal strip
2	Rubber cushion pre-assy	36	Capacitor fixing band
3	Sound insulation (for comp/1)	37	Capacitor fixing band
4	Bolt for compressor	38	Comp. Motor capacitor
5	Nut with washer	39	Comp. Motor capacitor
6	Plate finned coil heat exch as	40	Wire clip
7	Liquid receiver assy	41	Compressor cable
8	Flare nut 3/8	42	Fan propellor
9	Flare nut 5/8”	43	Washer
10	Stop valve cap	44	Top plate assy
11	Valve cap	45	Front plate assy
12	Check valve	46	Front plate (2) assy
13	Valve core	47	Side plate assy
14	Shraeder round dustcap	48	Part.Plate assy
15	Low pressure switch	49	Fan motor stand left
16	Gas stop valve assy	50	Fan motor stand right
17	Filter	51	Fan motor stand
18	High pressure switch	52	Fan motor stand (up)
19	Motor operated valve body	53	Cover
20	Solenoid valve body	54	Piping cover (rear)
21	Liquid stop valve assy	55	Stop valve mounting plate
22	FI233 Filter	56	Bell mouth assy
23	Strainer	57	Suction grill
24	Ele. compo.mounting assy	58	Air discharge grill
25	PCB Assy	59	Handle
26	Resin cover assy	60	Bottom frame assy
27	El. compo. box lower cover	61	Installation leg painted
28	Magnetic switch	62	Bottom tray assy
29	Transformer	63	Cushion top
30	Fan motor capacitor	64	Packing case p/m
31	Motor operated valve coil	65	Thermistor fixing plate
32	Thermistor	66	Single phase ac fan motor
33	Thermistor	67	Thermistor mounting spring
34	Thermistor	68	Thermistor mounting spring
69	Insulation Material	72	Solenoid valve coil
70	Insulation tube (gas)	73	Stopper
71	Hps cable		

1.3 RYP71L7V1 and RYP71L7W1

Exploded view

The illustration below shows the exploded view.



Components

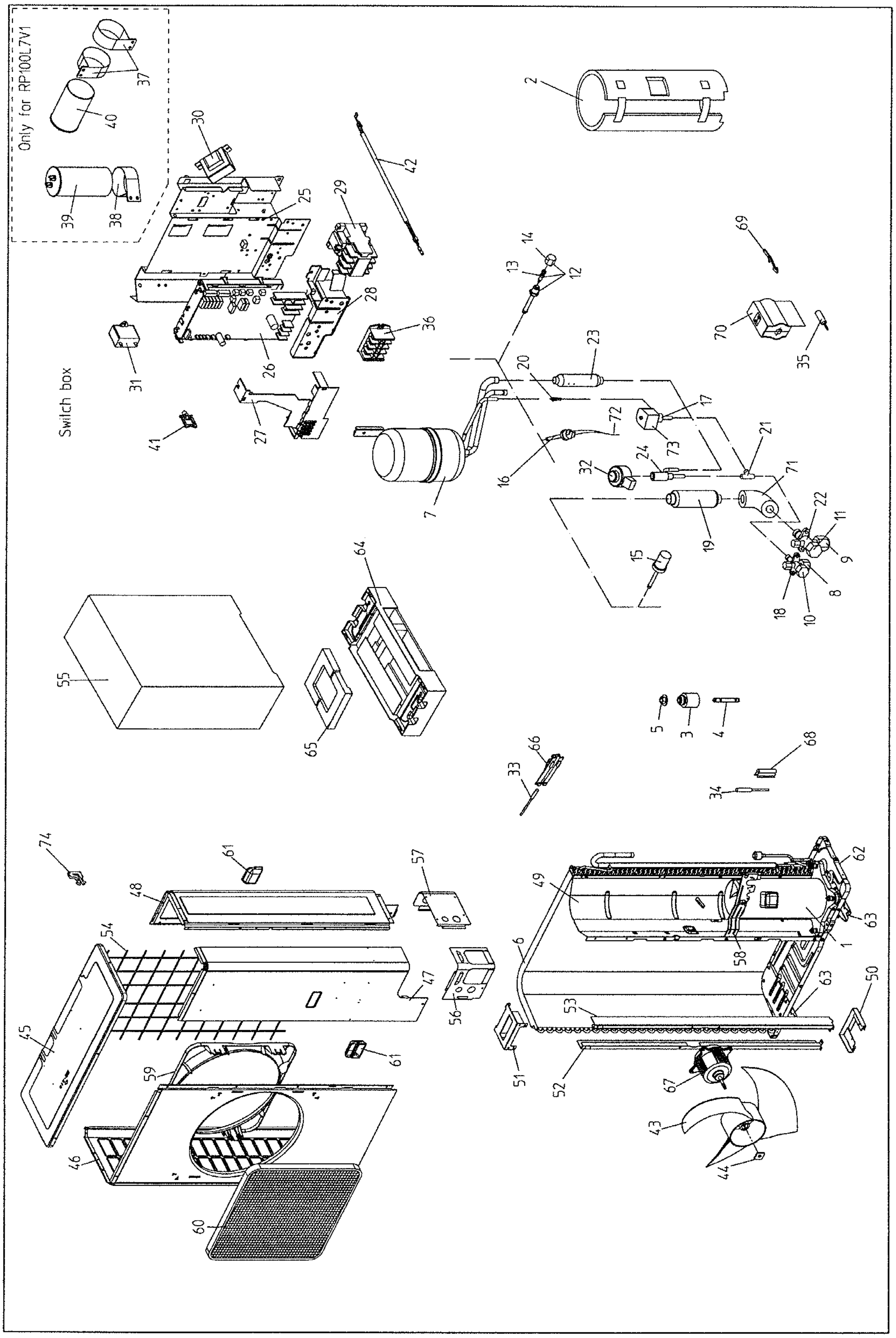
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	#7028# / #7039# Compressor	35	El. compo.box lower cover
2	Rubber cushion pre-assy	36	Magnetic switch
3	Sound insulation (for comp/1)	37	Transformer
4	Bolt for compressor	38	Fan motor capacitor
5	Nut with washer	39	Motor operated valve coil
6	Plate finned coil heat exch as	40	Thermistor
7	Liquid receiver assy	41	Thermistor
8	Flare nut 3/8	42	Thermistor
9	Flare nut 5/8”	43	Capacitor fixing band
10	Stop valve cap	44	Capacitor fixing band
11	Valve cap	45	Comp. Motor capacitor
12	Check valve	46	Comp. Motor capacitor
13	Valve core	47	Wire clip
14	Shraeder round dustcap	48	Compressor cable
15	Low pressure switch	49	Fan propellor
16	Gas stop valve assy	50	Washer
17	Four way valve body	51	Top plate assy
18	Filter	52	Front plate assy
19	Muffler	53	Front plate (2) assy
20	High pressure switch	54	Side plate assy
21	Check valve	55	Part.Plate assy
22	Check valve	56	Fan motor stand left
23	Motor operated valve body	57	Fan motor stand right
24	Solenoid valve body	58	Fan motor stand
25	T-joint TSS2-2-2	59	Fan motor stand (up)
26	Liquid stop valve assy	60	Cover
27	FI233 Filter	61	Piping cover (rear)
28	FI233 Filter	62	Stop valve mounting plate
29	Strainer	63	Bell mouth assy
30	T-joint	64	Suction grill
31	Insulation tube	65	Air discharge grill
32	Ele. compo.mounting assy	66	Handle
33	PCB Assy	67	Bottom frame assy
34	Resin cover assy	68	Installation leg painted
69	Bottom tray assy	75	Thermistor mounting spring
70	Cushion top	76	Coil of 4-way valve
71	Packing case p/m	77	Insulation tube (gas)
72	Thermistor fixing plate	78	Hps cable
73	Single phase ac fan motor	79	Solenoid valve coil
74	Thermistor mounting spring	80	Stopper

1.4 RP100L7V1, RP100L7W1

Exploded view

The illustration below shows the exploded view.



Components

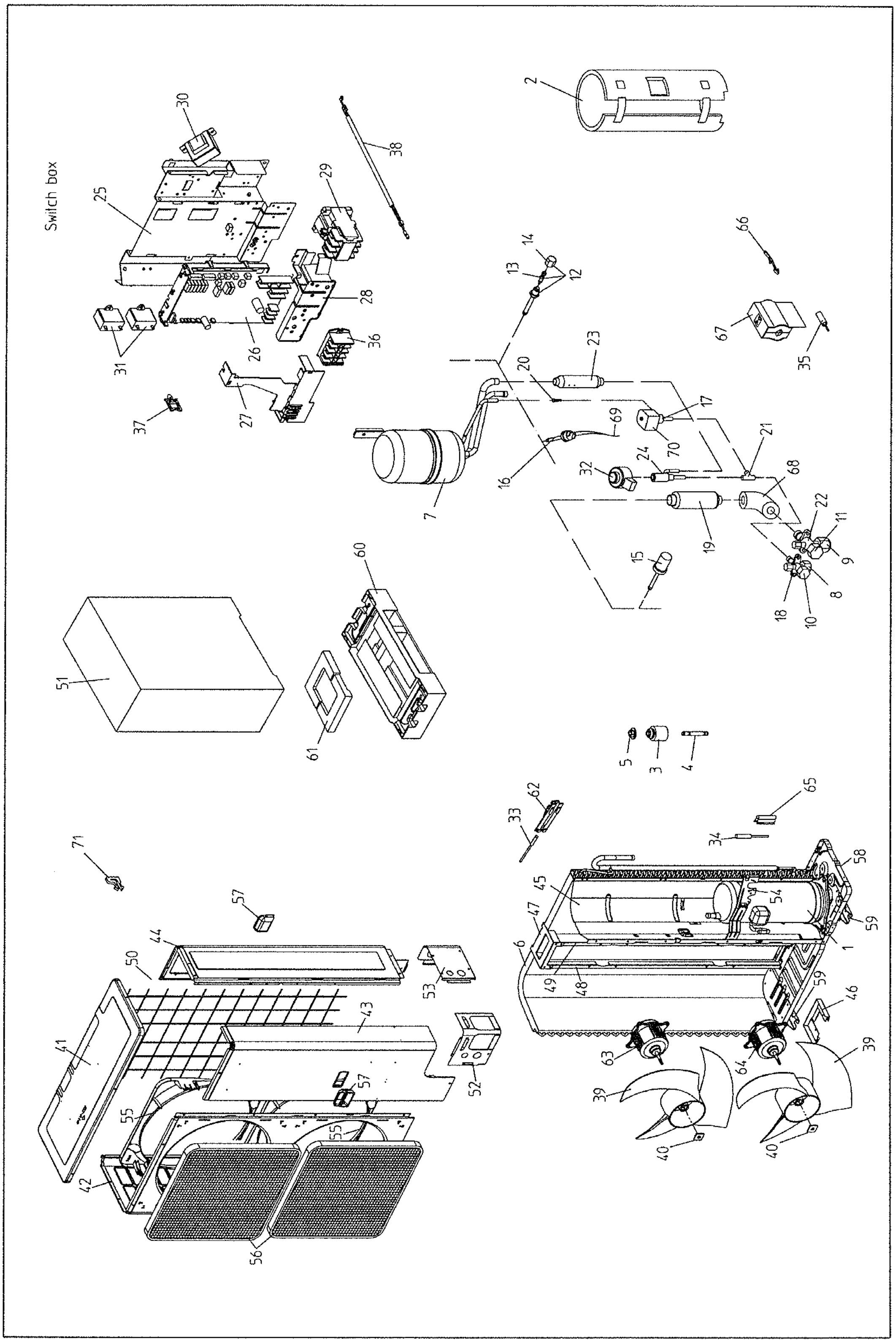
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	#7027# / #7038# Compressor	35	Thermistor
2	Sound insulation (for comp/1)	36	Terminal strip
3	Rubber cushion pre-assy	37	Capacitor fixing band
4	Bolt for compressor	38	Capacitor fixing band
5	Nut with washer	39	Comp. Motor capacitor
6	Plate finned coil heat exch as	40	Comp. Motor capacitor
7	Liquid receiver assy	41	Wire clip
8	Flare nut 3/8	42	Compressor cable
9	Flare nut FNS-6	43	Fan propellor
10	Valve cap	44	Washer
11	Stop valve cap	45	Top plate assy
12	Check valve	46	Front plate assy
13	Valve core	47	Front plate (2) assy
14	Shraeder round dustcap	48	Side plate assy
15	Low pressure switch	49	Part.Plate assy
16	High pressure switch	50	Fan motor stand
17	Solenoid valve body	51	Fan motor stand (up)
18	Liquid stop valve assy	52	Fan motor stand left
19	FI233 Filter	53	Fan motor stand right
20	Strainer	54	Suction grill
21	T-joint	55	Packing case p/m
22	Gas stop valve assy	56	Cover
23	Filter	57	Piping cover (rear)
24	Motor operated valve body	58	Stop valve mounting plate
25	Ele. compo. mounting assy	59	Bell mouth assy
26	PCB assy	60	Air discharge grill
27	Resin cover assy	61	Handle
28	El. compo. box lower cover	62	Bottom frame assy
29	Magnetic switch	63	Installation leg painted
30	Transformer	64	Bottom tray assy
31	Fan motor capacitor	65	Cushion top
32	Motor operated valve coil	66	Thermistor fixing plate
33	Thermistor	67	Single phase ac fan motor
34	Thermistor	68	Thermistor mounting spring
69	Thermistor mounting spring	72	Hps cable
70	Insulation material	73	Solenoid valve coil
71	Insulation tube (gas)	74	Stopper

1.5 RP125L7W1

Exploded view

The illustration below shows the exploded view.



Components

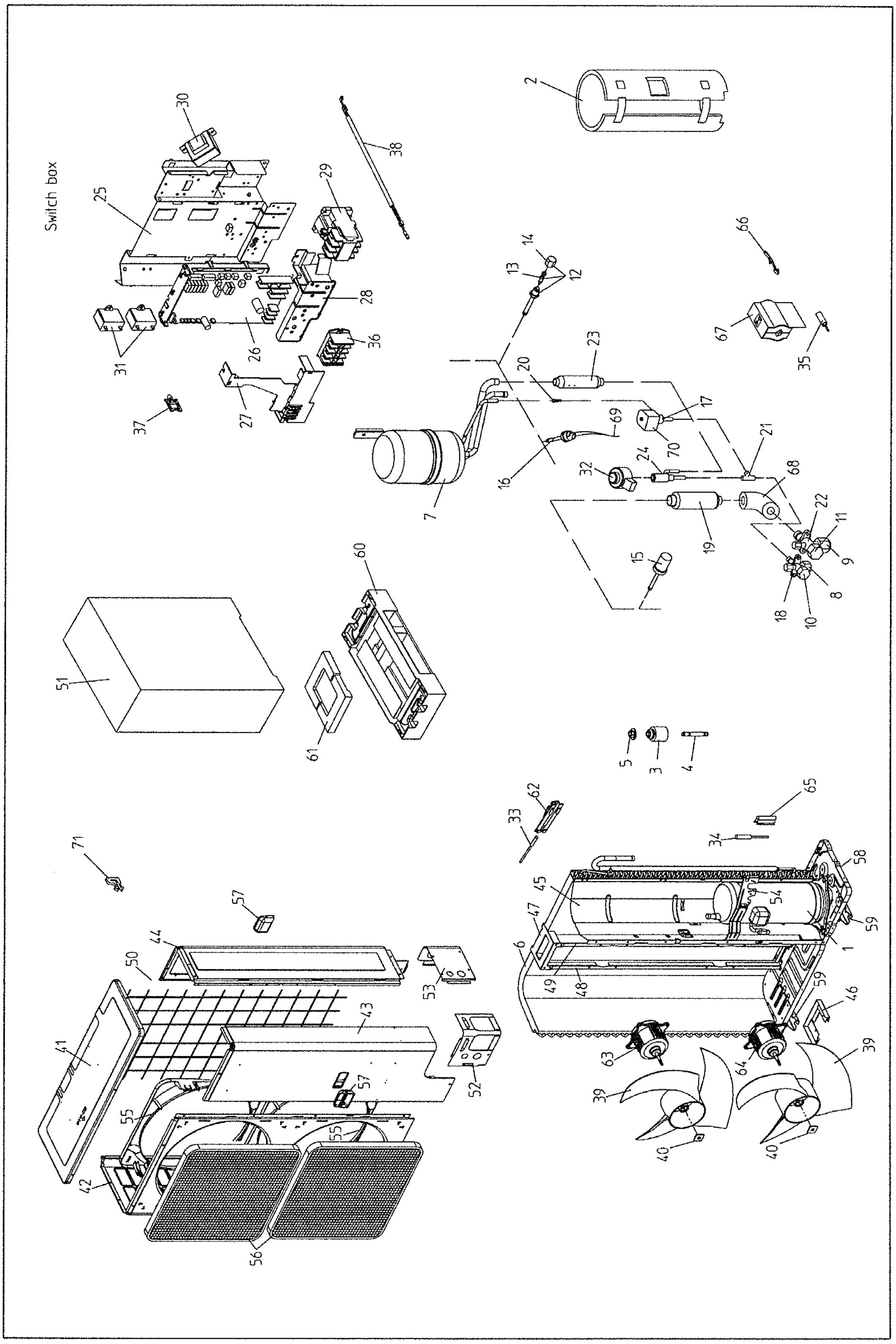
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	#7026# Compressor	35	Thermistor
2	Sound insulation (for comp/1)	36	Terminal strip
3	Rubber cushion pre-assy	37	Wire clip
4	Bolt for compressor	38	Compressor cable
5	Nut with washer	39	Fan propellor
6	Plate finned coil heat exch as	40	Washer
7	Liquid receiver assy	41	Top plate assy
8	Flare nut 3/8	42	Front plate assy
9	Flare nut FNS-6	43	Front plate (2) assy
10	Valve cap	44	Side plate assy
11	Stop valve cap	45	Part.Plate assy
12	Check valve	46	Fan motor stand
13	Valve core	47	Fan motor stand (up)
14	Shraeder round dustcap	48	Fan motor stand left
15	Low pressure switch	49	Fan motor stand right
16	High pressure switch	50	Suction grill
17	Solenoid valve body	51	Packing case p/m
18	Liquid stop valve assy	52	Cover
19	FI233 Filter	53	Piping cover (rear)
20	Strainer	54	Stop valve mounting plate
21	T-joint	55	Bell mouth assy
22	Gas stop valve assy	56	Air discharge grill
23	Filter	57	Handle
24	Motor operated valve body	58	Bottom frame assy
25	Ele. compo. mounting assy	59	Installation leg painted
26	PCB assy	60	Bottom tray assy
27	Resin cover assy	61	Cushion top
28	El. compo. box lower cover	62	Thermistor fixing plate
29	Magnetic switch	63	Single phase ac fan motor
30	Transformer	64	Single phase ac fan motor
31	Fan motor capacitor	65	Thermistor mounting spring
32	Motor operated valve coil	66	Thermistor mounting spring
33	Thermistor	67	Insulation material
34	Thermistor	68	Insulation tube (gas)
69	Hps cable	71	Stopper
70	Solenoid valve coil		

1.6 RYP100L7V1, RYP100L7W1

Exploded view

The illustration below shows the exploded view.



Components

The table below contains the components of the exploded view.

