DAIKIN

ED 04 - 702

Engineering Data
SPLIT

- Cooling Only / Heat Pump -

F-Series

INVERTER

DAIKIN INDUSTRIES, LTD.

Split-System Room Air Conditioners F-Series

Cooling Only	**FTKS50FVM** **FTKS60FVM** **FTKS71FVM**	**RKS50FVM** **RKS60FVM** **RKS71FVM**
Heat Pump	**FTXS50FVMA** **FTXS60FVMA** **FTXS71FVMA**	**RXS50FVMA** **RXS60FVMA** **RXS71FVMA**

Cautions

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided and choose an outdoor unit with anti-corrosion treatment.

1. Features

Features

< FTKS50/60/71FVM >
< FTXS50/60/71FVMA >

< RKS50/60/71FVM >
< RXS50/60FVMA >

< RXS71FVMA >

New

Energy Saving
- Swing Compressor
- Reluctance DC Motor
- PAM Control
- Intelligent Eye

Comfortable Functions
- Home Leave Operation
- Indoor Unit Quiet Operation
- Outdoor Unit Quiet Operation

Wipe-clean Flat Panel

Healthy & Clean Functions

05RAG06A-4

Swing Compressor

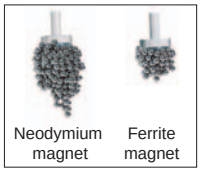
Large Energy Savings
Smooth rotation with little friction and refrigerant gas compression with little loss, allowing high operation efficiency

Low Vibrations and Low Noise
Smooth piston motion as if sliding along a “groove,” resulting in low vibrations and low noise

High Durability
Few parts rubbing each other during operation, achieving high performance and reliability

Reluctance DC Motor

Higher efficiency with 2 different torques
– magnetic torque of ND magnet and reluctance torque
Distinctive effect in energy-saving running in low-frequency zone

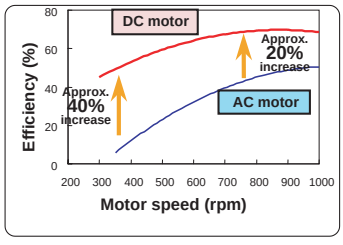


05RAG06A-5

DC Fan Motor

A DC fan motor is introduced for the first time in this small class. The motor features fine rotation control and improved energy consumption.

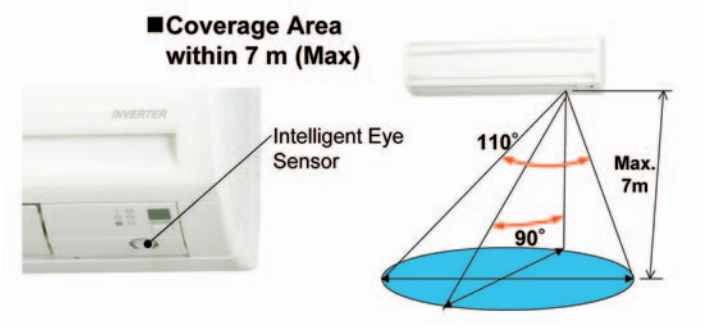
DC motor efficiency
(comparison with a conventional AC motor)



05RAG06A-6

Intelligent Eye

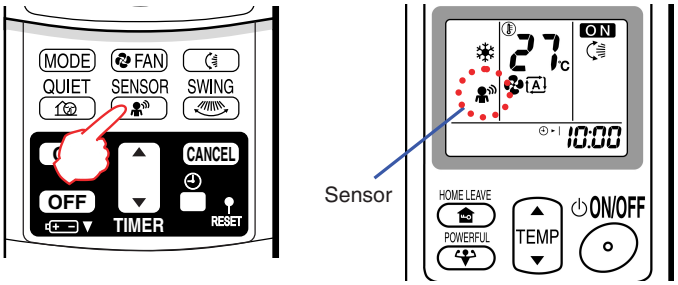
= Sensing human presence utilizing infrared rays =



05RAG06A-7

Intelligent Eye

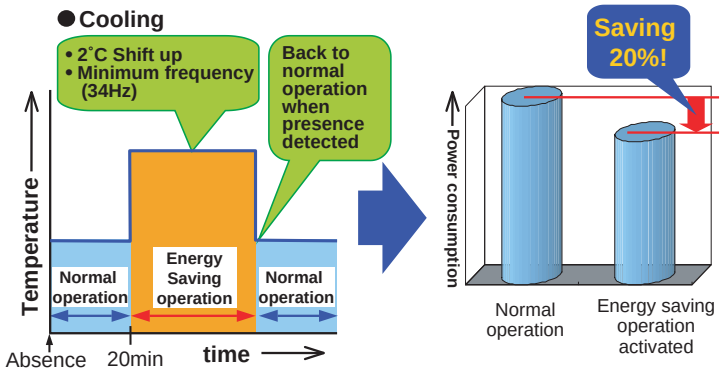
= Just one push of the [SENSOR] button =