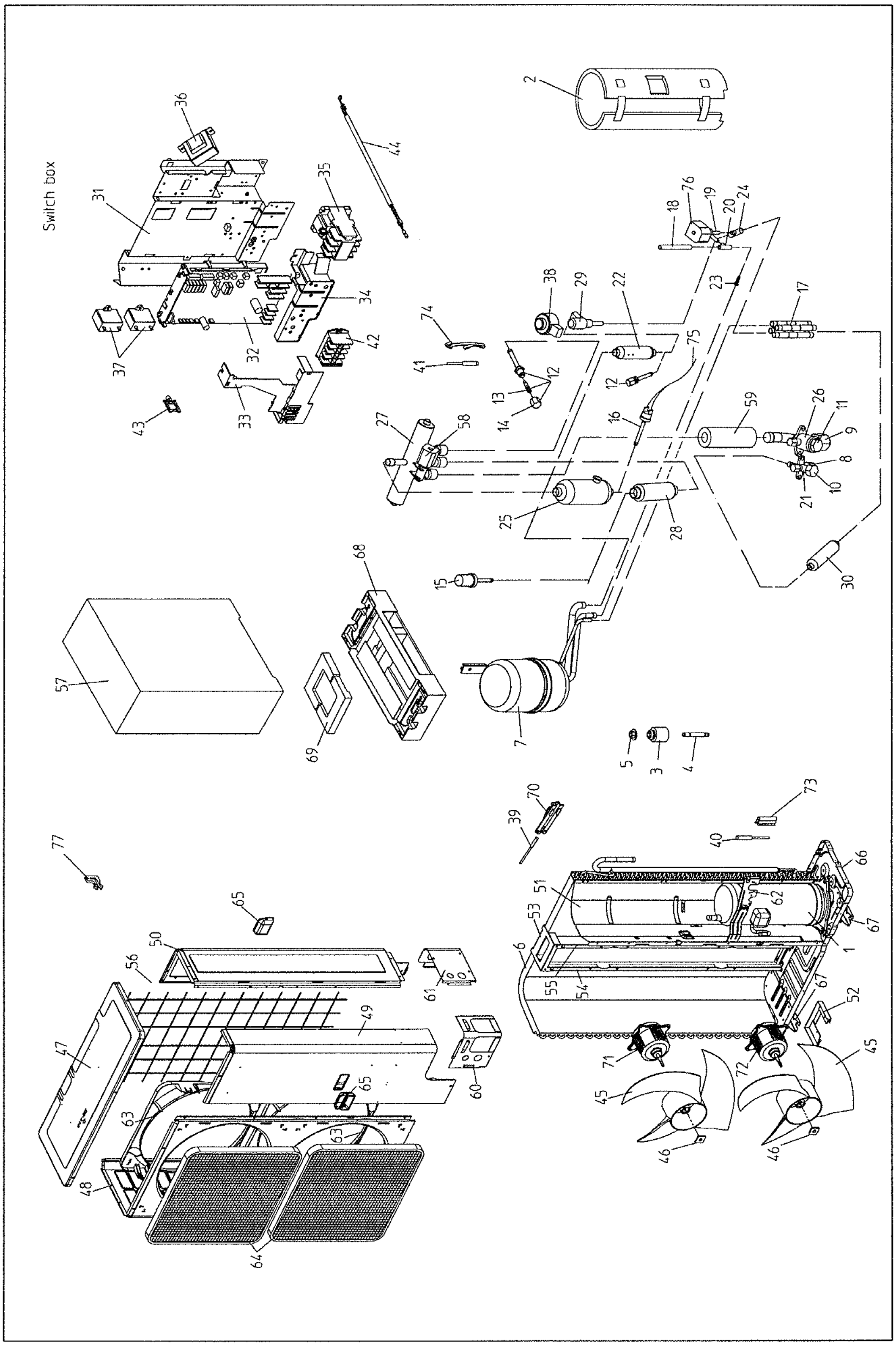
No.	Component	No.	Component
1	#7027# / #7038# Compressor	35	Magnetic switch
2	Sound insulation (for comp/1)	36	Transformer
3	Rubber cushion pre-assy	37	Fan motor capacitor
4	Bolt for compressor	38	Motor operated valve coil
5	Nut with washer	39	Thermistor
6	Plate finned coil heat exch as	40	Thermistor
7	Liquid receiver assy	41	Thermistor
8	Flare nut 3/8	42	Capacitor fixing band
9	Flare nut FNS-6	43	Capacitor fixing band
10	Valve cap	44	Com. motor capacitor
11	Stop valve cap	45	Com. motor capacitor
12	Check valve	46	Wire clip
13	Valve core	47	Compressor cable
14	Shraeder round dustcap	48	Fan propellor
15	Low pressure switch	49	Washer
16	High pressure switch	50	Top plate assy
17	Check valve	51	Front plate assy
18	Check valve	52	Front plate (2) assy
19	Solenoid valve body	53	Side plate assy
20	T-joint TSS2-2-2	54	Part.Plate assy
21	Liquid stop valve assy	55	Fan motor stand
22	FI233 Filter	56	Fan motor stand (up)
23	Strainer	57	Fan motor stand left
24	T-joint	58	Fan motor stand right
25	Muffler	59	Suction grill
26	Gas stop valve assy	60	Packing case p/m
27	4-way valve	61	Coil of 4-way valve
28	Filter	62	Thermal insulation tube
29	Motor operated valve body	63	Cover
30	Filter	64	Piping cover (rear)
31	Ele. compo. box lower cover	65	Stop valve mounting plate
32	PCB assy	66	Bell mouth assy
33	PCB assy	67	Air discharge grill
34	El. compo. box lower cover	68	Handle
69	Bottom frame assy	75	Thermistor mounting spring
70	Installation leg painted	76	Thermistor mounting spring
71	Bottom tray assy	77	HPS cable
72	Cushion top	78	Solenoid valve coil
73	Thermistor fixing plate	79	Stopper
74	Single phase ac fan motor	80	Terminal strip

5

1.7 RYP125L7W1

Exploded view

The illustration below shows the exploded view.



Components

The table below contains the components of the exploded view.

No.	Component	No.	Component
1	#7026# Compressor	35	Magnetic switch
2	Sound insulation (for comp/1)	36	Transformer
3	Rubber cushion pre-assy	37	Fan motor capacitor
4	Bolt for compressor	38	Motor operated valve coil
5	Nut with washer	39	Thermistor
6	Plate finned coil heat exch as	40	Thermistor
7	Liquid receiver assy	41	Thermistor
8	Flare nut 3/8	42	Terminal strip
9	Flare nut FNS-6	43	Wire clip
10	Valve cap	44	Compressor cable
11	Stop valve cap	45	Fan propellor
12	Check valve	46	Washer
13	Valve core	47	Top plate assy
14	Shraeder round dustcap	48	Front plate assy
15	Low pressure switch	49	Front plate (2) assy
16	High pressure switch	50	Side plate assy
17	Check valve	51	Part.Plate assy
18	Check valve	52	Fan motor stand
19	Solenoid valve body	53	Fan motor stand (up)
20	T-joint TSS2-2-2	54	Fan motor stand left
21	Liquid stop valve assy	55	Fan motor stand right
22	FI233 Filter	56	Suction grill
23	Strainer	57	Packing case p/m
24	T-joint	58	Coil of 4-way valve
25	Muffler	59	Thermal insulation tube
26	Gas stop valve assy	60	Cover
27	4-way reversing valve body	61	Piping cover (rear)
28	Filter	62	Stop valve mounting plate
29	Motor operated valve body	63	Bell mouth assy
30	Filter	64	Air discharge grill
31	Ele. compo. mounting assy	65	Handle
32	PCB assy	66	Bottom frame assy
33	Resin cover assy	67	Installation leg painted
34	El. compo. box lower cover	68	Bottom tray assy
69	Cushion top	74	Thermistor mounting spring
70	Thermistor fixing plate	75	HPS cable
71	Single phase ac fan motor	76	Solenoid valve coil
72	Single phase ac fan motor	77	Stopper
73	Thermistor mounting spring		

2 Disassembly and Maintenance: Indoor Units

2.1 What Is in This Chapter?

Introduction

This chapter contains the following information on the indoor units:

- ➤ Exploded views
- ➤ Components.
- ➤ Disassembly procedures

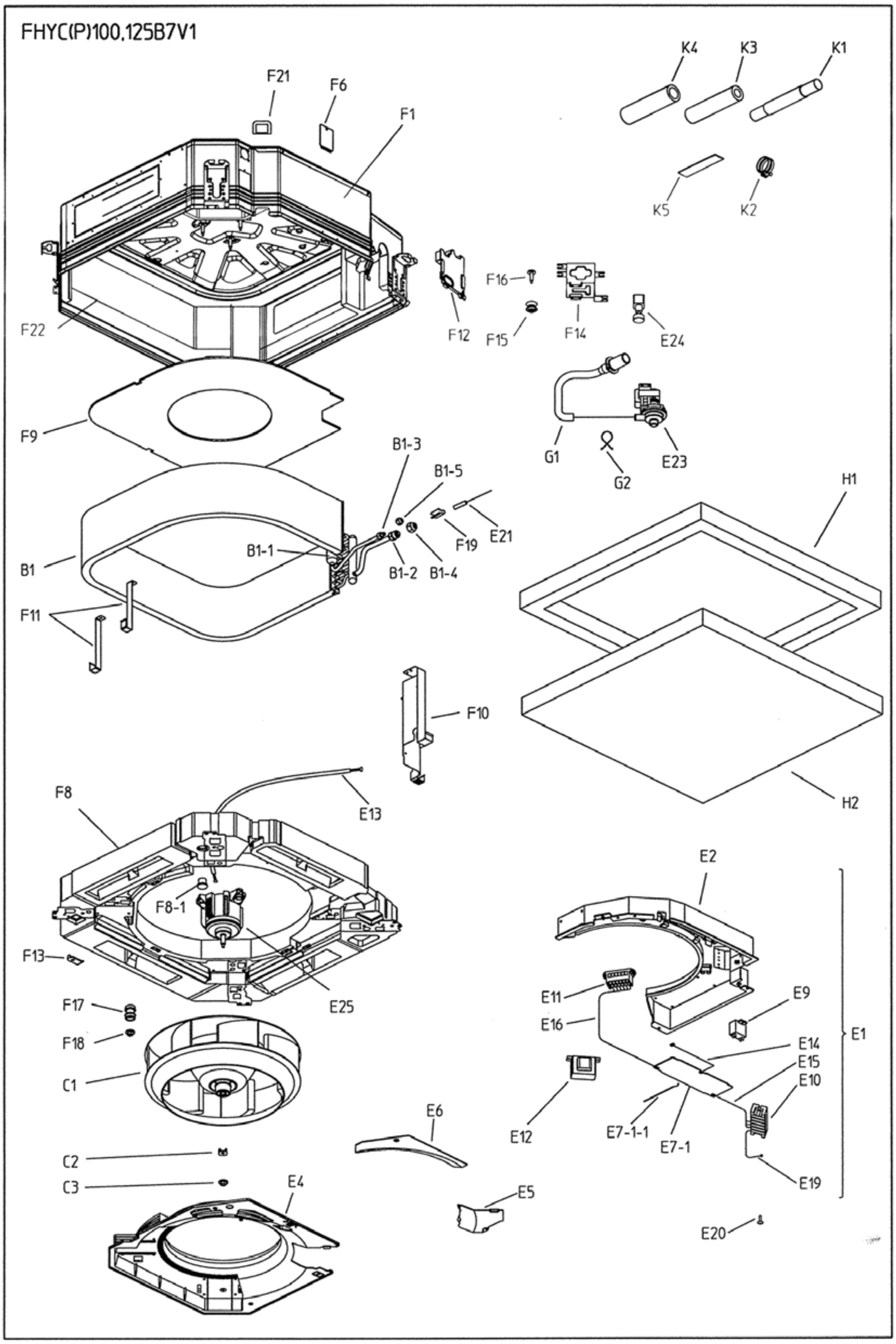
Overview

This chapter contains the following topics:

2.2 FHYCP35B7V1, FHYCP45B7V1, FHYCP60B7V1 and FHYCP71B7V1

Exploded view

The illustration below shows the exploded view.



Components

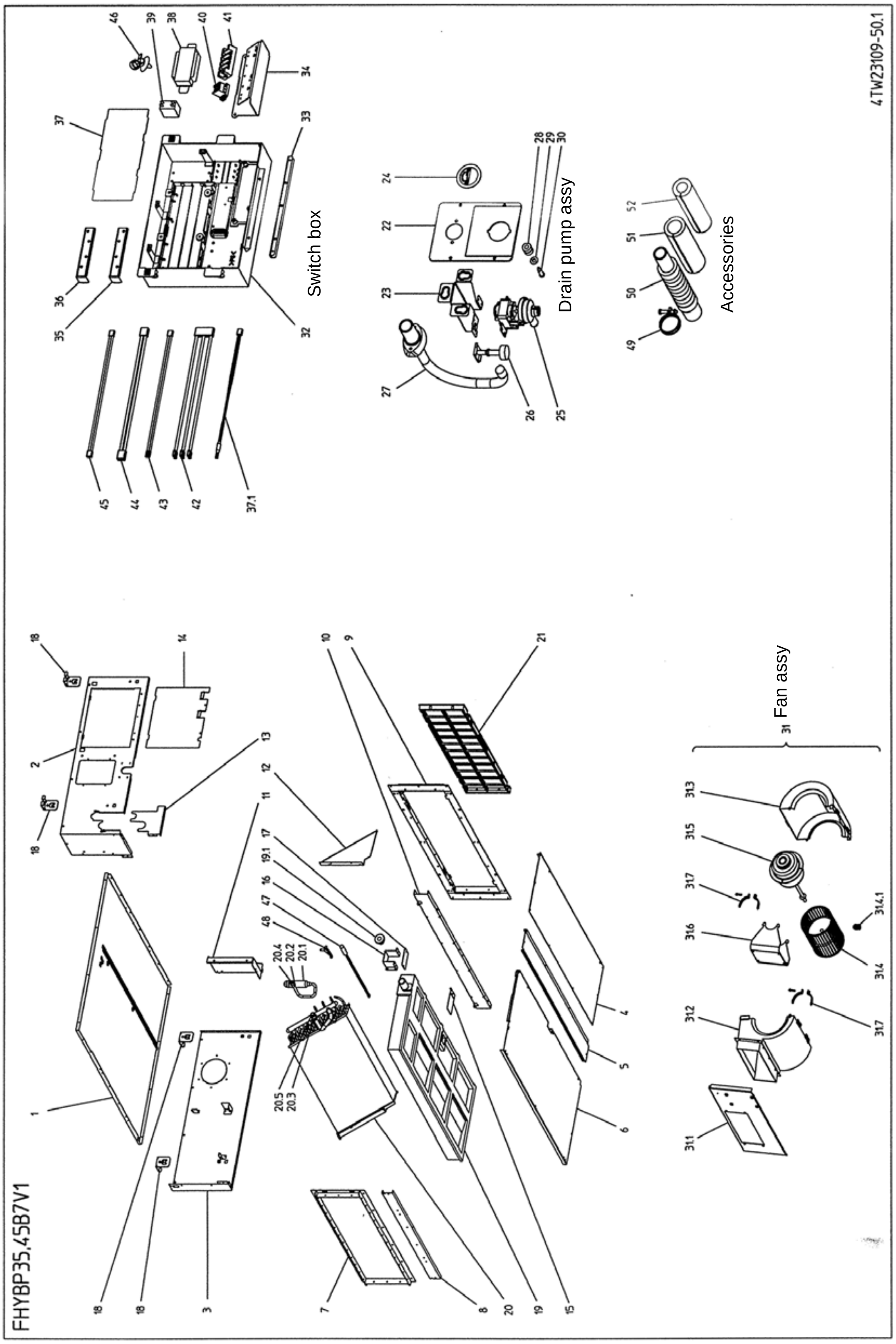
The table below contains the components of the exploded view.

No.	Component	No.	Component
B1	Heat exchanger assy	E24	Float switch
B1.1	Distributor with filter	E25	Fan motor
B1.2	Single union joint	F1	Casing assy
B1.3	Single union joint	F6	Inspection cover assy
B1.4	Flare nut	F8	Drain pan assy
B1.5	Flare nut	F8.1	Drain plug
C1	Fan rotor (turbo)	F9	Sound absorbing material
C2	Lock washer	F10	Heat exchanger blind plate assy
C3	Nut with washer	F11	Heat exchanger mounting plate
E1	Switch box assy	F12	Hold plate assy
E2	Switch box body	F13	Panel mounting plate
E4	Bell mouth	F14	Drain pump mounting plate
E5	Switch box cover assy 1	F15	Vibration isolator
E6	Switch box cover 2	F16	Hexagon mounting bolt
E7.1	PCB assy	F17	Vibration isolator
E7.1.1	Air thermistor	F18	Nut with washer
E9	Capacitor	F19	Feeler bulb clamp
E10	Terminal	F21	Rubber bush
E11	Terminal block	F22	Inner heat insulator
E12	Power supply transformer	G1	Drain hose
E13	Wire harness	G2	Hose band
E14	Wire harness	H1	Top tray assy
E15	Wire harness	H2	Bottom tray assy
E16	Wire harness	K1	Drain hose assy
E19	Grounding wire	K2	Hose band
E20	Grounding screw	K3	Insulation for joint (liquid)
E21	Thermistor (liquid)	K4	Insulation for joint (gas)
E23	Drain pump	K5	Sealing material

2.3 FHYBP35B7V1 and FHYBP45B7V1

Exploded view

The illustration below shows the exploded view.



Components

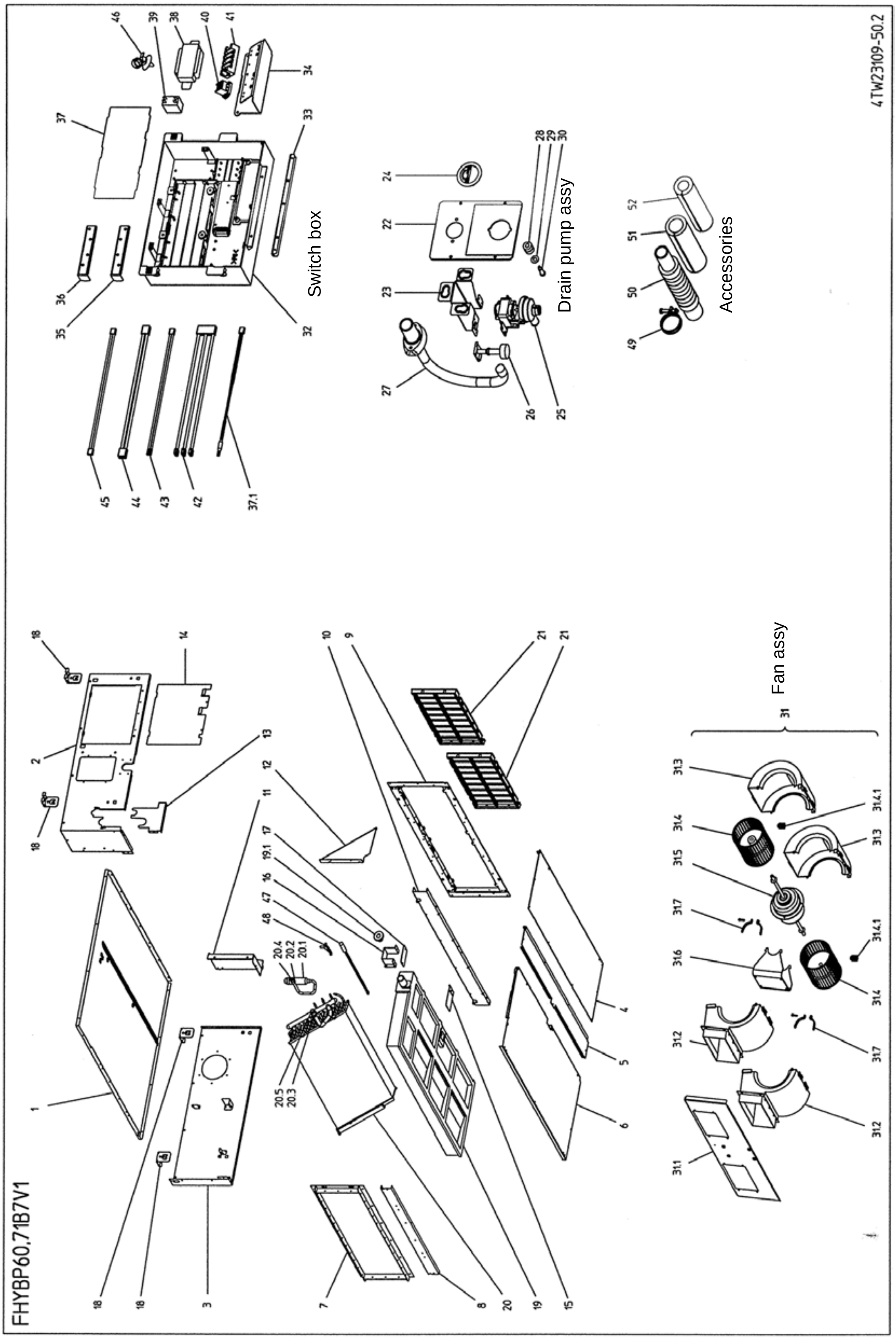
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	Top plate assy	31.1	Fan top plate
2	Right plate assy	31.2	Fan housing bottom
3	Left plate assy	31.3	Fan housing top
4	Interchangeable plate	31.4	Rotor assy
5	Small bottom plate	31.4.1	Hexagon socket screw
6	Large bottom plate	31.5	Fan motor
7	Air outlet flange	31.6	Fan motor stand
8	Center stay assy	31.7	Motor fixing plate assy
9	Air filter holding plate assy	31.8	Rotor assy
10	Stay for fan top panel assy	31.8.1	Hexagon socket screw
11	Fan side blind plate assy	31.9	Shaft assy
12	Cooler side blind plate assy	31.10	Coupling
13	Pipe setting plate assy	31.11	Vibro proof rubber assy
14	Swtich box cover assy	31.12	Bearing board
15	Drain pan setting plate	31.13	Bearing fixing plate
16	Drain socket cover assy 1	32	Switch box body
17	Drain socket cover assy 2	33	Switch box fixing plate
18	Suspension bracket	34	Terminal fixing plate
19	Drain pan assy	35	Option fixing plate left
19.1	Drain socket cap	36	Option fixing plate right
20	Heat exchanger assy	37	PCB assy
20.1	Distributor with filter assy	37.1	Air thermistor
20.2	Single union joint	38	Power supply transformer
20.3	Single union joint	39	Fan motor capacitor
20.4	Flare nut	40	Terminal for remote controller
20.5	Flare nut	41	Terminal for power supply
21	Air filter assy	42	Wire harness
22	Service cover assy	43	Wire harness
23	Drain pump fixing plate	44	Wire harness
24	Service cover cap assy	45	Wire harness
25	Drain pump	46	Tie wrap with clip
26	Float switch	47	Thermistor (liquid)
27	Drain hose assy	48	Thermistor fixing blade
28	Vibration absorber	49	Metal clamp
29	Plain washer	50	Drain hose
30	Fitting bolt drain pump	51	Insulation for joint (gas)
31	Fan assy	52	Insulation for joint (liquid)

2.4 FHYBP60B7V1 and FHYBP71B7V1

Exploded view

The illustration below shows the exploded view.



Components

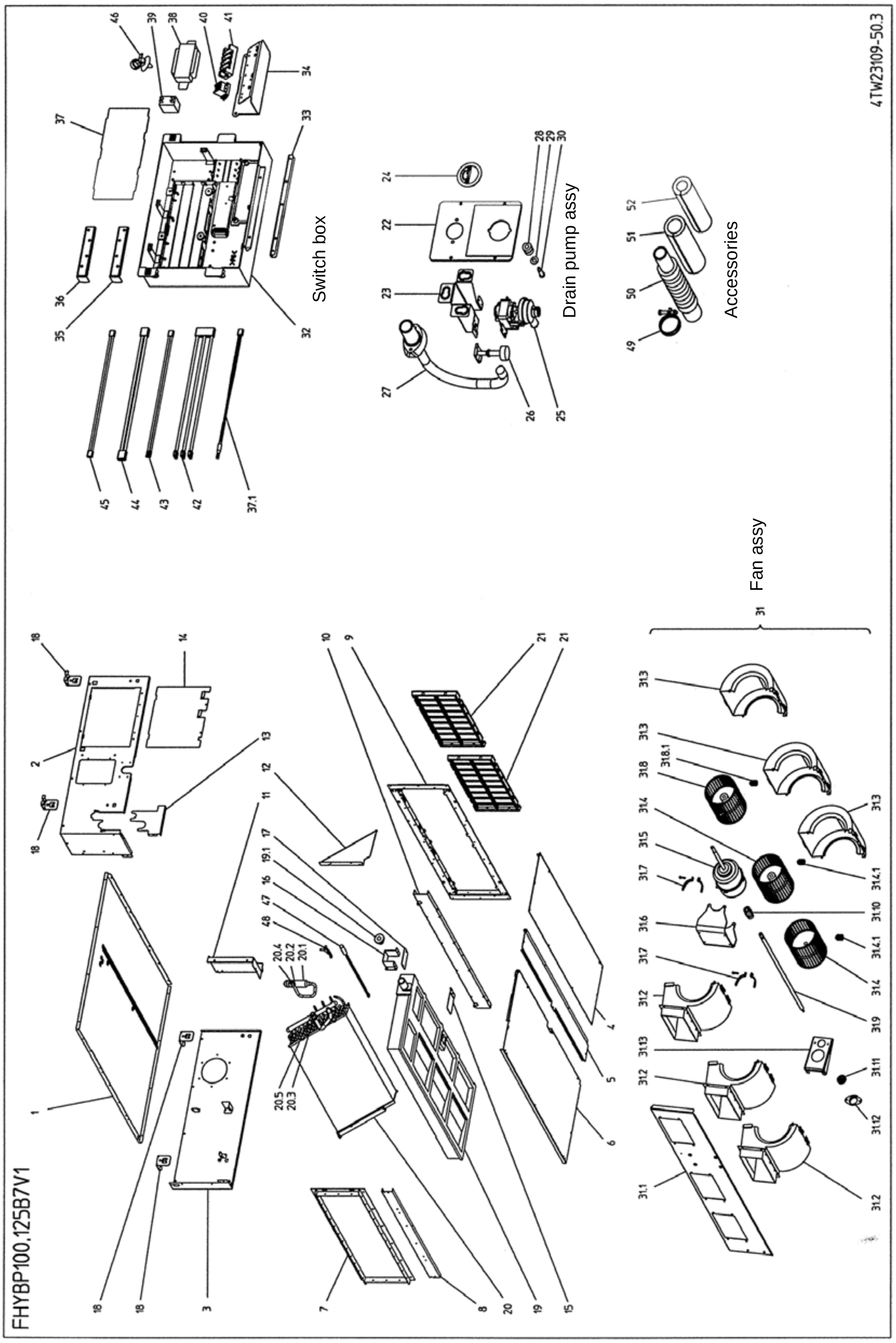
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	Top plate assy	31.1	Fan top plate
2	Right plate assy	31.2	Fan housing bottom
3	Left plate assy	31.3	Fan housing top
4	Interchangeable plate	31.4	Rotor assy
5	Small bottom plate	31.4.1	Hexagon socket screw
6	Large bottom plate	31.5	Fan motor
7	Air outlet flange	31.6	Fan motor stand
8	Center stay assy	31.7	Motor fixing plate assy
9	Air filter holding plate assy	31.8	Rotor assy
10	Stay for fan top panel assy	31.8.1	Hexagon socket screw
11	Fan side blind plate assy	31.9	Shaft assy
12	Cooler side blind plate assy	31.10	Coupling
13	Pipe setting plate assy	31.11	Vibro proof rubber assy
14	Swtich box cover assy	31.12	Bearing board
15	Drain pan setting plate	31.13	Bearing fixing plate
16	Drain socket cover assy 1	32	Switch box body
17	Drain socket cover assy 2	33	Switch box fixing plate
18	Suspension bracket	34	Terminal fixing plate
19	Drain pan assy	35	Option fixing plate left
19.1	Drain socket cap	36	Option fixing plate right
20	Heat exchanger assy	37	PCB assy
20.1	Distributor with filter assy	37.1	Air thermistor
20.2	Single union joint	38	Power supply transformer
20.3	Single union joint	39	Fan motor capacitor
20.4	Flare nut	40	Terminal for remote controller
20.5	Flare nut	41	Terminal for power supply
21	Air filter assy	42	Wire harness
22	Service cover assy	43	Wire harness
23	Drain pump fixing plate	44	Wire harness
24	Service cover cap assy	45	Wire harness
25	Drain pump	46	Tie wrap with clip
26	Float switch	47	Thermistor (liquid)
27	Drain hose assy	48	Thermistor fixing blade
28	Vibration absorber	49	Metal clamp
29	Plain washer	50	Drain hose
30	Fitting bolt drain pump	51	Insulation for joint (gas)
31	Fan assy	52	Insulation for joint (liquid)

2.5 FHYBP100B7V1 and FHYBP125B7V1

Exploded view

The illustration below shows the exploded view.



Components

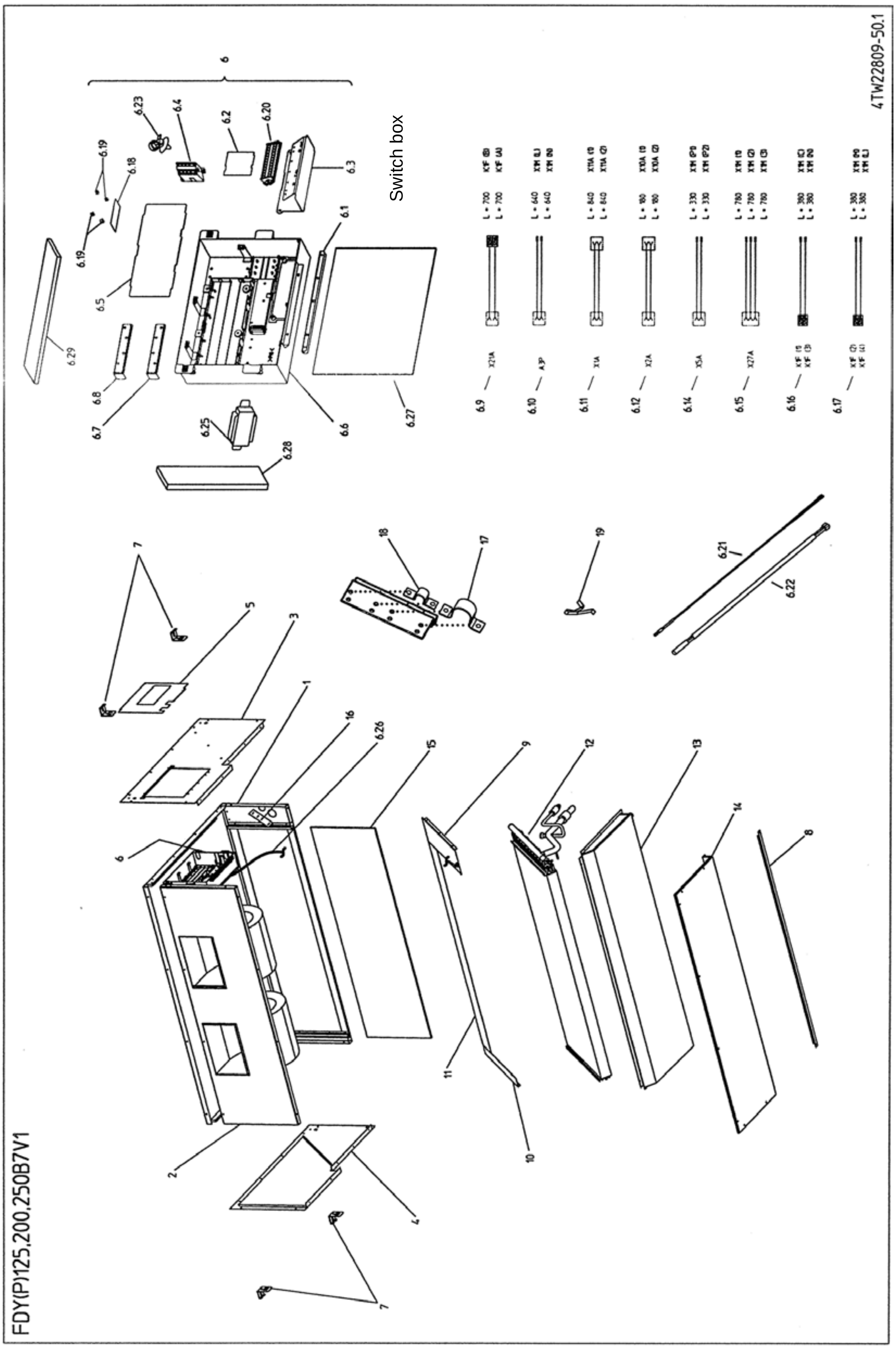
The table below contains the components of the exploded view.

No.	Component	No.	Component
1	Top plate assy	31.1	Fan top plate
2	Right plate assy	31.2	Fan housing bottom
3	Left plate assy	31.3	Fan housing top
4	Interchangeable plate	31.4	Rotor assy
5	Small bottom plate	31.4.1	Hexagon socket screw
6	Large bottom plate	31.5	Fan motor
7	Air outlet flange	31.6	Fan motor stand
8	Center stay assy	31.7	Motor fixing plate assy
9	Air filter holding plate assy	31.8	Rotor assy
10	Stay for fan top panel assy	31.8.1	Hexagon socket screw
11	Fan side blind plate assy	31.9	Shaft assy
12	Cooler side blind plate assy	31.10	Coupling
13	Pipe setting plate assy	31.11	Vibro proof rubber assy
14	Swtich box cover assy	31.12	Bearing board
15	Drain pan setting plate	31.13	Bearing fixing plate
16	Drain socket cover assy 1	32	Switch box body
17	Drain socket cover assy 2	33	Switch box fixing plate
18	Suspension bracket	34	Terminal fixing plate
19	Drain pan assy	35	Option fixing plate left
19.1	Drain socket cap	36	Option fixing plate right
20	Heat exchanger assy	37	PCB assy
20.1	Distributor with filter assy	37.1	Air thermistor
20.2	Single union joint	38	Power supply transformer
20.3	Single union joint	39	Fan motor capacitor
20.4	Flare nut	40	Terminal for remote controller
20.5	Flare nut	41	Terminal for power supply
21	Air filter assy	42	Wire harness
22	Service cover assy	43	Wire harness
23	Drain pump fixing plate	44	Wire harness
24	Service cover cap assy	45	Wire harness
25	Drain pump	46	Tie wrap with clip
26	Float switch	47	Thermistor (liquid)
27	Drain hose assy	48	Thermistor fixing blade
28	Vibration absorber	49	Metal clamp
29	Plain washer	50	Drain hose
30	Fitting bolt drain pump	51	Insulation for joint (gas)
31	Fan assy	52	Insulation for joint (liquid)

2.6 FDYP125B7V1

Exploded view

The illustration below shows the exploded view.



Components

The table below contains the components of the exploded view.

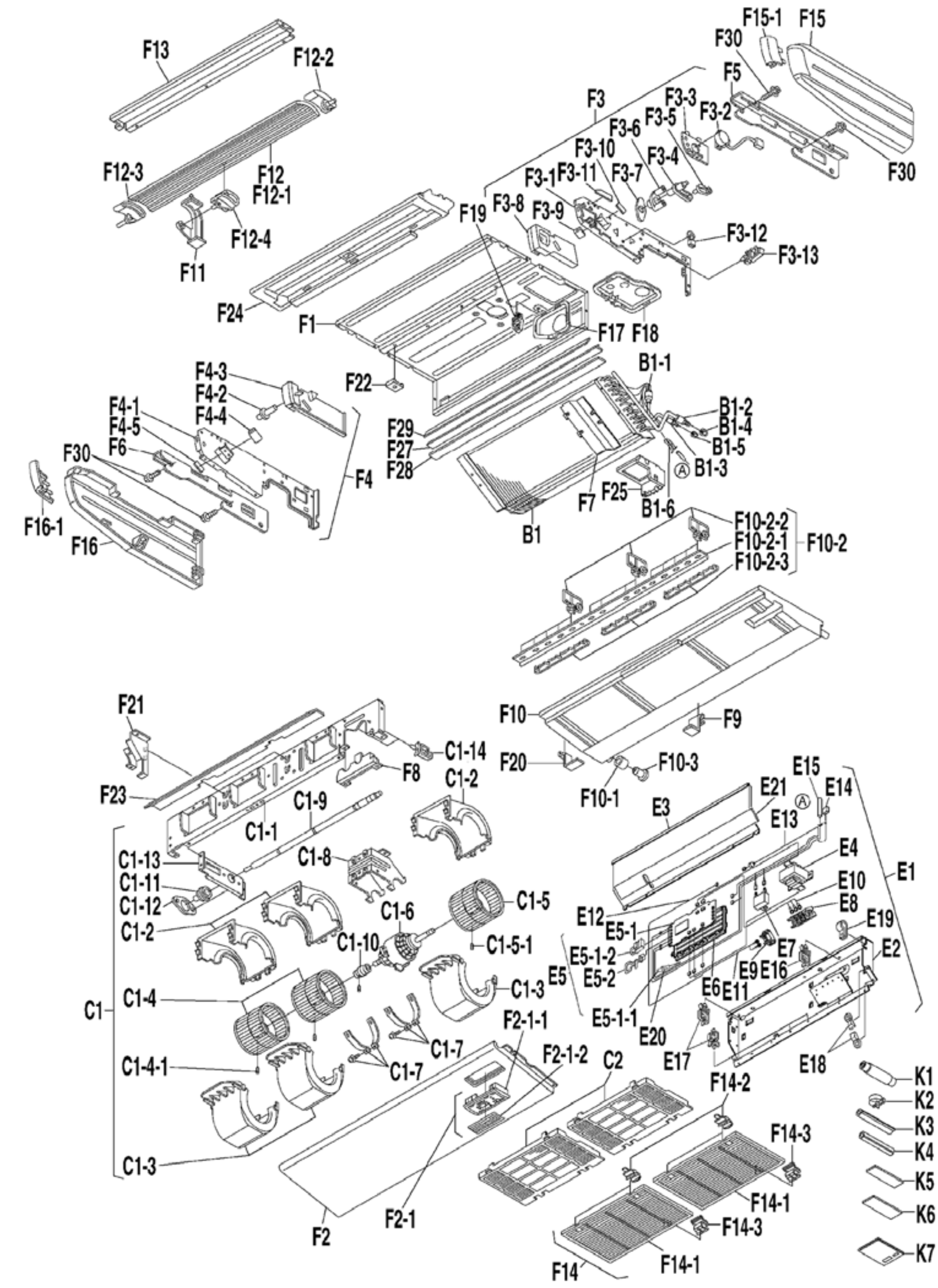
No.	Component	No.	Component
1	Top plate assy	6.20	Terminal strip
2	Fan assy + fan mounting plate	6.21	Thermistor
3	Side plate right	6.22	Thermistor
4	Side plate left	6.23	Tie wrap with clip
5	Service cover assy	6.24	PCB assy
6	Switch box assy	6.25	Power supply transformer
6.1	Switch box fixing plate	6.26	Grounding wire
6.2	PCB assy power supply	6.27	Insulation switch box
6.3	Terminal fixing plate	6.28	Insulation switch box
6.4	Magnetic contactor	6.29	Insulation switch box
6.5	PCB assy	7	Hook
6.6	Switch box body	8	Filter cover
6.7	Option fixing plate left	9	Fixture heat exchanger right
6.8	Option fixing plate right	10	Fixture heat exchanger left
6.9	Wire harness	11	Bypass sealing plate
6.10	Wire harness	12	Heat exchanger assy
6.11	Wire harness power supply	13	Drain pan assy
6.12	Wire harness power supply	14	Bottom plate assy
6.14	Wire harness	15	Air filter
6.15	Wire harness	16	Pipe fixing plate
6.16	Wire harness	17	Clamp
6.17	Wire harness	18	Clamp
6.18	PCB assy	19	Thermistor (fixing)
6.19	Locking guard spacer	—	

2.7 FHYP35BV1 and FHYP45BV1

Exploded view

The illustration below shows the exploded view.

FHYP35BV1, FHYP45BV1



Components

The table below contains the components of the exploded view.