05RAG02B- 32

Intelligent Eye

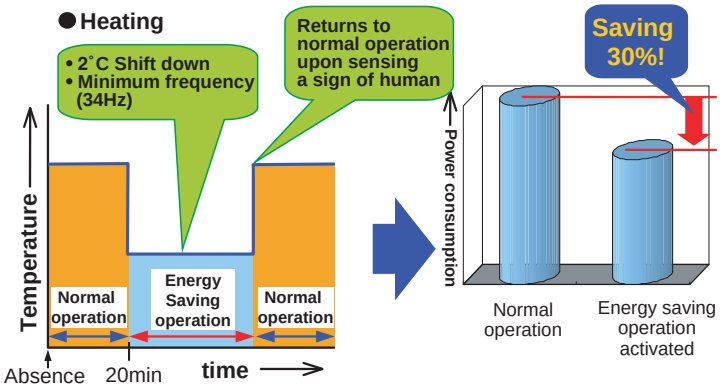
= Automatic shift up when sensing no human, intelligently saving energy =



05RAG06A-9

Intelligent Eye

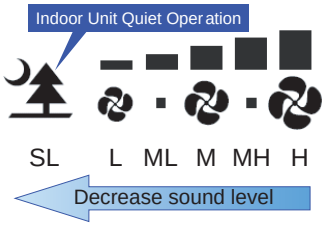
= When absence shift down automatically makes energy saving intelligently =



05RAG06A-10

6 Steps Air Flow Rate

Air Flow Setting on the R/C



A sound level step by step decreases approximately 2 or 3 dB by choosing smaller airflow setting.

Selectable 6 steps air flow rate (5 steps and Quiet) make fine on-demand comfort.

Quiet Operation for Better Sleep

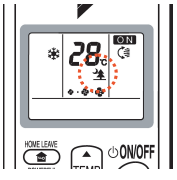
05RAG06A-12

Indoor Unit Quiet Operation

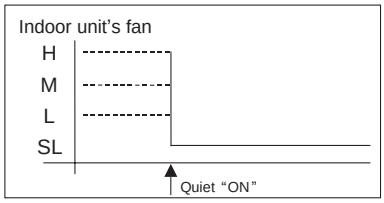
When air flow is set to "Quiet" through a remote controller, the operation sound of the indoor unit is reduced by 3dB.
This is a convenient function while studying or sleeping.

■ Air flow setting button

Auto → Super Low (SL) → Low (L) → ● → Middle (M) → ● → High (H)



<Note>
If the unit operates in "SL" or "L" mode with small air flow, operating noise is reduced but cooling / heating capacity is reduced too.



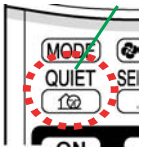
05RAG06A-13

Outdoor Unit Quiet Operation

When QUIET button is selected, the outdoor unit's operation sound reduces by 3dB.

In night time operation, the unit can be operated with less nuisance to the neighborhood.

Outdoor Unit Quiet Operation button



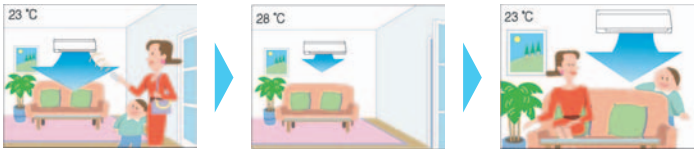
Lowering the revolution speed of the compressor and fan.

3dB down

05RAG06A-14

Home Leave Operation

= Quick return to favorite comfort setting levels =



Start Home Leave Operation simply by pushing its button on the remote controller.

When you are out of your home, your A/C prevents large rises in the indoor temperature by continuing to operate using Home Leave Operation settings.

When you return, you will be greeted by an air-conditioned room. Just push the HOME LEAVE button again to return to your previous settings.

05RAG06A-15

Home Leave Operation

~ NOTE ~

- Setting temperature and airflow rate for Home leave operation are variable according to various applications. (Factory setting : 25˚C)
- Setting range
  Cooling : 18~32˚C Heating : 10~30˚C
- Function only in cooling & heating operation. (In any other modes, this function will not work and the LED on the main body will not light up.)
- If this function is used in the powerful operation mode, it will force the powerful operation mode to end.
- The just previous mode is resumed when the Home Leave Operation mode has been cleared.

05RAG06A-16

Wipe-clean

Grille Type :
Remove and wash the grille

Current models are …

New Flat Panel : Easy to clean without removing the panel

New models are …

Also washable after
removing the panel.

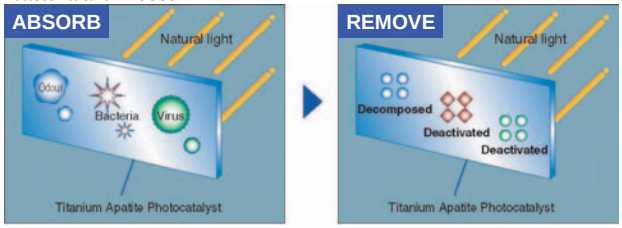
05RAG06A-17

Titanium Apatite Photocatalytic Air-Purifying Filter

New

It lasts for three years without replacement
if washed about once every six months.

Absorbs microscopic particles, decomposes odours and even deactivates bacteria and viruses.