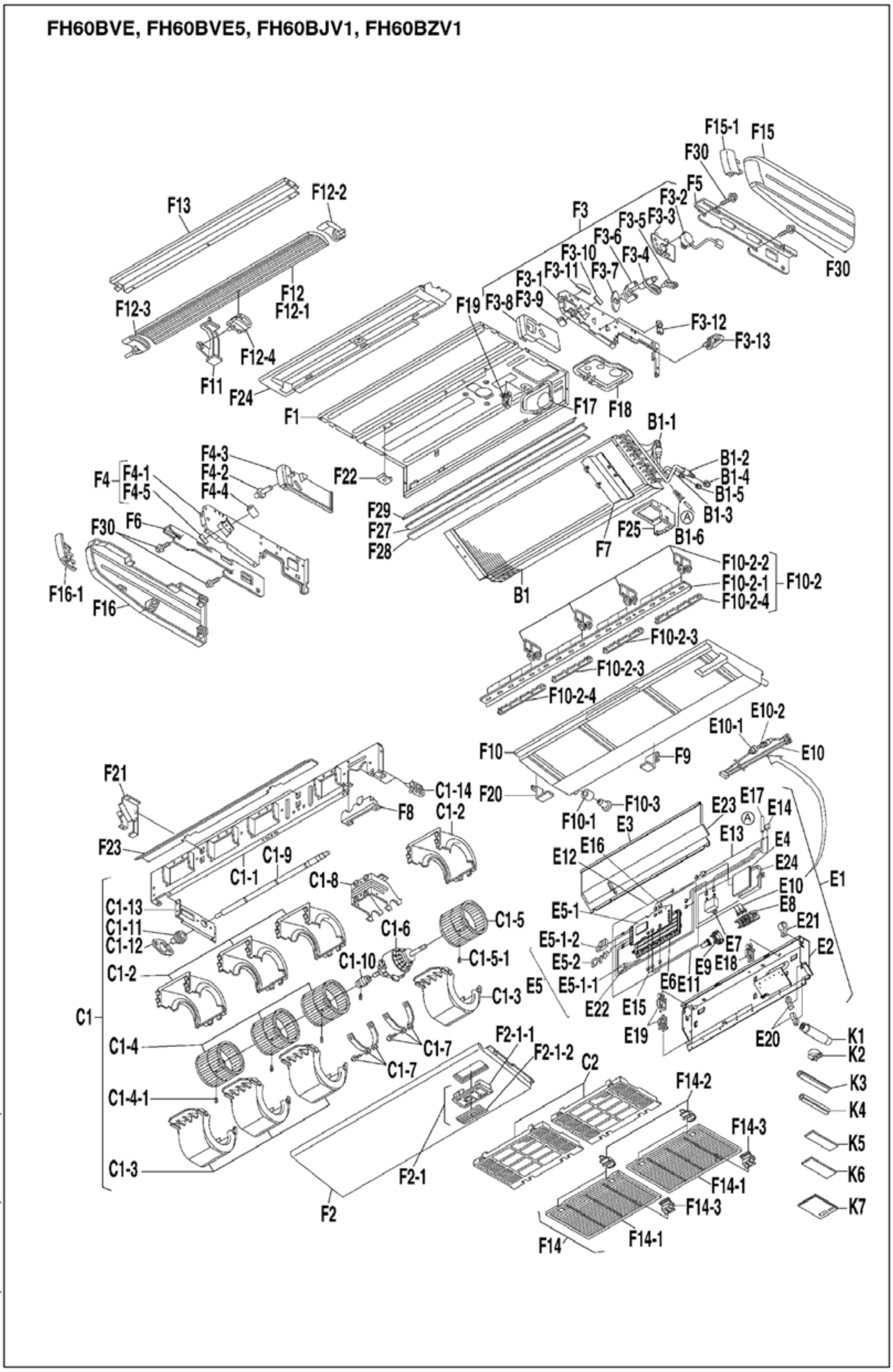
No.	Component	No.	Component	No.	Component
B1	Evaporator assy	E14	Wire harness (swing motor)	F10.1	Insulation tube
B1.1	Distributor	E15	Wire harness (power unit)	F10.2	Vertical vane air discharge
B1.2	Union joint (gas line)	E16	Wire harness (power unit)	F10.2.1	Set plate vertical vane
B1.3	Union joint (liquid line)	E17	Thermistor	F10.2.2	Vertical vane air discharge
B1.4	Flare nut	E18	Wire clip	F10.2.3	Connecting bar vertical vane
B1.5	Flare nut	E19	Clamp	F10.3	Cap drain socket
B1.6	Retainer thermistor	E20	Lock metal	F11	Supporter
C1	Fan assy	E21	Wire clip	F12	Horizontal vane assy
C1.1	Top plate fan assy	E22	Bush thermistor	F12.1	Horizontal vane
C1.2	Fan housing	E23	Sound absorbing material	F12.2	Rod horizontal vane
C1.3	Fan housing	E24	Housing power unit	F12.3	Rod horizontal vane
C1.4	Fan rotor	F1	Top plate assy	F12.4	Rod horizontal vane
C1.4.1	Hexagon socket screw	F2	Bottom plate assy	F13	Decorative plate
C1.5	Fan rotor	F2.1	Name plate assy	F14	Air suction grille assy
C1.5.1	Hexagon socket screw	F2.1.1	Housing signal receiver	F14.1	Air suction grille
C1.6	Fan motor	F2.1.2	DAIKIN name plate	F14.2	Fixture air suction grille
C1.7	Lock metal fan motor	F3	Side plate assy (right)	F14.3	Hinge air suction grille
C1.8	Motor base	F3.1	Side plate (right)	F15	Side plate assy
C1.9	Fan shaft	F3.2	Swing motor assy	F15.1	Cover side plate
C1.10	Coupling fan shaft	F3.3	Set plate swing motor	F16	Side plate (left)
C1.11	Fan bearing	F3.4	Connecting arm horizontal vane	F17	Blind plate piping hole
C1.12	Bearing holder	F3.5	Crank air swing	F18	Blind plate piping hole
C1.13	Set plate bearing holder	F3.6	Bearing horizontal vane	F19	Wire clip
C1.14	Wire clip	F3.7	Heat insulation material	F20	Set plate drain pan
C2	Air filter	F3.8	Heat insulation material	F21	Supporter fan
E1	Electric components assy	F3.9	Heat insulation material	F22	Retainer
E2	Switch box	F3.10	Sealer	F23	Air guide plate
E3	Cover switch box	F3.11	Sealer	F24	Heat insulation cover top plate
E4	Printed circuit (power unit)	F3.12	Lock metal	F25	Insulation cover piping hole
E5	Printed circuit	F3.13	Wire clip	F27	Protector heat exchanger
E5.1	Printed circuit (control unit)	F4	Side plate assy	F28	Heat insulation cover
E5.1.1	Air thermistor	F4.1	Side plate (left)	F29	Heat insulation cover
E5.1.2	Connector	F4.2	Bearing horizontal vane	F30	Suspension bolt
E5.2	Capacity control adaptor	F4.3	Heat insulation material	K1	Drain hose
E6	Plastic case	F4.4	Heat insulation material	K2	Hose band
E7	Capacitor fan motor	F4.5	Heat insulation material	K3	Insulation tube (liquid line)
E8	Terminal block	F5	Hook metal	K4	Insulation tube (gas line)
E9	Terminal block	F6	Hook metal	K5	Sealer
E10	Wire harness (transmission)	F7	Side plate heat exchanger	K6	Sealer
E11	Wire harness (remote controller)	F8	Retainer refrigerant piping	K7	Operation manual
E12	Wire harness (feed back)	F9	Set plate drain pan		
E13	Wire harness (fan motor)	F10	Drain pan assy		

5

2.8 FHYP60BV1 and FHYP71BV1

Exploded view

The illustration below shows the exploded view.



Components

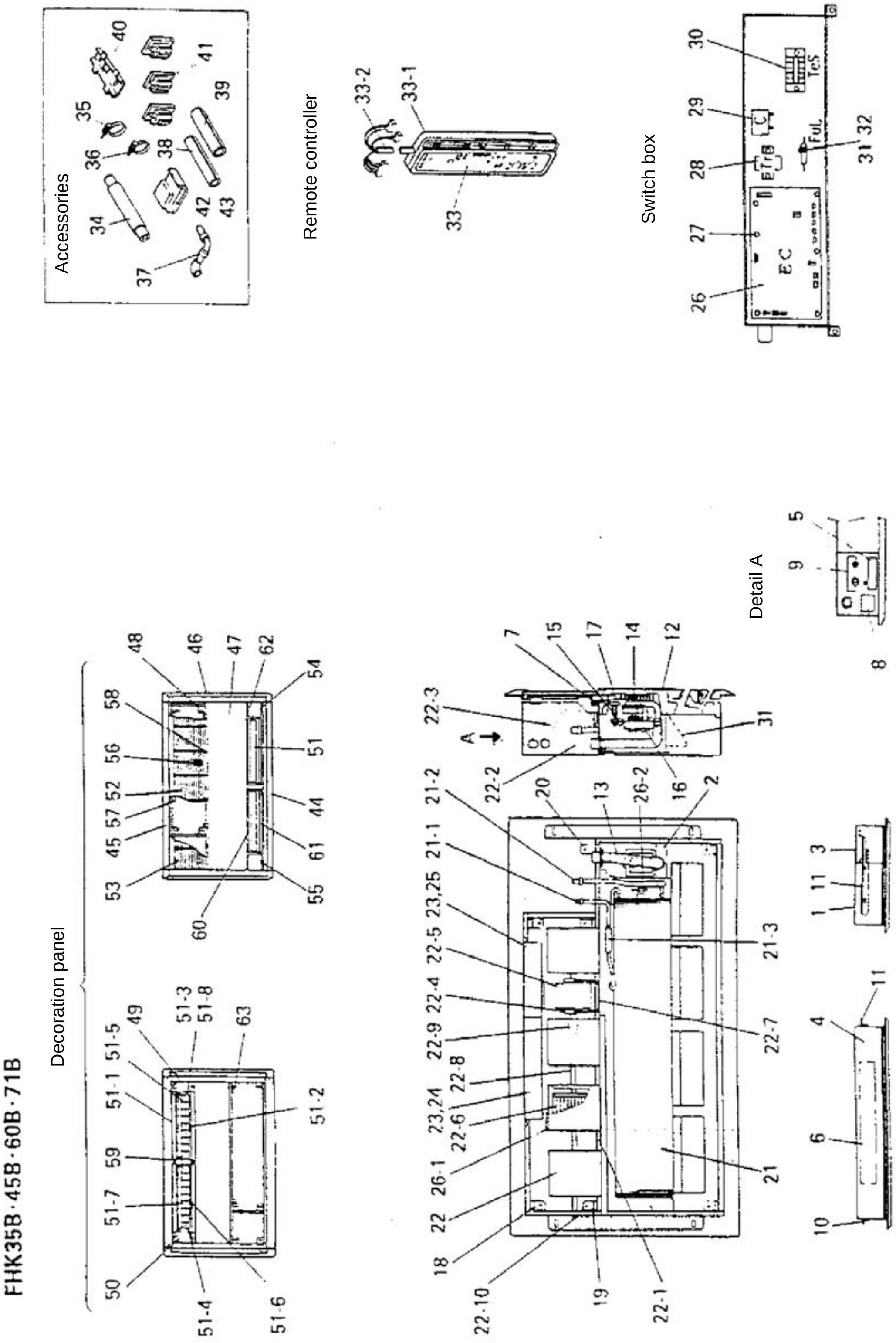
The table below contains the components of the exploded view.

No.	Component	No.	Component	No.	Component
B1	Evaporator assy	E13	Wire harness (fan motor)	F10.1	Insulation tube
B1.1	Distributor	E14	Wire harness (swing motor)	F10.2	Vertical vane air discharge
B1.2	Union joint (gas line)	E15	Wire harness (power unit)	F10.2.1	Set plate vertical vane
B1.3	Union joint (liquid line)	E16	Wire harness (power unit)	F10.2.2	Vertical vane air discharge
B1.4	Flare nut	E17	Thermistor	F10.2.3	Connect. bar vertical vane
B1.5	Flare nut	E18	Wire clip	F10.2.4	Connect. bar vertical vane
B1.6	Retainer thermistor	E19	Wire clip	F10.3	Cap drain socket
C1	Fan assy	E20	Lock metal	F11	Supporter
C1.1	Top plate fan assy	E21	Clamp	F12	Horizontal vane assy
C1.2	Fan housing	E22	Bush thermistor	F12.1	Horizontal vane
C1.3	Fan housing	E23	Sound absorbing material	F12.2	Rod horizontal vane
C1.4	Fan rotor	E24	Housing power unit	F12.3	Rod horizontal vane
C1.4.1	Hexagon socket screw	F1	Top plate assy	F12.4	Rod horizontal vane
C1.5	Fan rotor	F2	Bottom plate assy	F13	Decorative plate
C1.5.1	Hexagon socket screw	F2.1	Name plate assy	F14	Air suction grille assy
C1.6	Fan motor	F2.1.1	Housing signal receiver	F14.1	Air suction grille
C1.7	Lock metal fan motor	F2.1.2	DAIKIN name plate	F14.2	Fixture air suction grille
C1.8	Motor base	F3	Side plate assy (right)	F14.3	Hinge air suction grille
C1.9	Fan shaft	F3.1	Side plate (right)	F15	Side plate assy
C1.10	Coupling fan shaft	F3.2	Swing motor assy	F15.1	Cover side plate
C1.11	Fan bearing	F3.3	Set plate swing motor	F16	Side plate (left)
C1.12	Bearing holder	F3.4	Connecting arm horizontal vane	F17	Blind plate piping hole
C1.13	Set plate bearing holder	F3.5	Crank air swing	F18	Blind plate piping hole
C1.14	Wire clip	F3.6	Bearing horizontal vane	F19	Wire clip
C2	Air filter	F3.7	Heat insulation material	F20	Set plate drain pan
E1	Electric components assy	F3.8	Heat insulation material	F21	Supporter fan
E2	Switch box	F3.9	Heat insulation material	F22	Retainer
E3	Cover switch box	F3.10	Sealer	F23	Air guide plate
E4	Printed circuit (power unit)	F3.11	Sealer	F24	Heat insulation cover top plate
E5	Printed circuit	F3.12	Lock metal	F25	Insulation cover piping hole
E5.1	Printed circuit (control unit)	F3.13	Wire clip	F27	Protector heat exchanger
E5.1.1	Air thermistor	F4	Side plate assy	F28	Heat insulation cover
E5.1.2	Connector	F4.1	Side plate (left)	F29	Heat insulation cover
E5.2	Capacity control adaptor	F4.2	Bearing horizontal vane	F30	Suspension bolt
E6	Plastic case	F4.3	Heat insulation material	K1	Drain hose
E7	Capacitor fan motor	F4.4	Heat insulation material	K2	Hose band
E8	Terminal block	F4.5	Heat insulation material	K3	Insulation tube (liquid line)
E9	Terminal block	F5	Hook metal	K4	Insulation tube (gas line)
E10	Wire harness (transmission)	F6	Hook metal	K5	Sealer
E10.1	Fuse holder	F7	Side plate heat exchanger	K6	Sealer
E10.2	Fuse	F8	Retainer refrigerant piping	K7	Operation manual
E11	Wire harness (remote controller)	F9	Set plate drain pan	—	
E12	Wire harness (feed back)	F10	Drain pan assy		

2.9 FHYKP35BV1, FHYKP45BV1, FHYKP60BV1 and FHYKP71BV1

Exploded view

The illustration below shows the exploded view.



Components

The table below contains the components of the exploded view.

No.	Component	No.	Component
1	Top plate	22.6	Fan motor
2	Partition plate drain pump	22.7	Motor base
3	Side plate fan chamber	22.8	Fan shaft
4	Front plate assy	22.9	Coupling
5	Wiring cover	22.10	Fan bearing
6	Blind plate ducting hole	23	Swtich box without devices
7	Drain pan holder	24	Cover switch box
8	Blind cover	25	Cover switch box
9	Cover piping hole	26	Printed circuit (control unit)
10	Suspend metal	26.1	Air thermistor
11	Suspend metal	26.2	Thermistor
12	Drain pan assy	27	Locking guard spacer
13	Drain hose	28	Transformer
14	Drain pump	29	Running capacitor
15	Buffer rubber drain pump	30	Terminal block
16	Set plate drain pump	31	Fuse holder
17	Float switch	32	Fuse control circuit
18	Fitting metal decoration panel	33	Remote controller
19	Fitting metal decoration panel	33.1	Bottom case remote controller
20	Fitting metal decoration panel	33.2	Lead wire remote controller
21	Evaporator	34	Drain hose
21.1	Union joint (liquid line)	35	Hose band
21.2	Union joint (gas line)	36	Hose band
21.3	Filter	37	Drain pipe
22	Fan assy with motor	38	Insulation tube
22.1	Top plate fan assy	39	Insulation tube
22.2	Fan housing	40	Hook remote controller
22.3	Fan housing	41	Staple
22.4	Clamp metal fan motor	42	Blind air discharge
22.5	Fan motor	43	Blind air discharge

2.10 FHYP100BV1 and FHYP125BV1

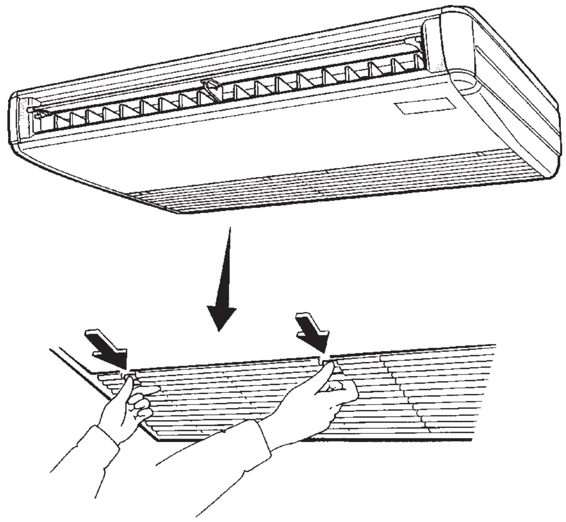
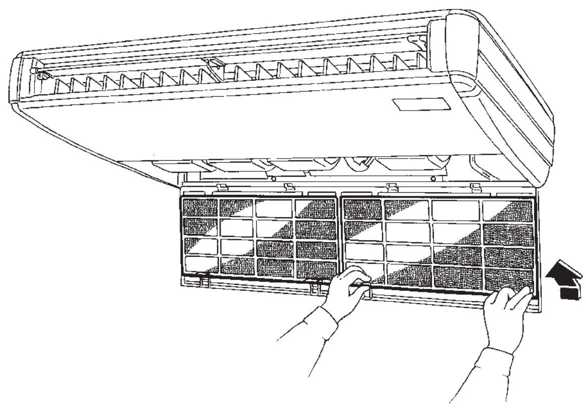
Overview

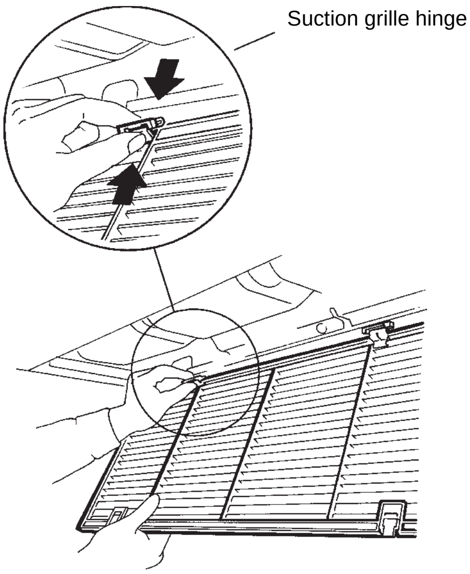
This part contains the following topics:

Warning

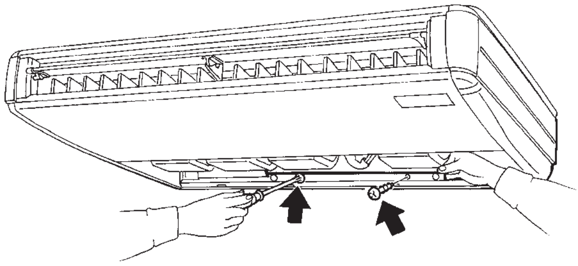
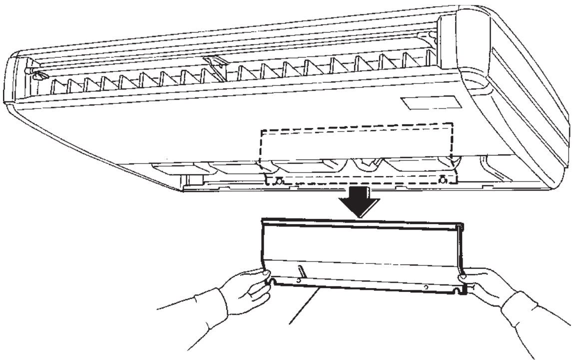
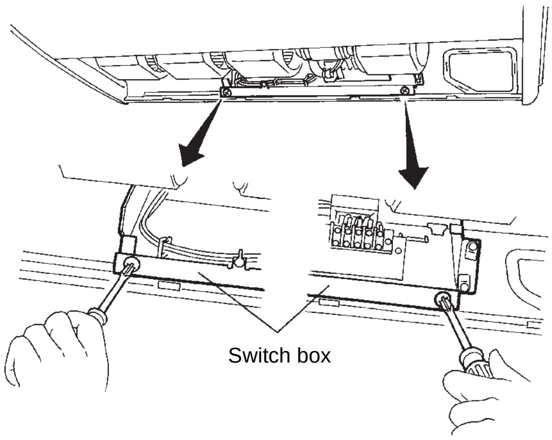
Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.

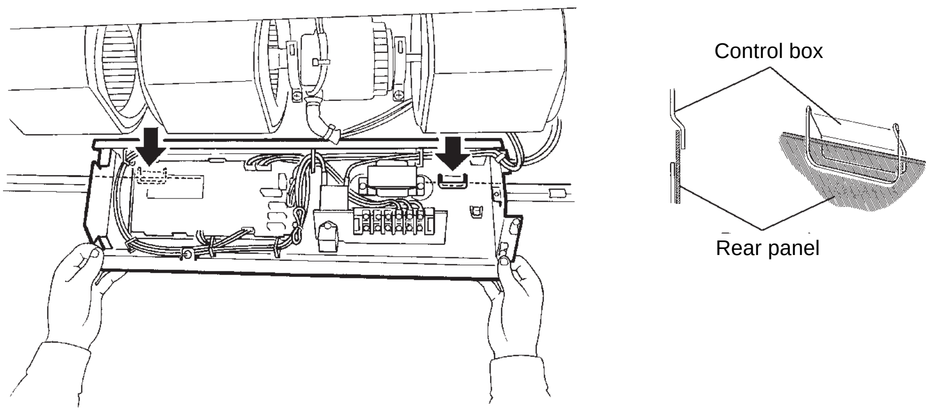
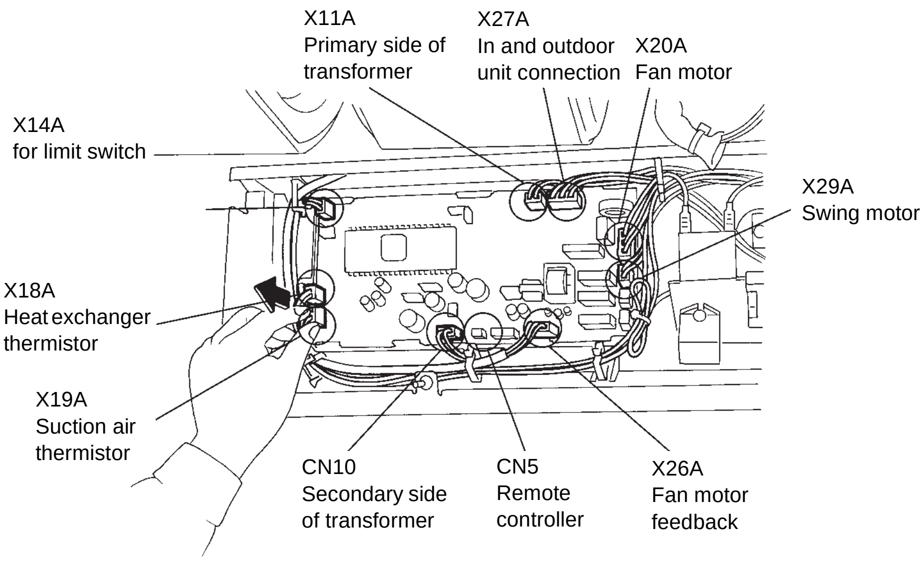
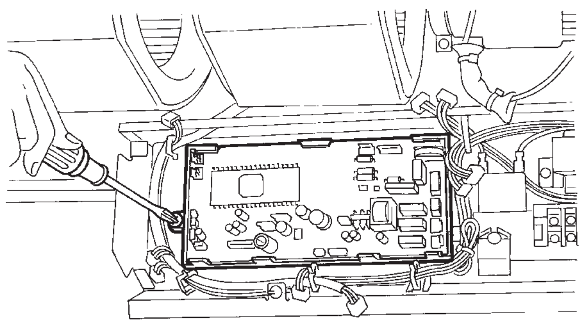
How to remove the Air Filter and Suction Grille

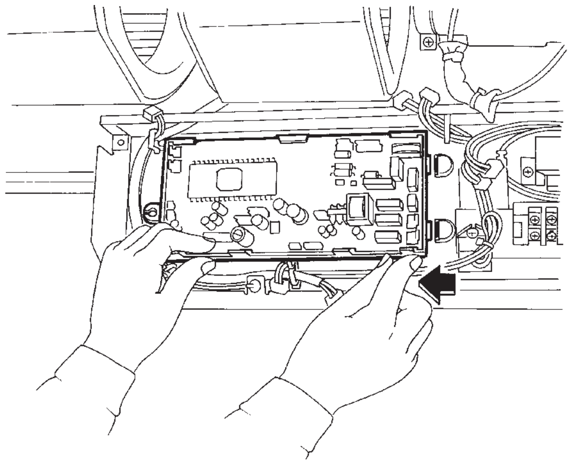
Step	Action
1	Push the 2 tabs and open the suction grilles. 
2	Push the air filter installation panel from 2 places in the direction of the arrow, and pull the air filter out toward yourself. 

Step	Action
3	Grip the suction grille hinge strongly and remove the suction grille. 

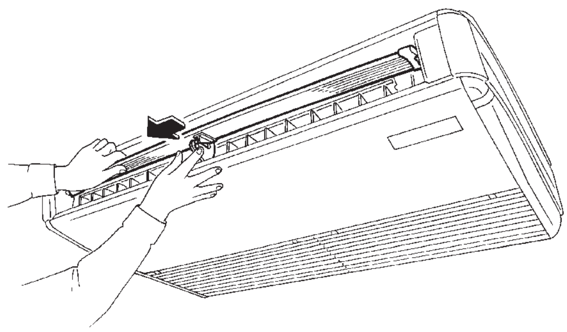
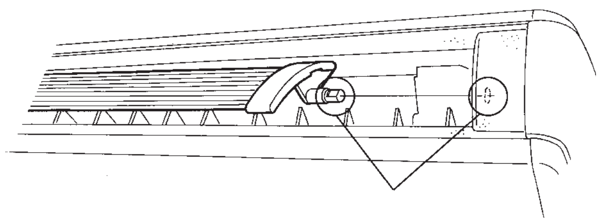
How to remove the Electrical Parts and PC Boards

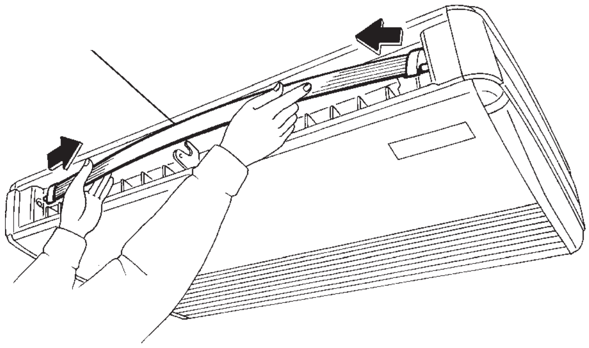
Step	Action
1	Loosen the 2 screws of the control box cover and remove the control box cover.  
2	Remove the 2 screws of the control box. 

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>3</td><td>Pull down the control box and let it hang by the 2 locations in the rear. Electrical parts can now be removed.

</td></tr>
<tr><td>4</td><td>Disconnect the connector mounted on the PC board.

</td></tr>
<tr><td>5</td><td>Remove the PC board installation screw.
</td></tr>
</table>

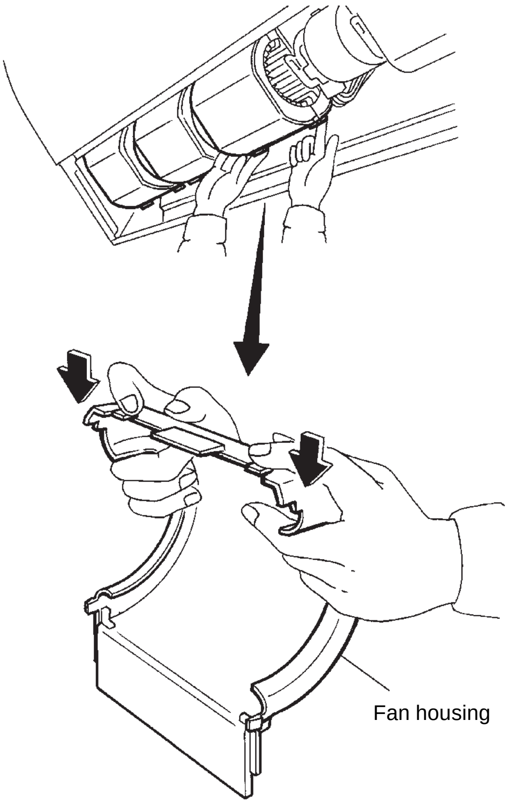
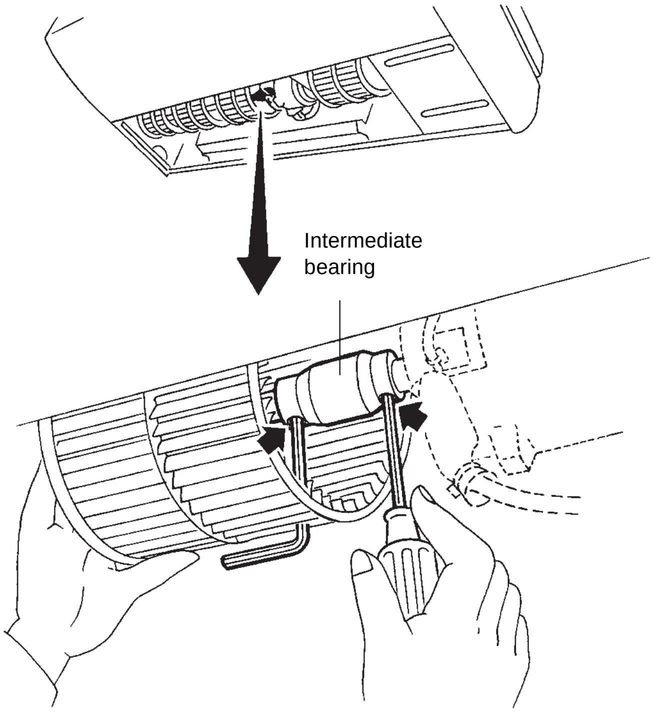
Step	Action
6	Slide the PC board to the left away from the tabs on the right, and remove the PC board. 

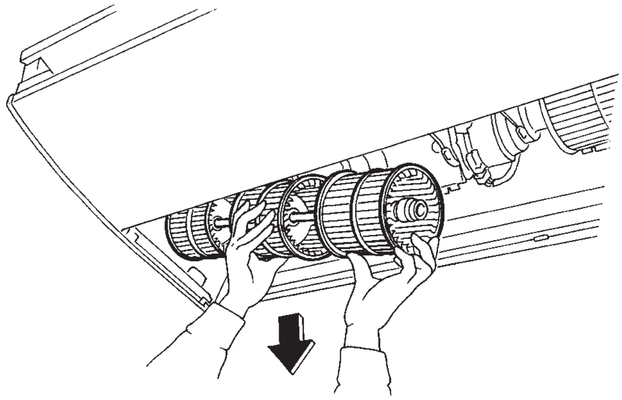
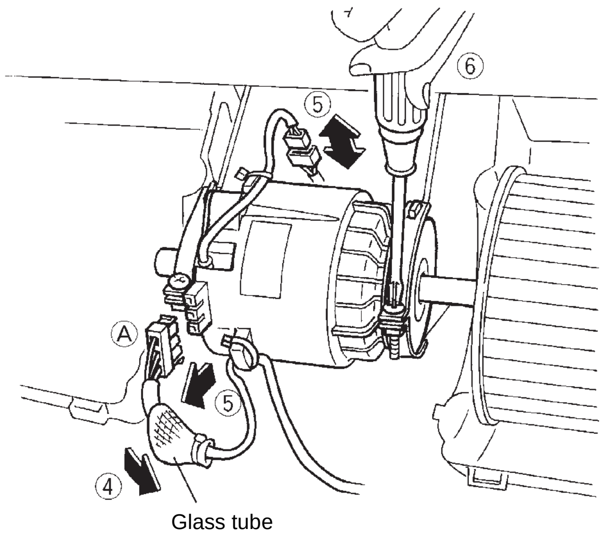
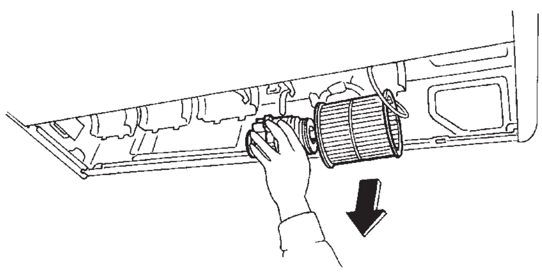
How to remove the Horizontal Blade

Step	Action
1	Gently bend the support plate located at the center of the horizontal blade, and detach the center shaft. (Two shafts provided on Types 140 and 160.)  **Reassembling precautions** The shaft at the right end of the horizontal blade is cut in D shape. Fit this D-shaped end to the D-profiled bearing. Reattach the horizontal blade at the right side first. 

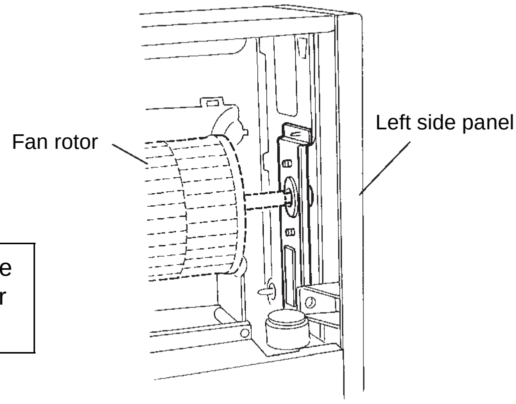
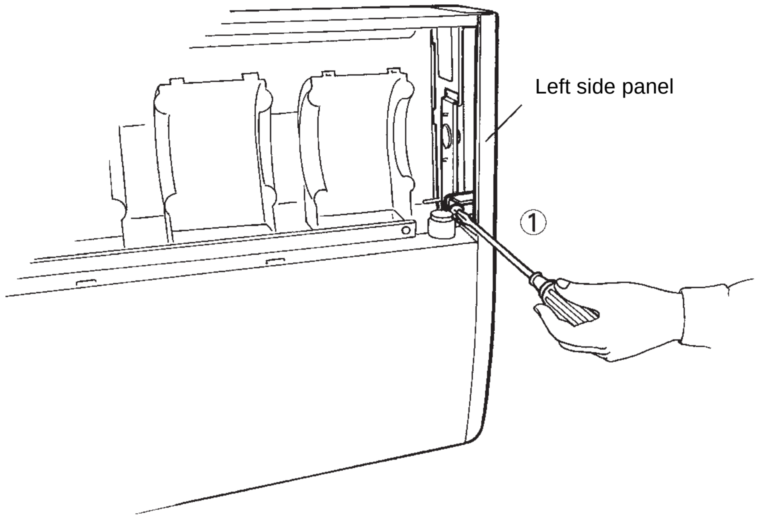
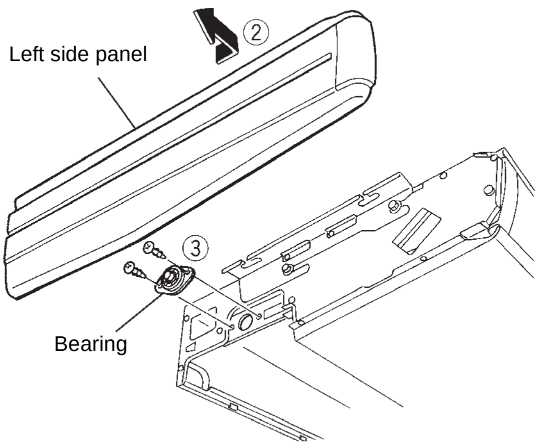
Step	Action
2	Then gently bend the center of the horizontal blade, and take both the end shafts out of their bearings.  * When removing the horizontal blade from the bearings at both ends, be careful not to get the blow port thermal insulation scratched.

How to remove the Fan Rotor and Motor

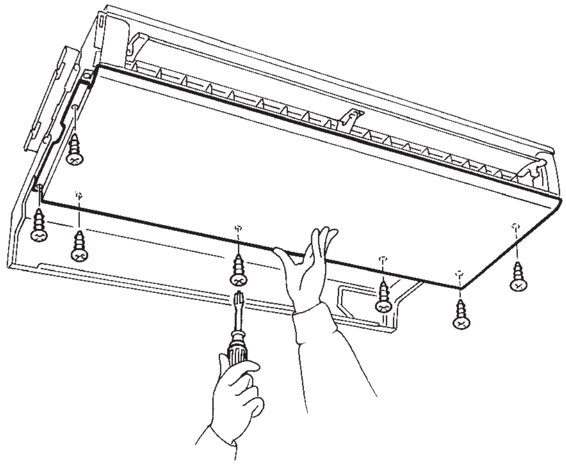
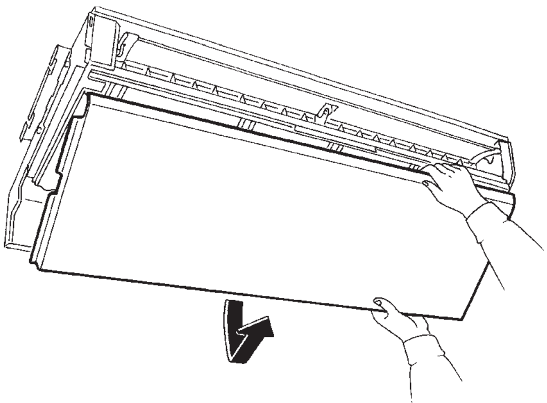
<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Push the 2 tabs of the fan housing towards the inside with your fingers and pull out the fan housing.

</td></tr>
<tr><td>2</td><td>Loosen the 2 hexagon set screws of the intermediate bearing..

</td></tr>
</table>

Step	Action
3	Slide the intermediate bearing to the right and remove the fan rotor assembly. 
4 **5** **6**	Cut off the tie-wrap of the glass tube cover over the fan motor connector. Slide the glass tube and get the connector exposed. Disconnect the 2 fan motor connectors. Remove the 2 fan motor fasteners.. 
7	Remove the fan motor. 

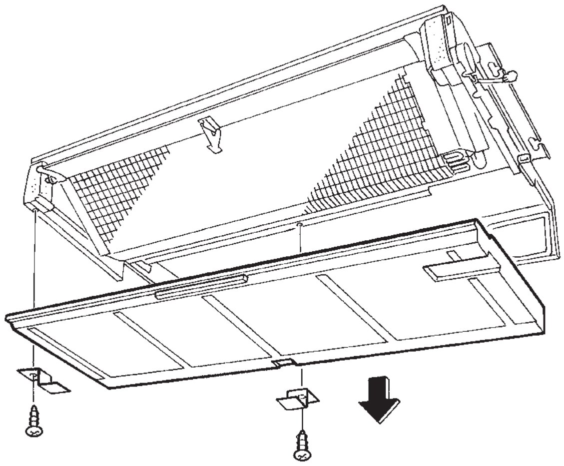
How to remove the Fan Bearing

Step	Action
1	Remove the left sidepanel installation screw.  * Remove the fan rotor according to the procedures for removing the fan rotor and fan motor. 
2	Slide the left side panel toward the front of the unit and remove;
3	Remove the 2 bearing installation screws and remove the bearing. 

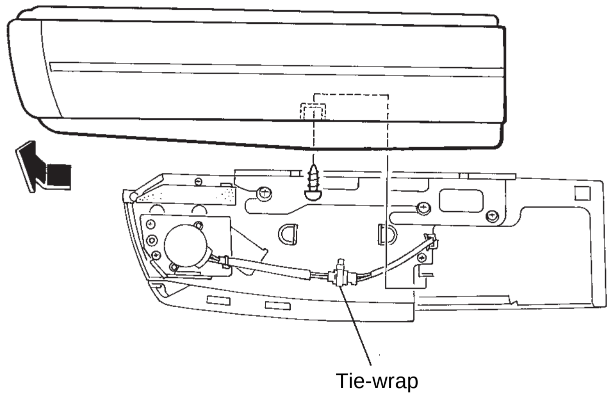
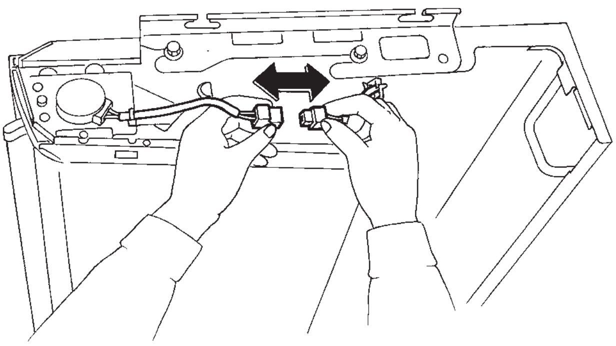
How to remove the Bottom Panel and Drain Pan

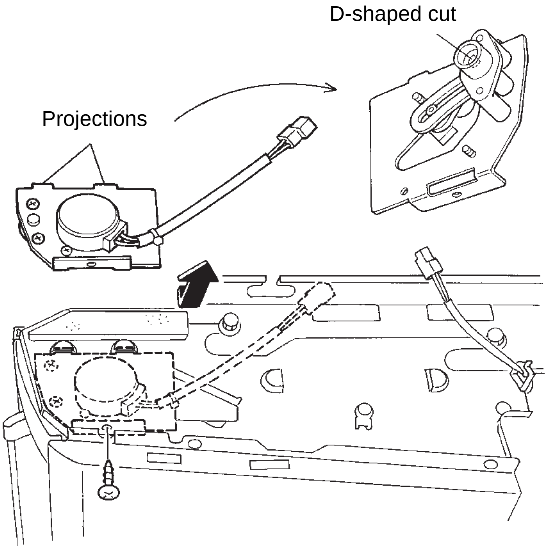
<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Remove the 7 bottom panel installation screws (2 each on the left and right, 3 in the rear), and remove the bottom panel.

* Remove the rear surface screws (2 each on the left and right), and remove the center screw while supporting the bottom panel from underneath.</td></tr>
<tr><td>2</td><td>Let down the rear of the bottom panel, push out toward the front (removed from the hooking part) and remove..
</td></tr>
</table>

5

Step	Action
3	Remove the drain pan retainer (2 screw). 