05RAG19A- 31

2. Power Supply

Indoor Unit	Outdoor Unit	Power Supply
FTKS50FVM	RKS50FVM	1ϕ, 50Hz, 220-230-240V 1ϕ, 60Hz, 220-230V
FTKS60FVM	RKS60FVM	
FTKS71FVM	RKS71FVM	
FTXS50FVMA	RXS50FVMA	
FTXS60FVMA	RXS60FVMA	
FTXS71FVMA	RXS71FVMA	

Note: Power Supply Intake ; Outdoor Unit

3. Functions

Category	Functions	FTKS50/60/71FVM RKS50/60/71FVM	FTXS50/60/71FVMA RXS50/60/71FVMA	Category	Functions	FTKS50/60/71FVM RKS50/60/71FVM	FTXS50/60/71FVMA RXS50/60/71FVMA
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—	—
	Operation Limit for Cooling (°CDB)	10 ~46	10 ~46				
	Operation Limit for Heating (°CWB)	—	–15 ~18		Photocatalytic Deodorizing Filter	—	—
	PAM Control	○	○		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—
Compressor	Oval Scroll Compressor	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	○	○
	Swing Compressor	○	○		Longlife Filter	—	—
	Rotary Compressor	—	—		Mold Proof Air Filter	○	○
	Reluctance DC Motor	○	○		Wipe-clean Flat Panel	○	○
Comfortable Airflow	Power-Airflow Flap	—	—		Washable Grille	—	—
	Power-Airflow Dual Flaps	○	○		Mold Proof Operation	—	—
	Power-Airflow Diffuser	—	—		Heating Dry Operation	—	—
	Wide-Angle Louvers	○	○		Good-Sleep Cooling Operation	—	—
	Vertical Auto-Swing (Up and Down)	○	○	Timer	24-Hour On/Off Timer	○	○
	Horizontal Auto-Swing (Right and Left)	○	○		Night Set Mode	○	○
	3-D Airflow	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	Comfort Airflow Mode	—	—		Self-Diagnosis (Digital, LED) Display	○	○
	3-Step Airflow (H/P Only)	—	—		Wiring Error Check	—	—
Comfort Control	Auto Fan Speed	○	○		Anticorrosion Treatment of Outdoor Heat Exchanger	○	○
	Indoor Unit Quiet Operation	○	○				
	Night Quiet Mode (Automatic)	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Outdoor Unit Quiet Operation (Manual)	○	○				
	Intelligent Eye	○	○		Flexible Voltage Correspondence	○	○
	Quick Warming Function	—	○		High Ceiling Application	—	—
	Hot-Start Function	—	○		Chargeless	10m	10m
	Automatic Defrosting	—	○		Either side Drain (Right or Left)	○	○
Operation	Automatic Operation	—	○		Power Selection	—	—
	Programme Dry Function	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Fan Only	○	○		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—				
	Inverter Powerful Operation	○	○		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	Priority-Room Setting	—	—				
	Cooling / Heating Mode Lock	—	—		DIII-NET Compatible (Adaptor) (Option)	○	○
	Home Leave Operation	○	○	Remote Controller	Wireless	○	○
	ECONO Mode	—	—		Wired	—	—
	Indoor Unit On/Off Switch	○	○				
	Signal Reception Indicator	○	○				
	Temperature Display	—	—				
	Another Room Operation	—	—				