How to remove the Swing Motor

Step	Action
1	Remove the screw from the right side panel. Slide the right side panel toward the front and detach it.
2	Cut off the tie-wrap of the swing motor connector.. 
3	Disconnect the connector from the swing motor connector. 

Step	Action
4	Remove the screw from the swing motor. The swing motor has two projections on it. Lower the swing motor and take it out.  * When reassembling, fit the horizontal blade shaft end to the D-profiled bearing. Apply the tie-wrap to the connectors to secure them in place.

2.11 FUYP71~125BV17

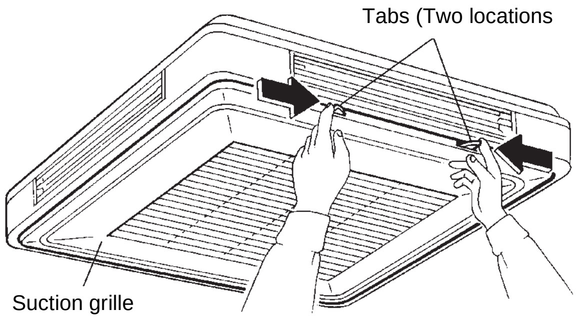
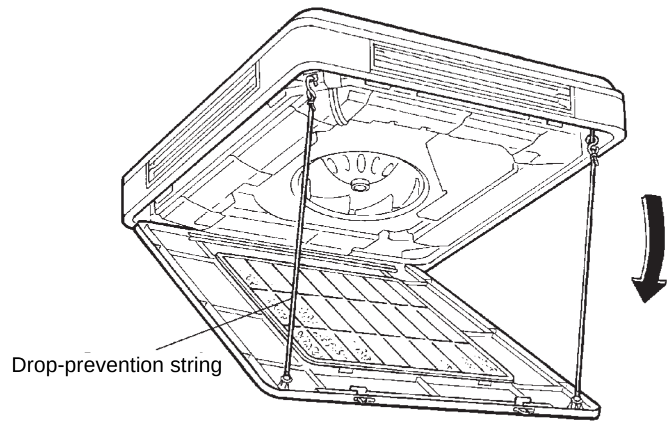
Overview

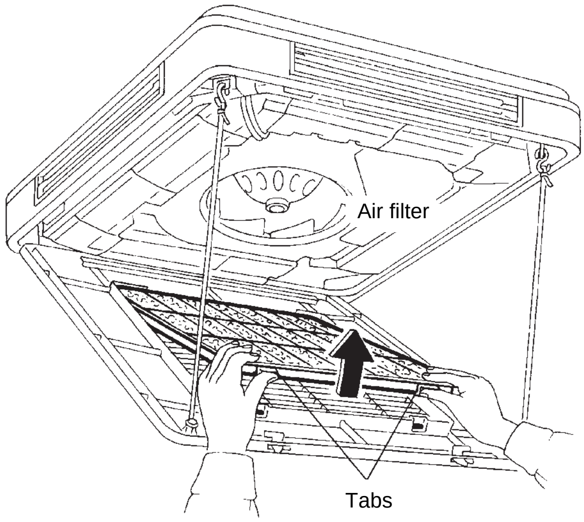
This part contains the following topics:

Warning

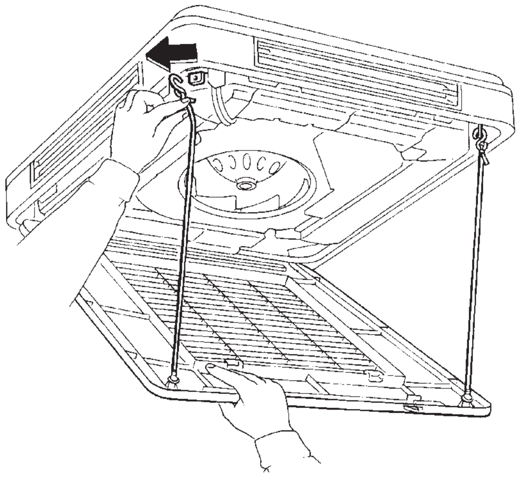
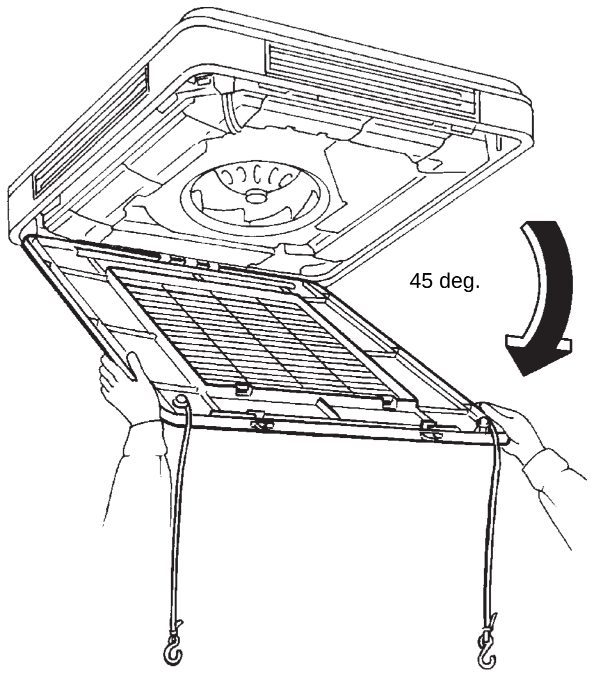
Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.

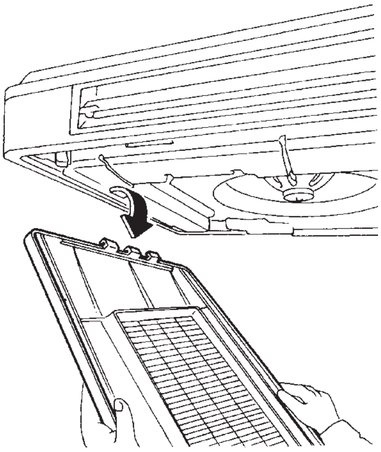
How to remove the Air filter

Step	Action
1	Opening suction grille Push two tabs on suction grille toward the center of grille at the same time. 
2	Pull down suction grille. (Two strings are equipped to prevent the grille from dropping.) 

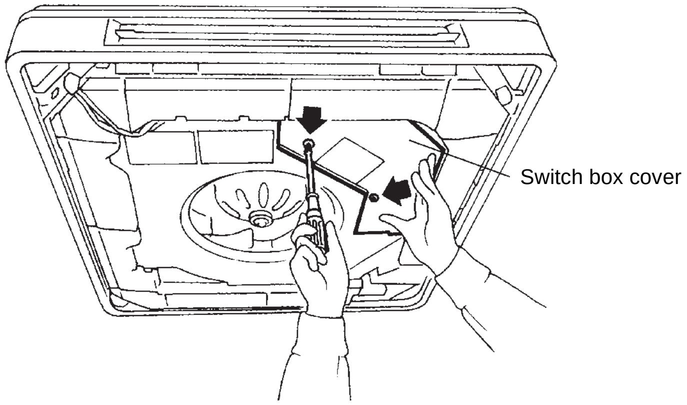
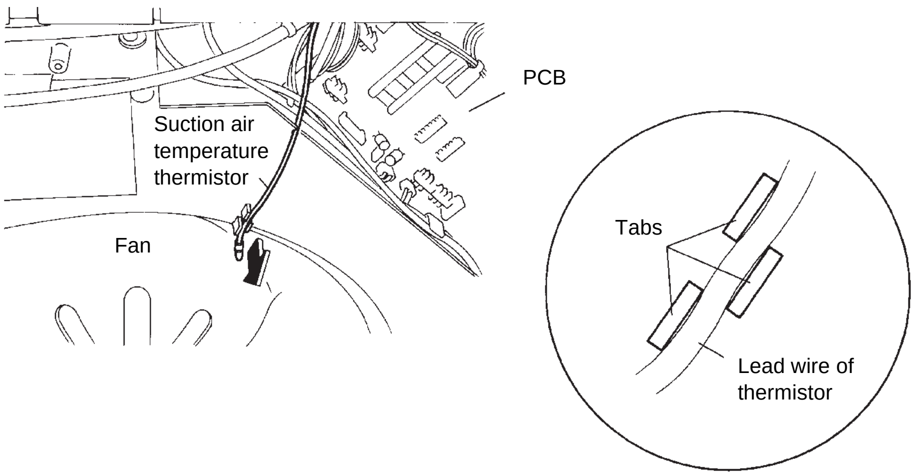
Step	Action
3	To remove air filter, lift the tabs up at the same time and pull it forward. 

How to remove the Suction Grille

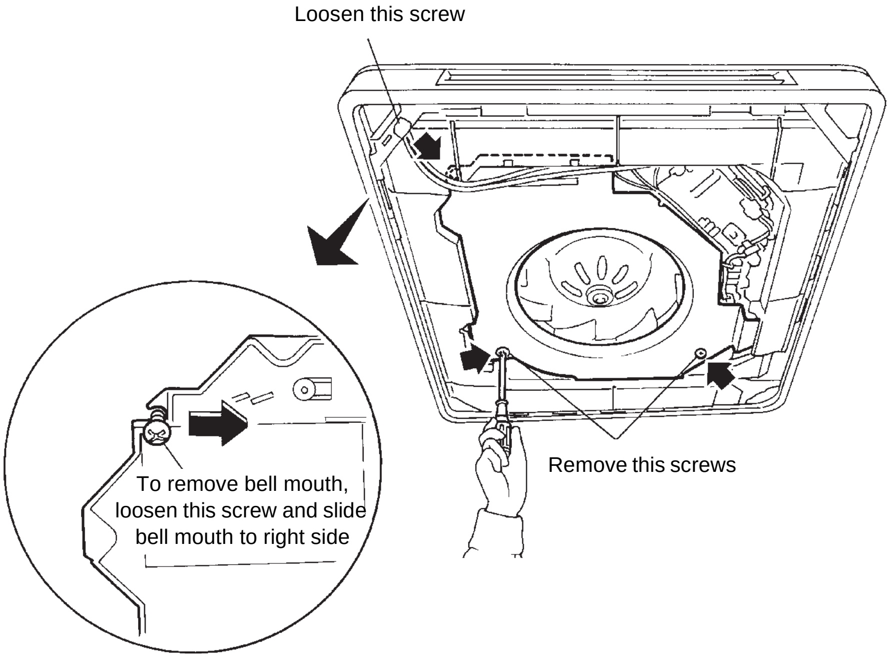
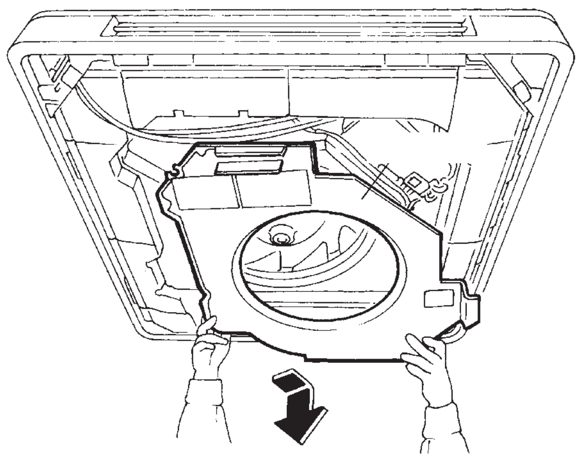
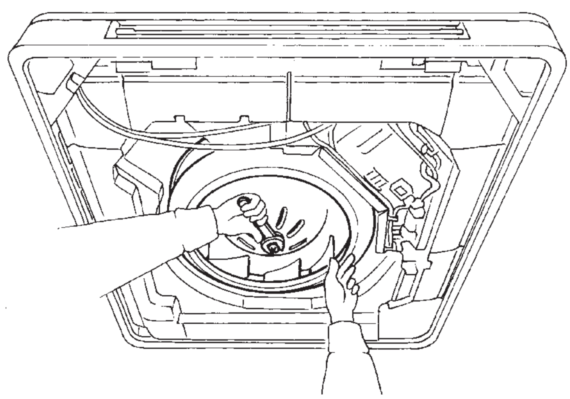
Step	Action
1	Unhook two drop-prevention strings while supporting suction grille with hand. 
2	Open suction grille forward for approx. 45 degree. 

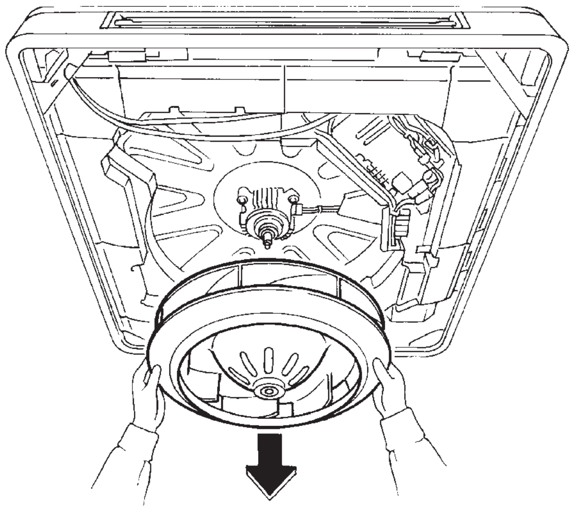
Step	Action
3	Disengage three hooks located at rear side of the grille to remove suction grille. 

How to remove the Fan

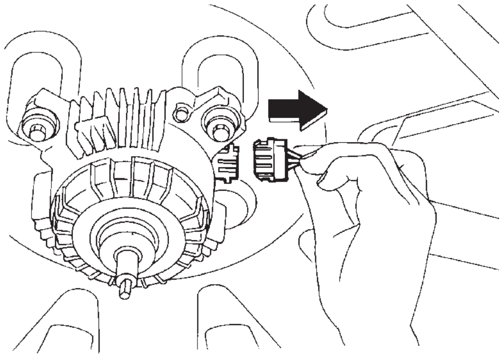
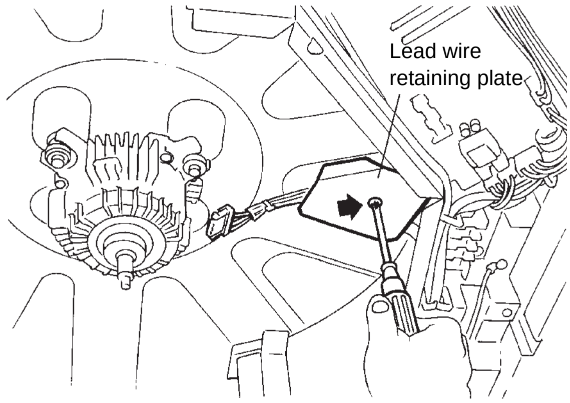
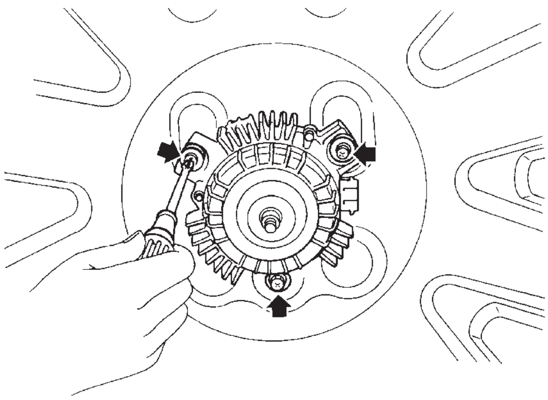
Step	Action
1	Remove two mounting screws to dismount switch box cover. 
2	Remove suction air temperature thermistor attached to bell mouth. 

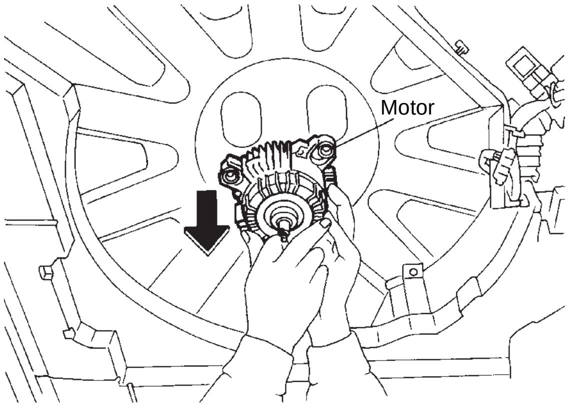
5

Step	Action
3	Bell mouth is mounted with tree screws.Loosen a screw located at diagonal position to the pipings and remove other two screws. 
4	Remove bell mouth by sliding to piping direction. 
5	To dismount fan, remove washer based nut using double-ended wrench. 

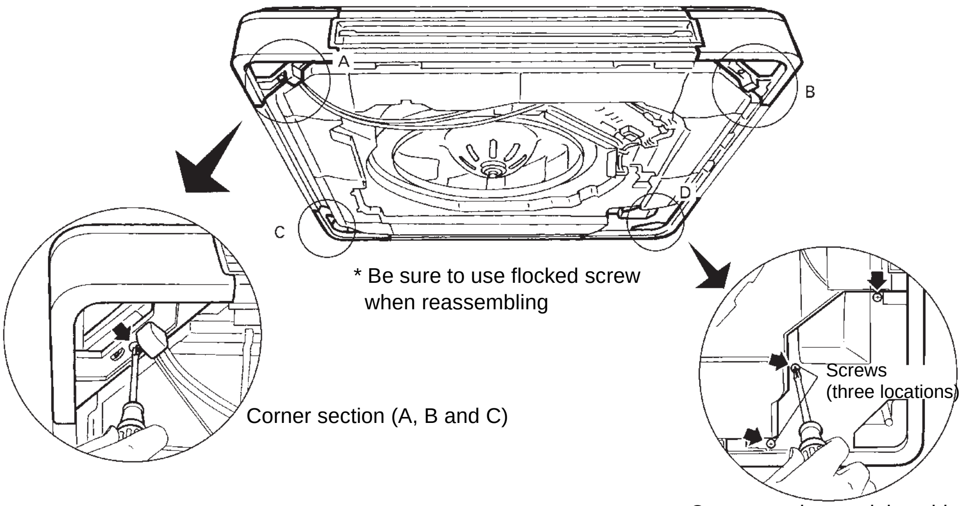
Step	Action
6	Remove fan by pulling down. 

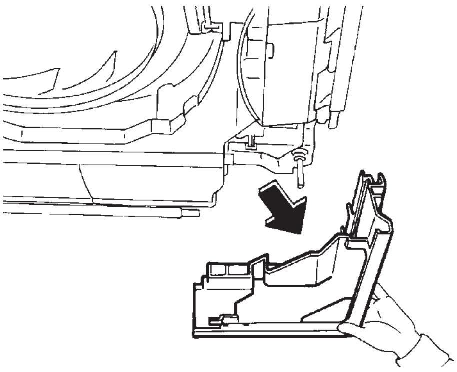
How to remove the Fan Motor

Step	Action
1	Removing fan motor: a. Disconnect connector. b. Remove lead wire retaining plate.   **Caution** Fan motor can be removed without removing the lead wire retaining plate. However, when washing the heat exchanger, this plate should be removed and protect the lead wires.
2	Remove screws for mounting fan motor.  ➤ FUY71FJV1: Three screws ➤ FUY100/125FJV1: Four screws

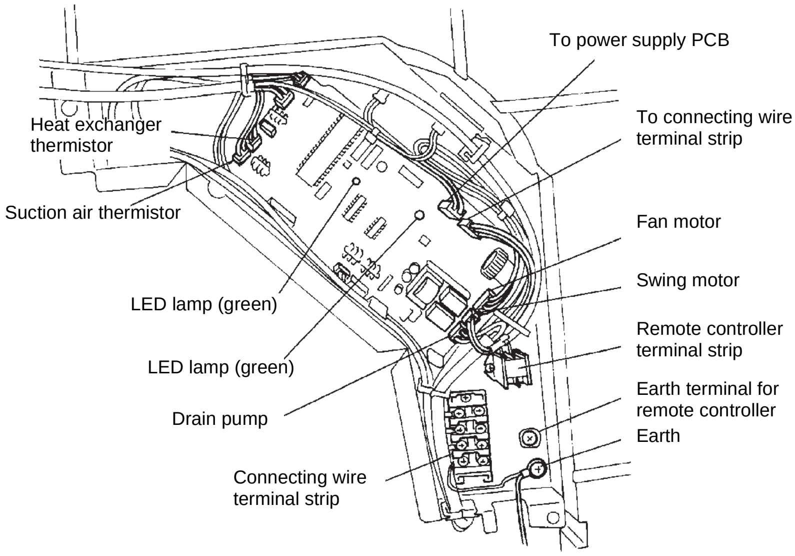
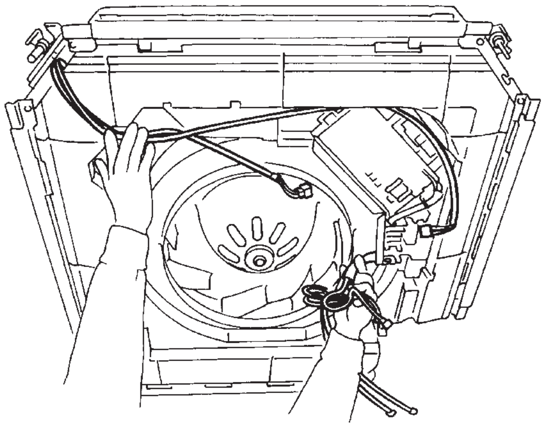
Step	Action
3	Remove motor by pulling down. 

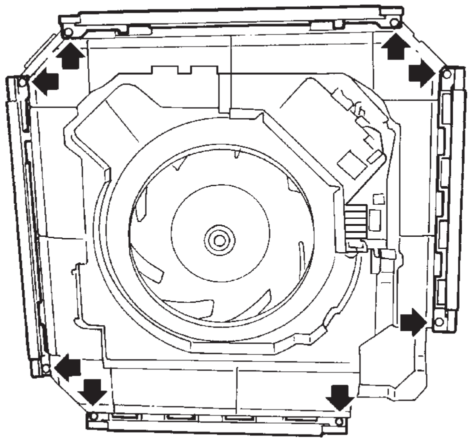
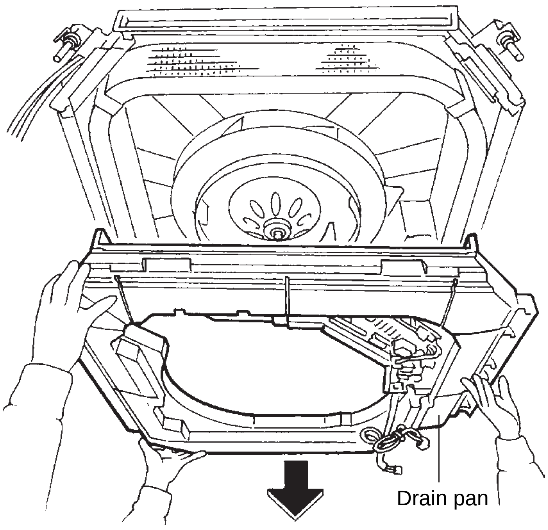
How to remove the Drain Pan

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>To dismount three corner sections A, B and C, remove a flocked screw.


➤ Remove suction grille according to the Removal of air filter and that of suction grille.</td></tr>
<tr><td>2</td><td>Remove three flocked screws to dismount corner section D.
</td></tr>
</table>

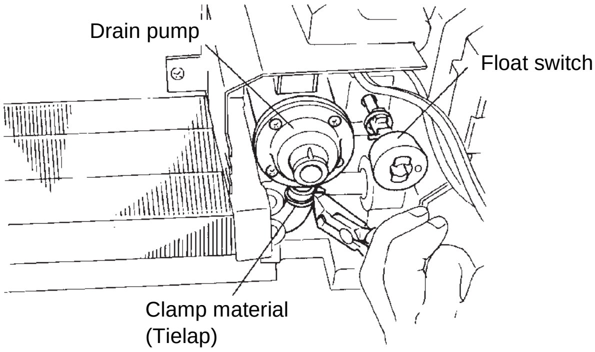
5

Step	Action
3	Disconnect wires and connectors from PCB. 
4	Arrange wire harness to avoid interference with next process.  **Caution** This work should be done by two personnel. If drain water remain in the pan, it may drop and stain onthe floor. Make sure to check if no drain water remain in the pan, or cover the floor with vinyl sheet before disassembling work.

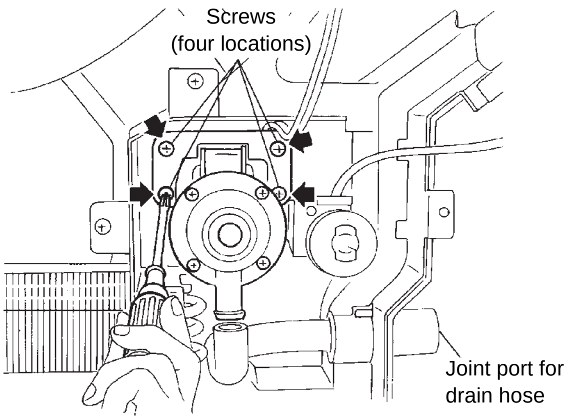
Step	Action
5	To dismount drain pan blocking plate, remove each two mounting screws located at four corners. 
6	Remove drain pan by pulling it down. 

How to remove the Drain Pump

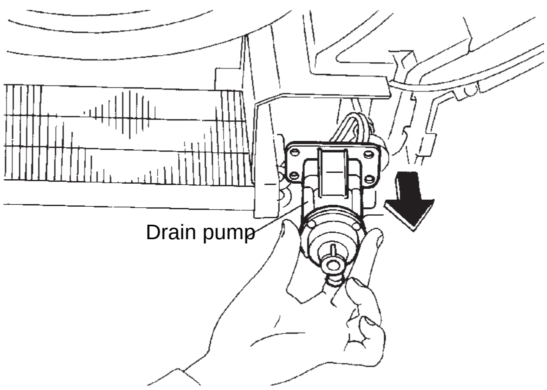
<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Drain pump is located at piping side. Cut clamp material of hose, and disconnect hose from pump.



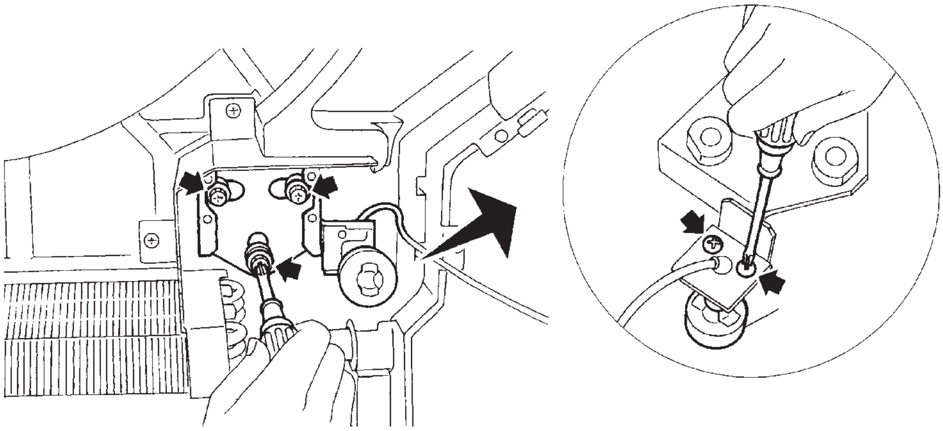
<table>
<tr><th>Caution</th></tr>
<tr><td>When reconnect drain hose with the pump, secure hose at joint using clamping material-such as Tielap. (Clamping material should be normally included in the stock items.)</td></tr>
</table>
</td></tr>
<tr><td>2</td><td>Remove four screws to dismount drain pump.



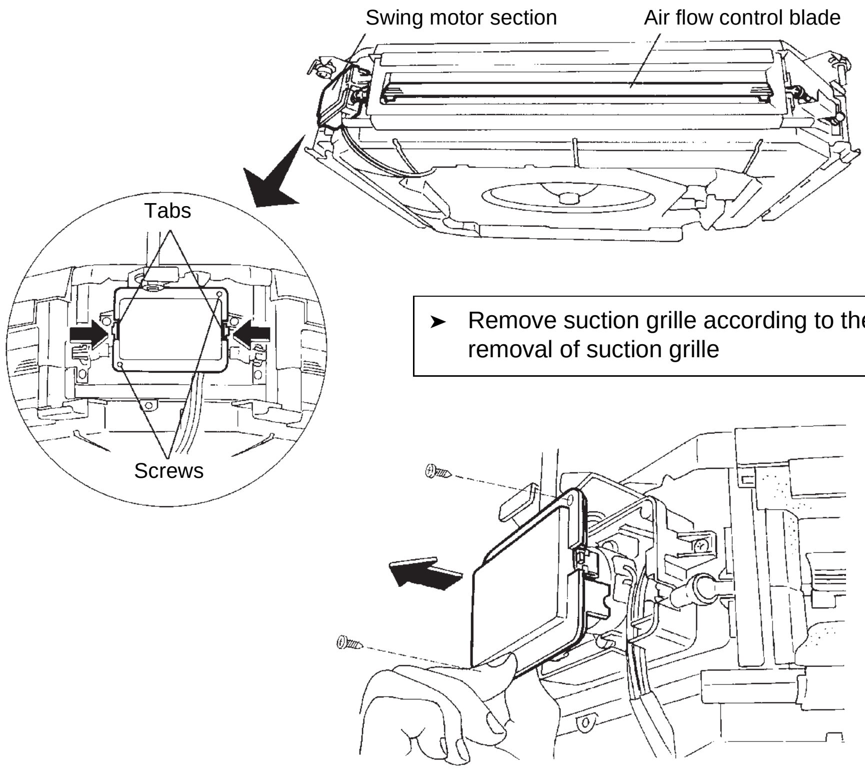
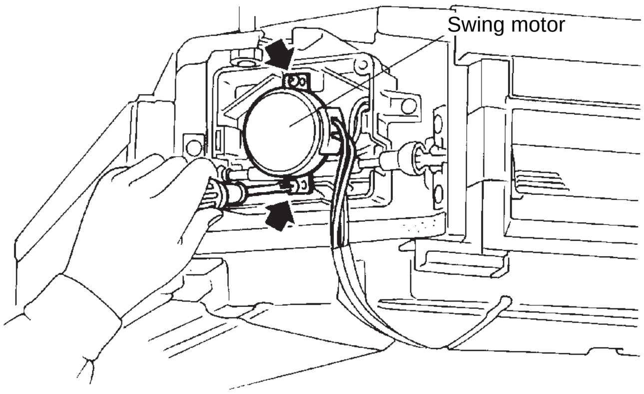
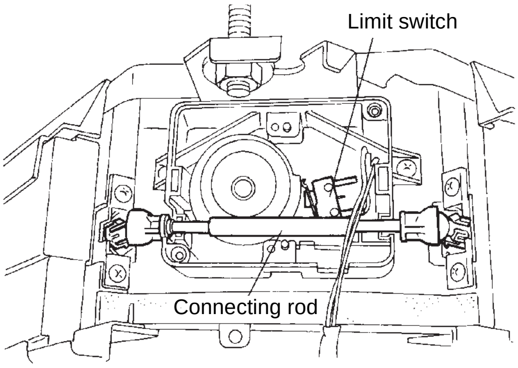
</td></tr>
<tr><td>3</td><td>Dismount drain pump by pulling it down.



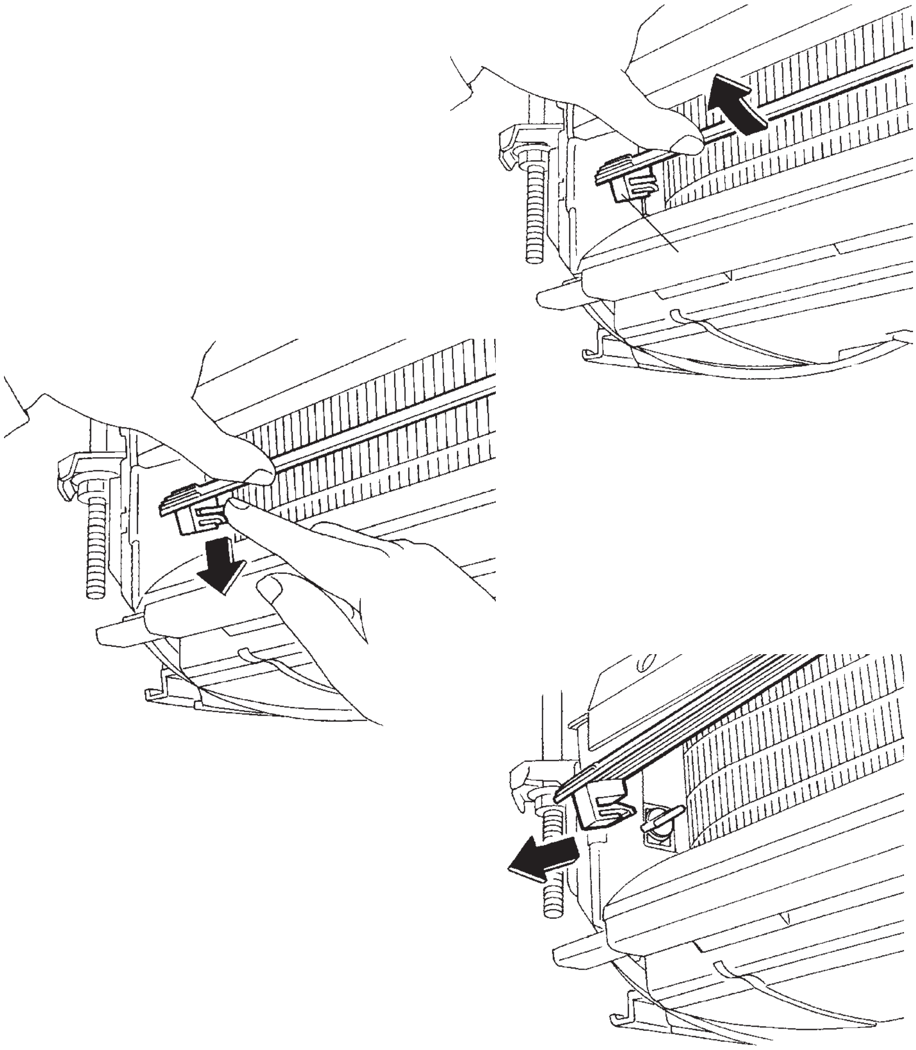
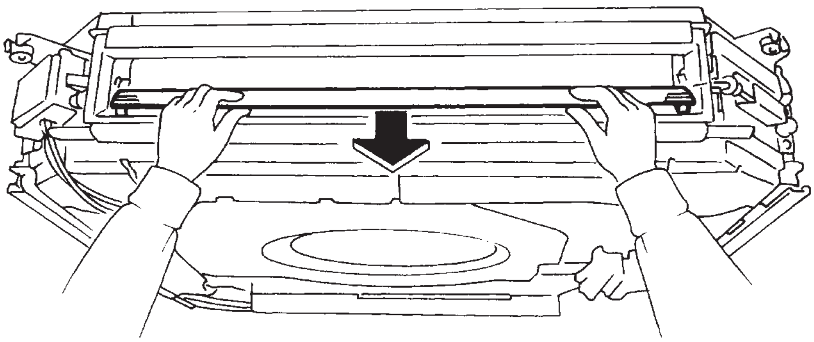
</td></tr>
</table>

Step	Action
4	Removing float switch: a. Loosen three mounting screws to remove drain pump mounting base. b. Remove two screws located at opposite side of drain pump mounting base to dismount float switch. 

How to remove the Swing Motor

Step	Action
1	Swing motor is located at the diagonal position of piping
2	Remove two mounting screws for swing motor cover
3	Remove swing motor cover by holding two tabs on the cover.  ➤ Remove suction grille according to the removal of suction grille
4	Remove two screws to dismount swing motor.  

How to remove the Air Flow Control Blade

Step	Action
1	To remove horizontal blade, press down tabs located at both end of blade and pull them forward. 
2	Remove horizontal blade. 

2.12 FAYP71LV1

Overview

This part contains the following topics:

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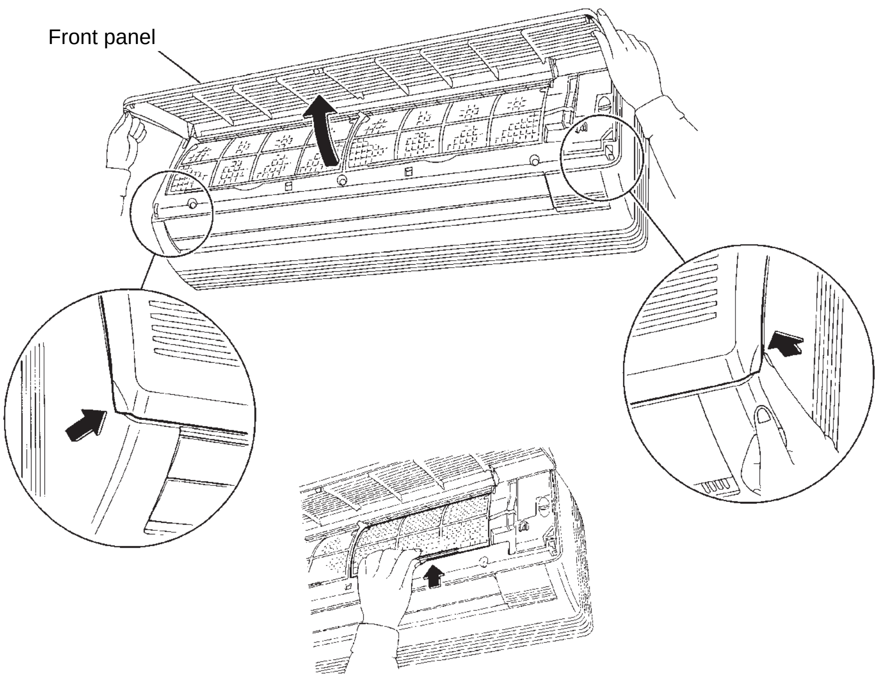
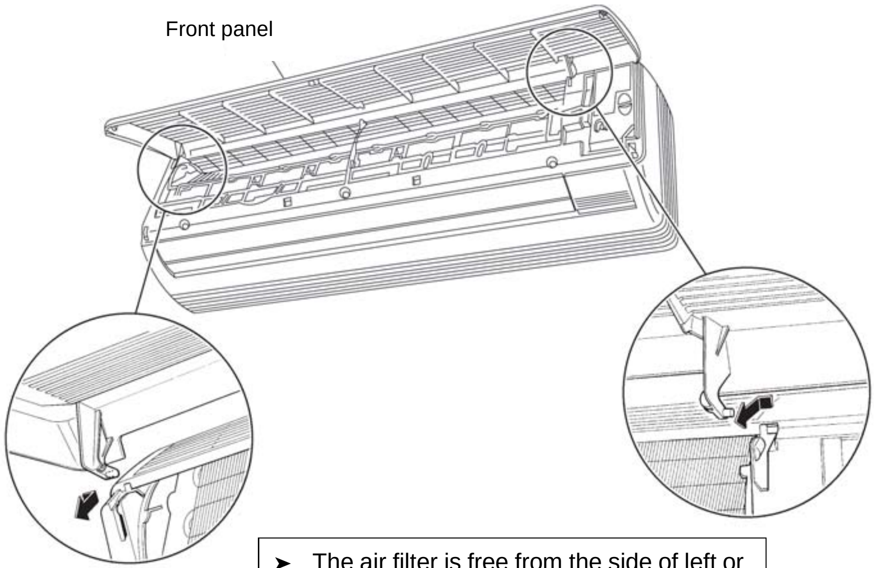
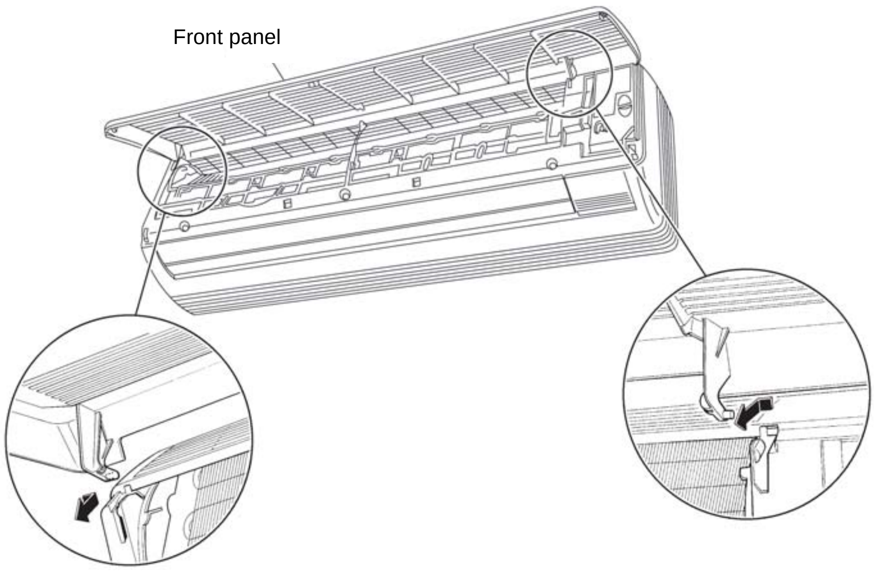
Warning

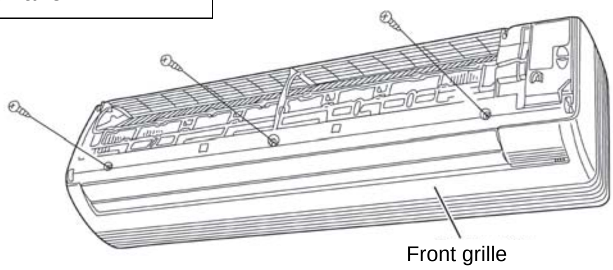
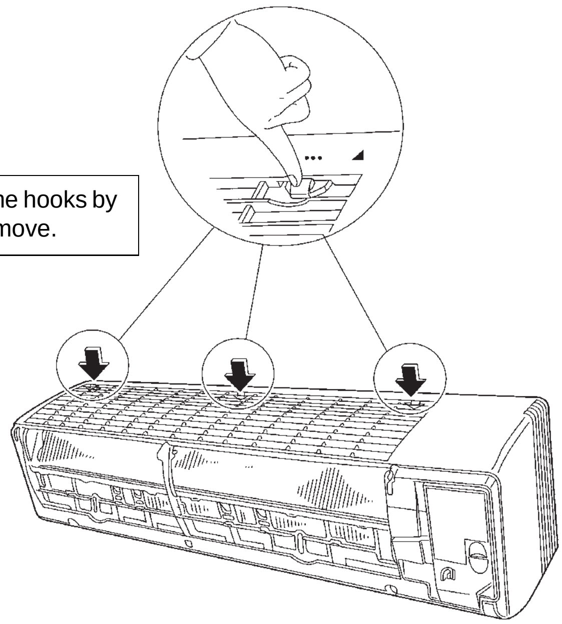
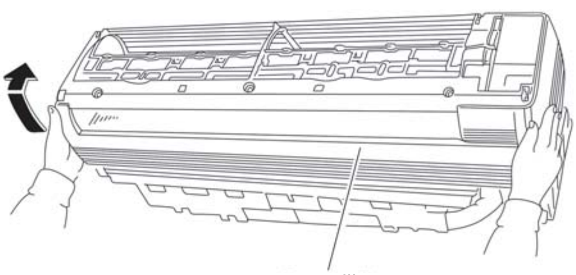
Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.