Note: ○ : Holding Functions
— : No Functions

4. Specifications

4.1 Cooling Only

50Hz 220-230-240V / 60Hz 220-230V

Model	Indoor Units		FTKS50FVM	FTKS60FVM	FTKS71FVM
	Outdoor Units		RKS50FVM	RKS60FVM	RKS71FVM
Capacity Rated (Min.~Max.)		kW	5.0 (1.7~6.0)	6.0 (1.7~6.7)	7.1 (2.3~8.3)
		Btu/h	17,100 (5,800~20,500)	20,500 (5,800~22,900)	24,200 (7,800~28,300)
		kcal/h	4,300 (1,460~5,160)	5,160 (1,460~5,760)	6,110 (1,980~7,140)
Running Current Rated		A	7.2-6.9-6.6/7.2-6.9	9.2-8.8-8.4/9.2-8.8	11.5-11.0-10.6/11.5-11.0
Power Consumption Rated (Min.~Max.)		W	1,550 (440~2,080)	1,990 (440~2,400)	2,510 (570~3,580)
Power Factor		%	97.9-97.7-97.9/97.9-97.7	98.3-98.3-98.7/98.3-98.3	99.2-99.2-98.7/99.2-99.2
COP Rated (Min.~Max.)		W/W	3.23 (3.86~2.88)	3.02 (3.86~2.79)	2.83 (4.04~2.32)
Piping Connections	Liquid	mm	ϕ 6.4	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ12.7	ϕ12.7	ϕ15.9
	Drain	mm	ϕ18.0	ϕ18.0	ϕ18.0
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Max. Interunit Piping Length		m	30	30	30
Max. Interunit Height Difference		m	20	20	20
Chargeless		m	10	10	10
Amount of Additional Charge of Refrigerant		g/m	20	20	20
Indoor Unit			**FTKS50FVM**	**FTKS60FVM**	**FTKS71FVM**
Front Panel Color			White	White	White
Air Flow Rate	m³/min (cfm)	H	14.7 (519)	16.2 (572)	17.4 (614)
		M	12.6 (445)	13.9 (491)	14.6 (516)
		L	10.2 (360)	11.5 (406)	11.9 (420)
		SL	9.2 (325)	10.0 (353)	10.7 (378)
Fan	Type		Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Motor Output	W	43	43	43
	Speed	Steps	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto	5 Steps, Quiet, Auto
Air Direction Control			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter			Removable/Washable/Mildew Proof	Removable/Washable/Mildew Proof	Removable/Washable/Mildew Proof
Running Current (Rated)		A	0.16-0.15-0.15/0.16-0.15	0.19-0.18-0.17/0.19-0.18	0.21-0.20-0.19/0.21-0.20
Power Consumption (Rated)		W	34	40	45
Power Factor		%	96.6-98.6-94.4/96.6-98.6	95.7-96.6-98.0/95.7-96.6	97.4-97.8-98.7/97.4-97.8
Temperature Control			Microcomputer Control	Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)		mm	290×1,050×238	290×1,050×238	290×1,050×238
Packaged Dimensions (H×W×D)		mm	337×1,147×366	337×1,147×366	337×1,147×366
Weight		kg	12	12	12
Gross Weight		kg	17	17	17
Operation Sound	H/M/L/SL	dBA	43/39/34/31	45/41/36/33	46/42/37/34
Outdoor Unit			**RKS50FVM**	**RKS60FVM**	**RKS71FVM**
Casing Color			Ivory White	Ivory White	Ivory White
Compressor	Type		Hermetically Sealed Swing Type	Hermetically Sealed Swing Type	Hermetically Sealed Swing Type
	Model		2YC36BXD	2YC36BXD	2YC63BXD
	Motor Output	W	1,100	1,100	1,920
Refrigerant Oil	Type		FVC50K	FVC50K	FVC50K
	Charge	L	0.65	0.65	0.75
Refrigerant	Type		R-410A	R-410A	R-410A
	Charge	kg	1.50	1.50	1.70
Air Flow Rate	m³/min (cfm)	HH	50.9 (1,797)	54.2 (1,914)	59.4 (2,097)
		H	48.9 (1,727)	50.9 (1,797)	59.4 (2,097)
		L	41.7 (1,472)	45.0 (1,589)	46.3 (1,635)
Fan	Type		Propeller	Propeller	Propeller
	Motor Output	W	53	53	53
Running Current (Rated)		A	7.04-6.75-6.45/7.04-6.75	9.01-8.62-8.23/9.01-8.62	11.29-10.80-10.41/11.29-10.80
Power Consumption (Rated)		W	1,516	1,950	2,465
Power Factor (Rated)		%	97.9-97.6-97.9/97.9-97.6	98.4-98.4-98.7/98.4-98.4	99.2-99.2-98.7/99.2-99.2
Starting Current		A	7.2	9.2	11.5
Dimensions (H×W×D)		mm	735×825×300	735×825×300	735×825×300
Packaged Dimensions (H×W×D)		mm	792×960×390	792×960×390	792×960×390
Weight		kg	47	47	55
Gross Weight		kg	52	52	61
Operation Sound	H/SL	dBA	47/44	49/46	53/49
Drawing No.			3D056225	3D056226	3D056227