How to remove the Air filter and Front Panel

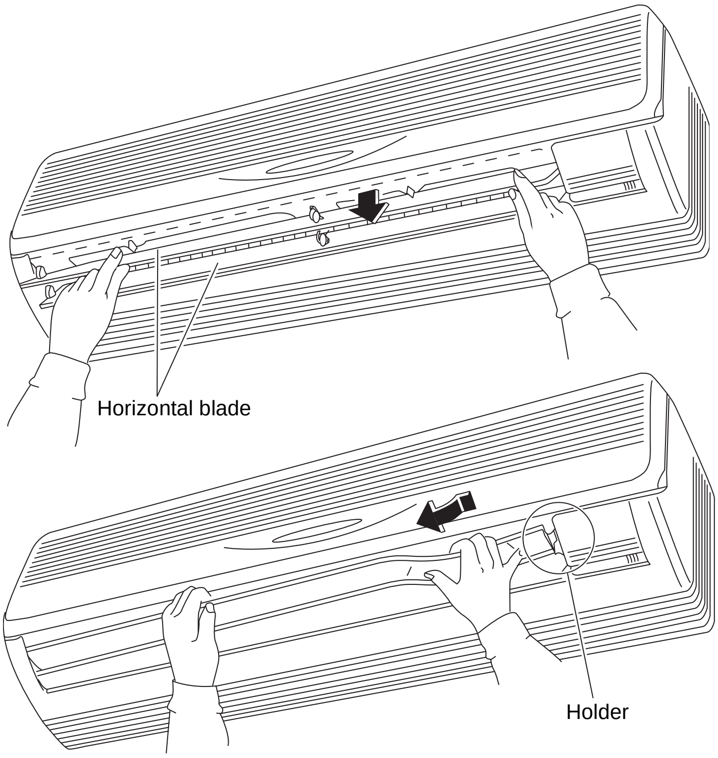
Step	Action
1	Put your fingers on protrusions at left and right side of the unit to open the front panel. 

Step	Action
2	To remove the air filter, push up the tab and pull down the filter.  ➤ The air filter is free from the side of left or right. ➤ It is easy to install if inserting along the guide.
3	Disengage the holding section on upper right of the panel by pushing toward left, then slide toward right to remove the front panel. 

How to remove the Front Grille

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Remove three pieces of front grille fixing screws.
➤ Removing the front panel in accordance with "Removal of Front Panel".
</td></tr>
<tr><td>2</td><td>Remove the front grille by pulling forward while pushing three hooks located at upper part of the grille one by one.
➤ If hard to remove, try to push the hooks by a screwdriver or the like to remove.
</td></tr>
<tr><td>3</td><td>The front grille can be removed by pulling forward and lift the bottom part.

➤ Make sure that the three hooks are set on the original position when reinstalling the front grille.</td></tr>
</table>

How to remove the Horizontal Blade and Vertical Blade

Step	Action
1	Removing the horizontal blade: 1. Open the horizontal blade 2. Bend the horizontal blade slightly to disengage the fixing part at right side 3. Pull the horizontal blade rightward and take it out . 

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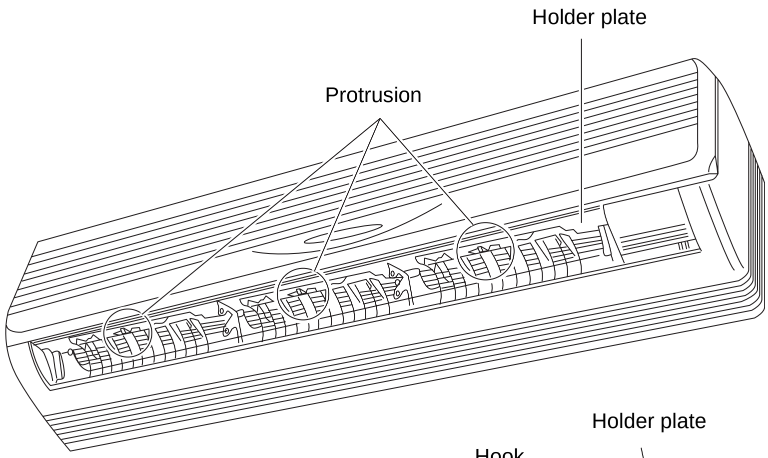
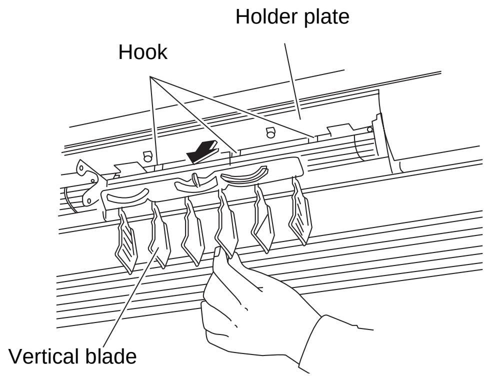
Step	Action
1	Removing the vertical blade: 1. Disengage the protrusion on upper side of blade from holder plate. (Three locations). 2. Push the vertical blade backward and pull the lower side forward to disengage the blade from three hooks  

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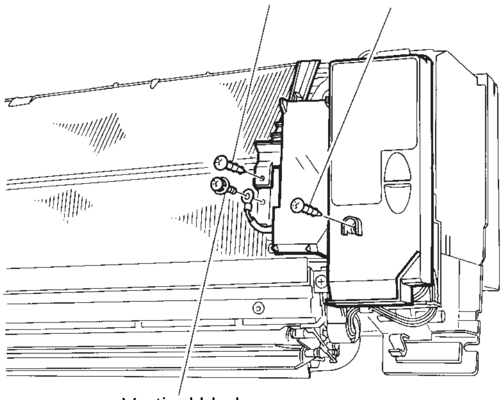
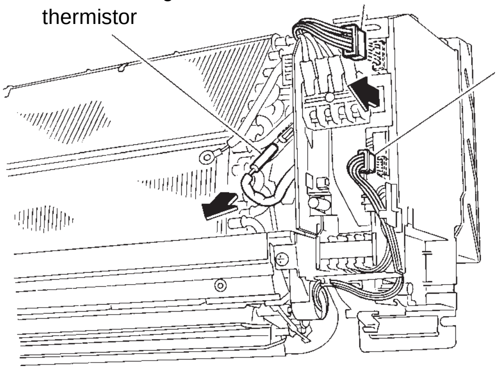
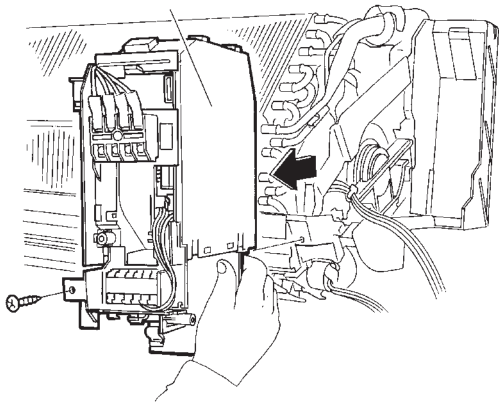
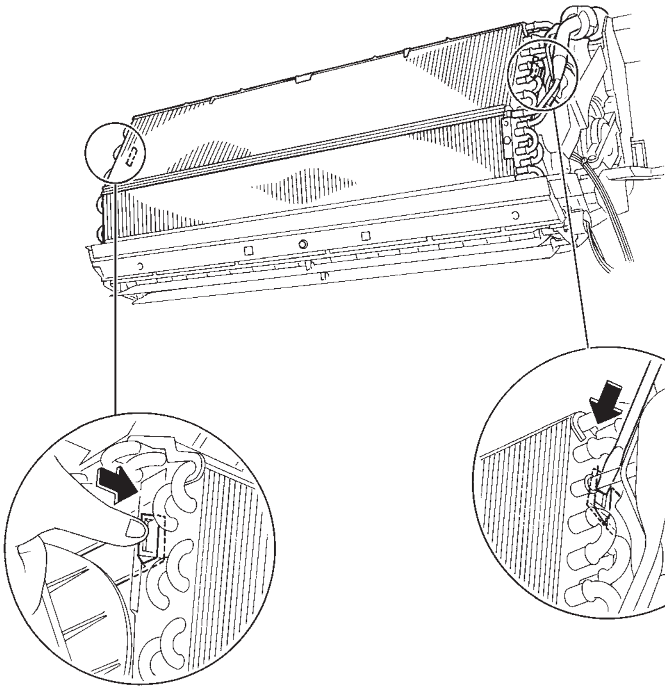
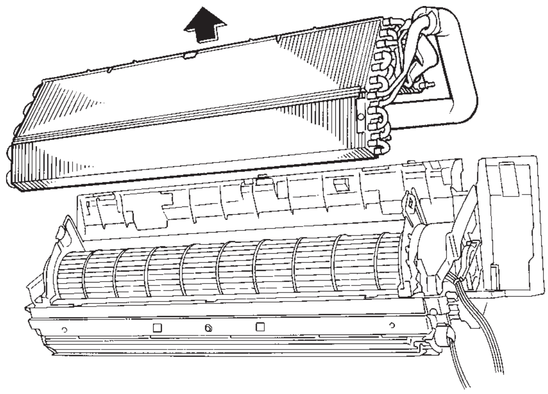
How to remove the Electrical Box

Step	Action
1	1. Remove the screw on the service cover 2. Remove the screw on the drip proof plate 3. Remove the screw for the grounding wire.  ➤ Removing the front grille in accordance with "Removal of Front Grille".
2	1. Remove the following connectors: - Fan motor connector - Air swing motor connector. 2. Pull the heat exchanger thermistor and dismantle it. 

Step	Action
3	1. Remove the fixing screw for switch box 2. Pull forward the switch box holding lower part of the box. 

How to remove the Heat Exchanger

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Press strongly the claws on both left and right sides of heat exchanger toward inside.
Remove clip from back side..
<table>
<tr><td>➤ Removing the front grille in accordance with "Removal of Front Grille".
➤ Removing the switch box in accordance with "Removal of Switch Box".
➤ Pay attention not to soil the floor with residual drain.
➤ In case that the drain hose is buried inside wall, remove the heat exchanger after pulling out the drain hose.</td><td>Caution
If gas leaks, repair the leakage section, collect refrigerant inside the unit completely, then, recharge refrigerant after performing vacuum dehydration.
Don't mix air or the like otherthan the specified refrigerant into a refrigeration circle.(Mixing of air or other gas causes abnormal high pressure in the refrigerating cycle and results in pipe rupture or personal injuries.)</td></tr>
</table>
</td></tr>
</table>

Step	Action
2	To remove the heat exchanger, pull it upward.  **Caution** When removing or reinstalling the heat exchanger, be sure to wear gloves or wrap the heat exchanger with cloth or the like. (Otherwise, the fins may injure your hand.)

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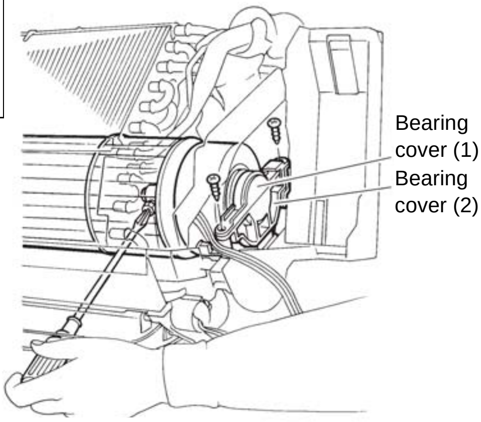
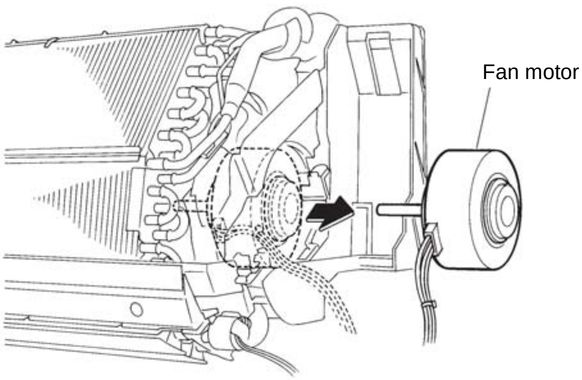
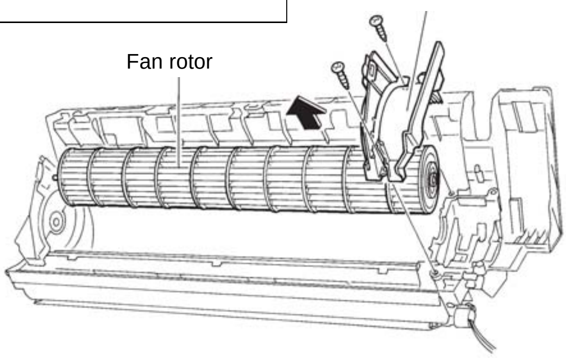
How to remove the Fan Motor and Fan Rotor

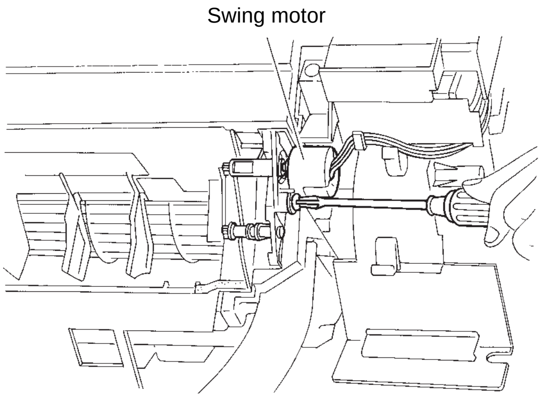
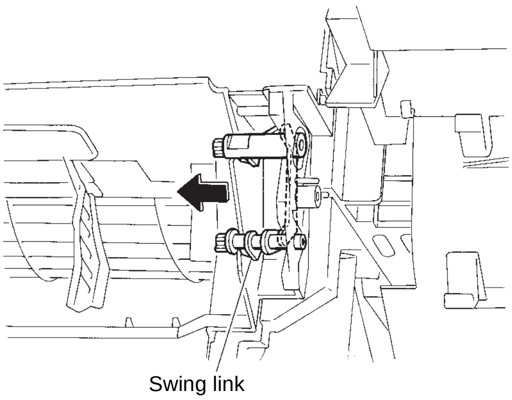
<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>
Removing the fan motor:
1. Insert a Phillips tip screwdriver into the air outlet and remove the screws fixing the fan motor and fan rotor (The screws can be removed without removing of horizontal blade.)
2. Remove the two screws on the bearing cover (1) and (2) and dismantle the covers
3. Take out the fan motor sideways
➤ Removing the front grille in accordance with "Removal of Front Grille".
➤ Removing the electrical box in accordance with "Removal of Electrical Box".




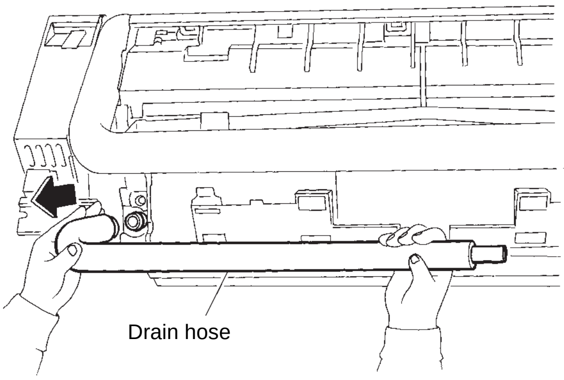
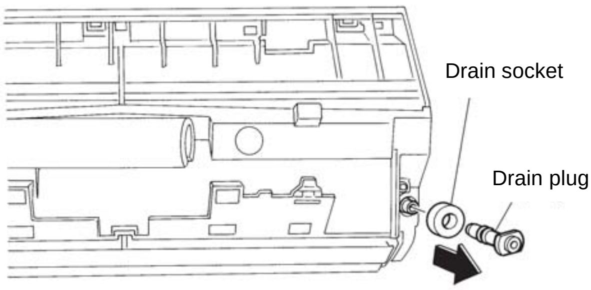
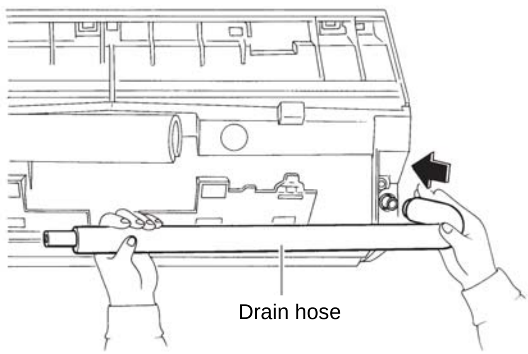
</td></tr>
<tr><td>1</td><td>
Removing the fan rotor:
1. Remove the two screws to dismantle the rotor cover
2. Pull the fan rotor out.
➤ Removing the heat exchanger in accordance with "Removal of Heat Exchanger".


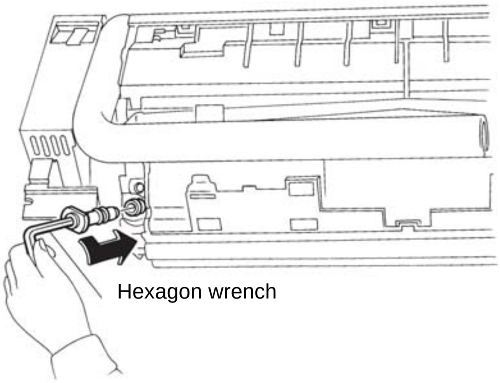
</td></tr>
</table>

How to remove the Air Swing Motor

Step	Action
1	1. Disconnect the air swing motor connector in the electrical box 2. Remove the screw which fixes the air swing motor.. ➤ Removing the front grille in accordance with "Removal of Front Grille". 
2	Pull the air swing link assembly to the left strongly to dismantle. 

How to remove the Drain Hose Piping to the Left

Step	Action
1	1. Pull out the drain hose attached on the rear right of the unit 2. Pull out the drain plug and drain socket attached on the rear left of the unit.. ➤ Removing the front grille in accordance with "Removal of Front Grille"   ➤ The drain pan and bottom frame are designed as an integral type.
2	Piping of Drain Hose at Left Side.  ➤ Insert the drain hose to the hose plug securely as far as it will go.

Step	Action
3	Insert the drain plug and drain socket into the right side of the unit with hexagonal pin-wrench.  ➤ Insert the drain plug and socket securely as far as it will go.

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