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

4.2 Heat Pump

50Hz 220-230-240V / 60Hz 220-230V

Model	Indoor Units		FTXS50FVMA		FTXS60FVMA	
	Outdoor Units		RXS50FVMA		RXS60FVMA	
			Cooling	Heating	Cooling	Heating
Capacity Rated (Min.~Max.)		kW	5.0 (1.7~6.0)	5.8 (1.7~7.7)	6.0 (1.7~6.7)	7.0 (1.7~8.0)
		Btu/h	17,100 (5,800~20,500)	19,800 (5,800~26,300)	20,500 (5,800~22,900)	23,900 (5,800~27,300)
		kcal/h	4,300 (1,460~5,160)	4,990 (1,460~6,620)	5,160 (1,460~5,760)	6,020 (1,460~6,880)
Running Current Rated		A	7.2-6.9-6.6/7.2-6.9	7.4-7.1-6.8/7.4-7.1	9.2-8.8-8.4/9.2-8.8	9.4-9.0-8.6/9.4-9.0
Power Consumption Rated (Min.~Max.)		W	1,550 (440~2,080)	1,600 (400~2,530)	1,980 (440~2,390)	2,040 (400~2,810)
Power Factor		%	97.9-97.7-97.9/97.9-97.7	98.3-98.0-98.0/98.3-98.0	97.8-97.8-98.2/97.8-97.8	98.6-98.6-98.8/98.6-98.6
COP Rated (Min.~Max.)		W/W	3.23 (3.86~2.88)	3.63 (4.25~3.04)	3.03 (3.86~2.80)	3.43 (4.25~2.85)
Piping Connections	Liquid	mm	ϕ 6.4		ϕ 6.4	
	Gas	mm	ϕ12.7		ϕ12.7	
	Drain	mm	ϕ18.0		ϕ18.0	
Heat Insulation			Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	30		30	
Max. Interunit Height Difference		m	20		20	
Chargeless		m	10		10	
Amount of Additional Charge of Refrigerant		g/m	20		20	
Indoor Unit			**FTXS50FVMA**		**FTXS60FVMA**	
Front Panel Color			White		White	
Air Flow Rate	m³/min (cfm)	H	14.7 (519)	16.2 (572)	16.2 (572)	17.4 (614)
		M	12.6 (445)	13.8 (487)	13.9 (491)	15.3 (540)
		L	10.2 (360)	11.5 (406)	11.5 (406)	12.8 (452)
		SL	9.2 (325)	10.2 (360)	10.0 (353)	10.5 (371)
Fan	Type		Cross Flow Fan		Cross Flow Fan	
	Motor Output	W	43		43	
	Speed	Steps	5 Steps, Quiet, Auto		5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.16-0.15-0.15/0.16-0.15	0.17-0.16-0.16/0.17-0.16	0.19-0.18-0.17/0.19-0.18	0.21-0.20-0.19/0.21-0.20
Power Consumption (Rated)		W	34	36	40	45
Power Factor		%	96.6-98.6-94.4/96.6-98.6	96.3-97.8-93.8/96.3-97.8	95.7-96.6-98.0/95.7-96.6	97.4-97.8-98.7/97.4-97.8
Temperature Control			Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)		mm	290×1,050×238		290×1,050×238	
Packaged Dimensions (H×W×D)		mm	337×1,147×366		337×1,147×366	
Weight		kg	12		12	
Gross Weight		kg	17		17	
Operation Sound	H/M/L/SL	dBA	44/40/35/32	42/38/33/30	45/41/36/33	44/40/35/32
Outdoor Unit			**RXS50FVMA**		**RXS60FVMA**	
Casing Color			Ivory White		Ivory White	
Compressor	Type		Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model		2YC36BXD		2YC36BXD	
	Motor Output	W	1,100		1,100	
Refrigerant Oil	Model		FVC50K		FVC50K	
	Charge	L	0.65		0.65	
Refrigerant	Model		R-410A		R-410A	
	Charge	kg	1.50		1.50	
Air Flow Rate	m³/min (cfm)	HH	50.9 (1,797)	—	54.2 (1,914)	—
		H	48.9 (1,727)	45.0 (1,589)	50.9 (1,797)	46.3 (1,635)
		L	41.7 (1,472)	45.0 (1,589)	45.0 (1,589)	46.3 (1,635)
Fan	Type		Propeller		Propeller	
	Motor Output	W	53		53	
Running Current (Rated)		A	7.04-6.75-6.45/7.04-6.75	7.23-6.94-6.64/7.23-6.94	9.01-8.62-8.23/9.01-8.62	9.19-8.80-8.41/9.19-8.80
Power Consumption (Rated)		W	1,516	1,564	1,940	1,995
Power Factor (Rated)		%	97.9-97.6-97.9/97.9-97.6	98.3-98.0-98.1/98.3-98.0	97.9-97.9-98.2/97.9-97.9	98.7-98.6-98.8/98.7-98.6
Starting Current		A	7.4		9.4	
Dimensions (H×W×D)		mm	735×825×300		735×825×300	
Packaged Dimensions (H×W×D)		mm	792×960×390		792×960×390	
Weight		kg	48		48	
Gross Weight		kg	53		53	
Operation Sound		dBA	H:47 SL:44	L:48 SL:45	H:49 SL:46	L:49 SL:46
Drawing No.			3D054879		3D054880	

Note: ■ The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 220-230-240V / 60Hz 220-230V

Model	Indoor Units		FTXS71FVMA	
	Outdoor Units		RXS71FVMA	
			Cooling	Heating
Capacity Rated (Min.~Max.)		kW	7.1 (2.3~8.5)	8.2 (2.3~10.0)
		Btu/h	24,200 (7,800~29,000)	28,000 (7,900~34,100)
		kcal/h	6,110 (1,980~7,310)	7,050 (1,980~8,600)
Running Current Rated		A	10.8-10.4-9.9/10.8-10.4	11.6-11.1-10.6/11.6-11.1
Power Consumption Rated (Min.~Max.)		W	2,360 (570~3,200)	2,520 (520~3,730)
Power Factor (Rated)		%	99.3-98.7-99.3/99.3-98.7	98.7-98.7-99.1/98.7-98.7
COP Rated (Min.~Max.)		W/W	3.01 (4.04~2.66)	3.25 (4.42~2.68)
Piping Connections	Liquid	mm	ϕ 6.4	
	Gas	mm	ϕ15.9	
	Drain	mm	ϕ18.0	
Heat Insulation			Both Liquid and Gas Pipes	
Max. Interunit Piping Length		m	30	
Max. Interunit Height Difference		m	20	
Chargeless		m	10	
Amount of Additional Charge of Refrigerant		g/m	20	
Indoor Unit			FTXS71FVMA	
Front Panel Color			White	
Air Flow Rate	m³/min (cfm)	H	17.4 (614)	21.5 (759)
		M	14.6 (516)	18.0 (636)
		L	11.9 (420)	14.4 (508)
		SL	11.2 (395)	13.3 (470)
Fan	Type		Cross Flow Fan	
	Motor Output	W	43	
	Speed	Steps	5 Steps, Quiet, Auto	
Air Direction Control			Right, Left, Horizontal, Downward	
Air Filter			Removable / Washable / Mildew Proof	
Running Current (Rated)		A	0.21-0.20-0.19/0.21-0.20	0.28-0.27-0.26/0.28-0.27
Power Consumption (Rated)		W	45	60
Power Factor		%	97.4-97.8-98.7/97.4-97.8	97.4-96.6-96.2/97.4-96.6
Temperature Control			Microcomputer Control	
Dimensions (HxWxD)		mm	290x1,050x238	
Packaged Dimensions (HxWxD)		mm	337x1,147x366	
Weight		kg	12	
Gross Weight		kg	17	
Operation Sound	H/M/L/SL	dBA	46/42/37/34	46/42/37/34
Outdoor Unit			RXS71FVMA	
Casing Color			Ivory White	
Compressor	Type		Hermetically Sealed Swing Type	
	Model		2YC63BXD	
	Motor Output	W	1,920	
Refrigerant Oil	Model		FVC50K	
	Charge	L	0.75	
Refrigerant	Model		R-410A	
	Charge	kg	2.3	
Air Flow Rate	m³/min (cfm)	HH	57.1 (2,016)	—
		H	54.5 (1,924)	52.5 (1,854)
		L	46.0 (1,624)	52.5 (1,854)
Fan	Type		Propeller	
	Motor Output	W	66	
Running Current (Rated)		A	10.59-10.20-9.71/10.59-10.20	11.32-10.83-10.34/11.32-10.83
Power Consumption (Rated)		W	2,315	2,460
Power Factor		%	99.4-98.7-99.3/99.4-98.7	98.8-98.8-99.1/98.8-98.8
Starting Current		A	11.6	
Dimensions (HxWxD)		mm	770x900x320	
Packaged Dimensions (HxWxD)		mm	900x925x390	
Weight		kg	71	
Gross Weight		kg	78	
Operation Sound		dBA	H:52 SL:49	L:52 SL:49
Drawing No.			3D054881A	

Note: ■ The data are based on the conditions shown in the table below.

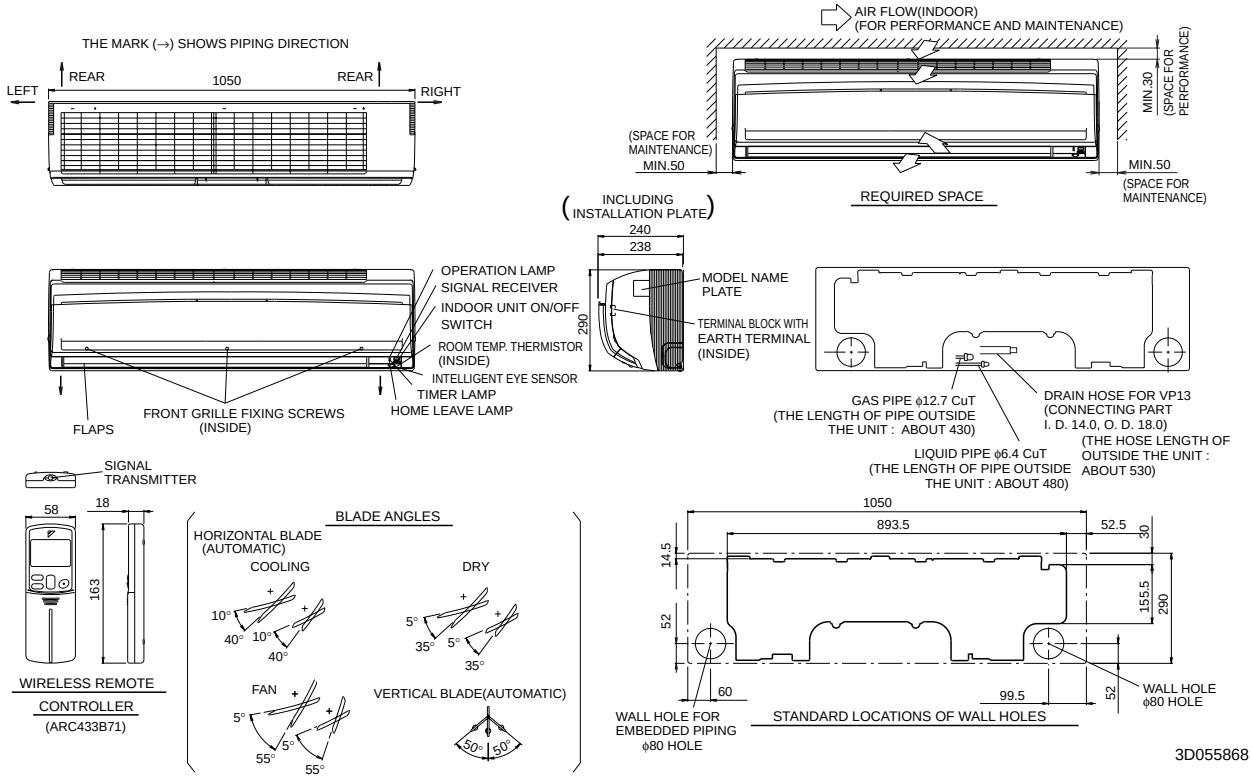
Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

Conversion Formulae
kcal/h=kWx860 Btu/h=kWx3414 cfm=m³/minx35.3

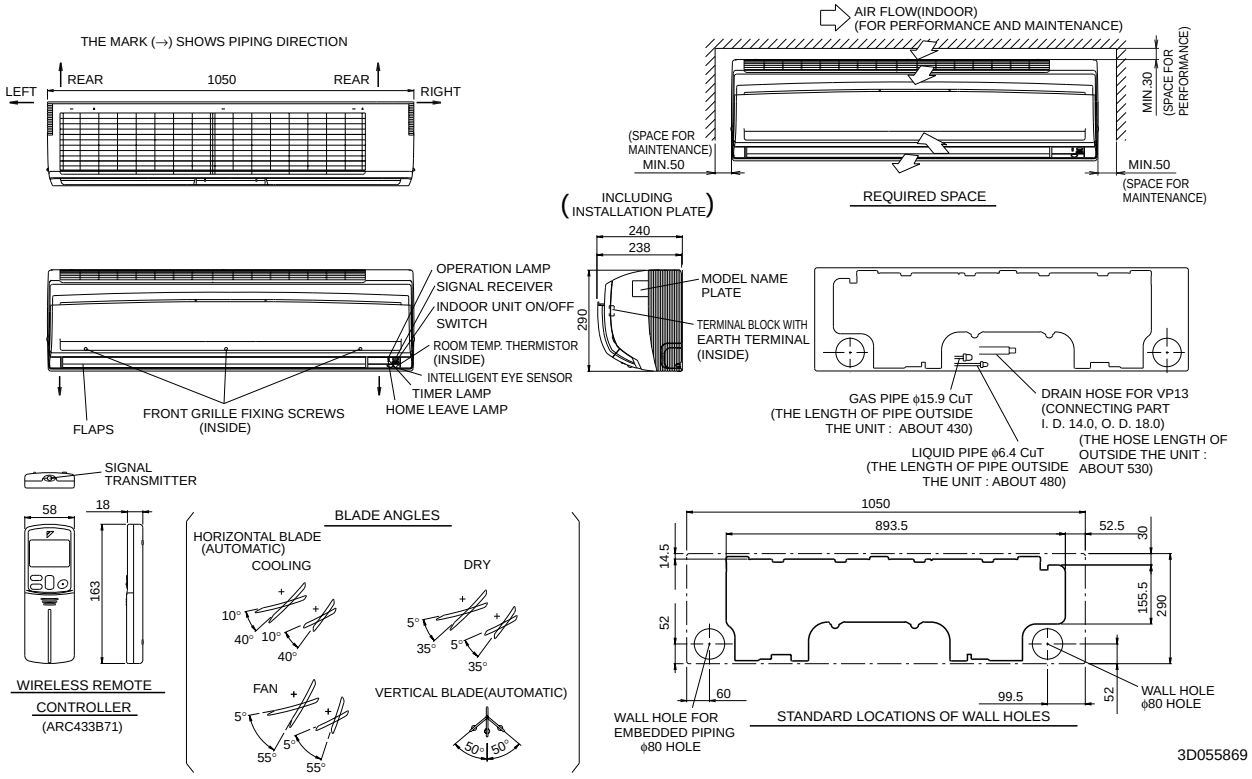
5. Dimensions

5.1 Indoor Units

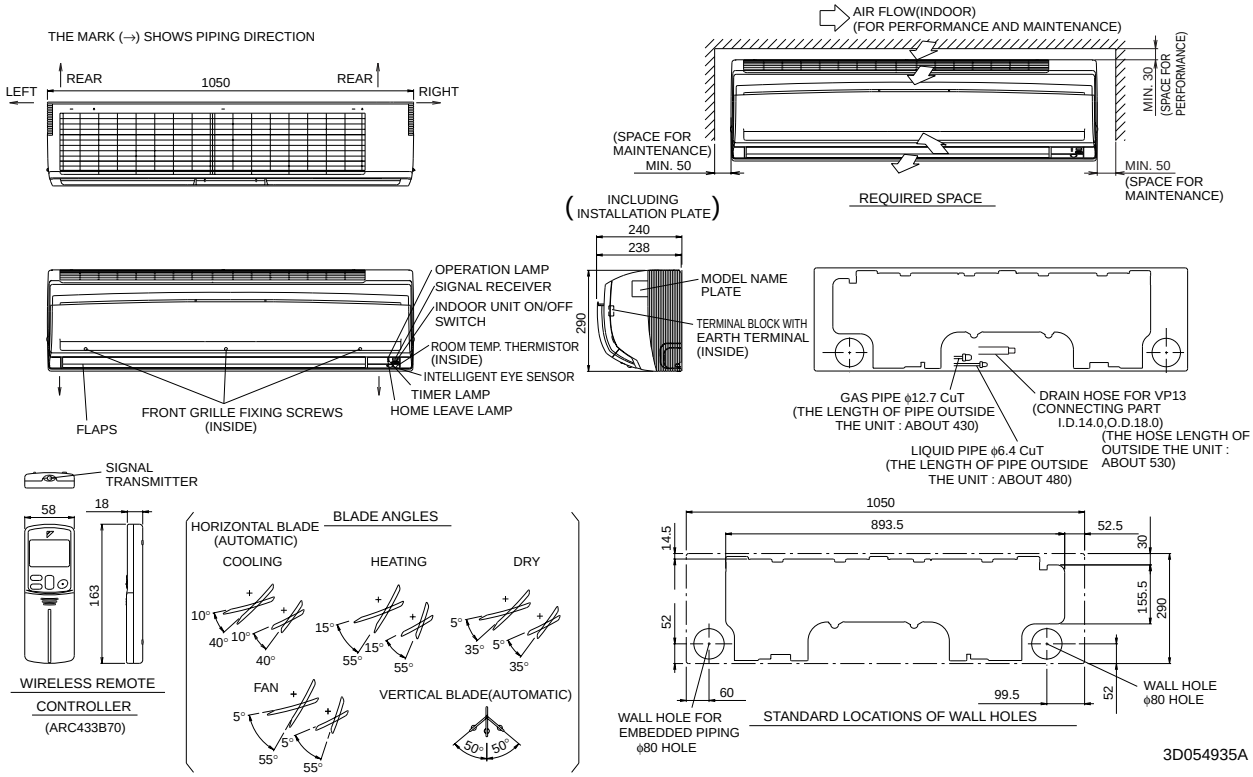
FTKS50FVM, FTKS60FVM



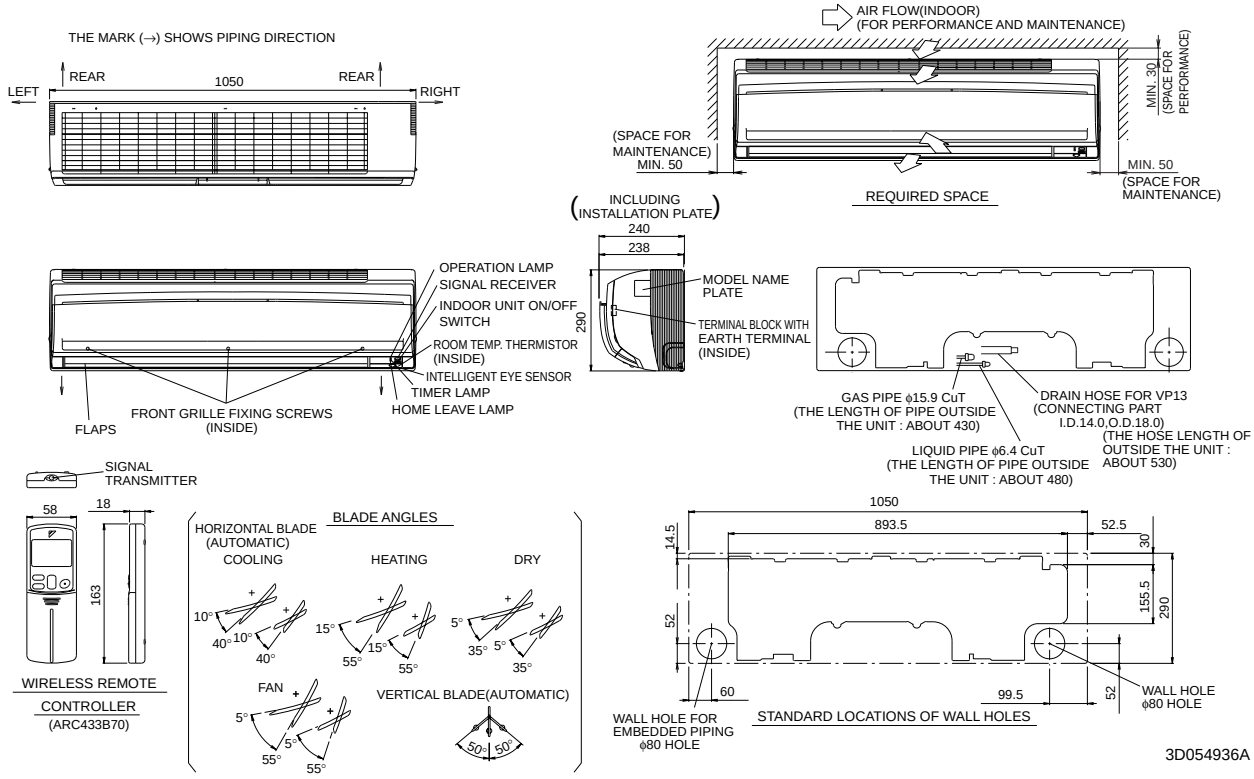
FTKS71FVM



FTXS50FVMA, FTXS60FVMA

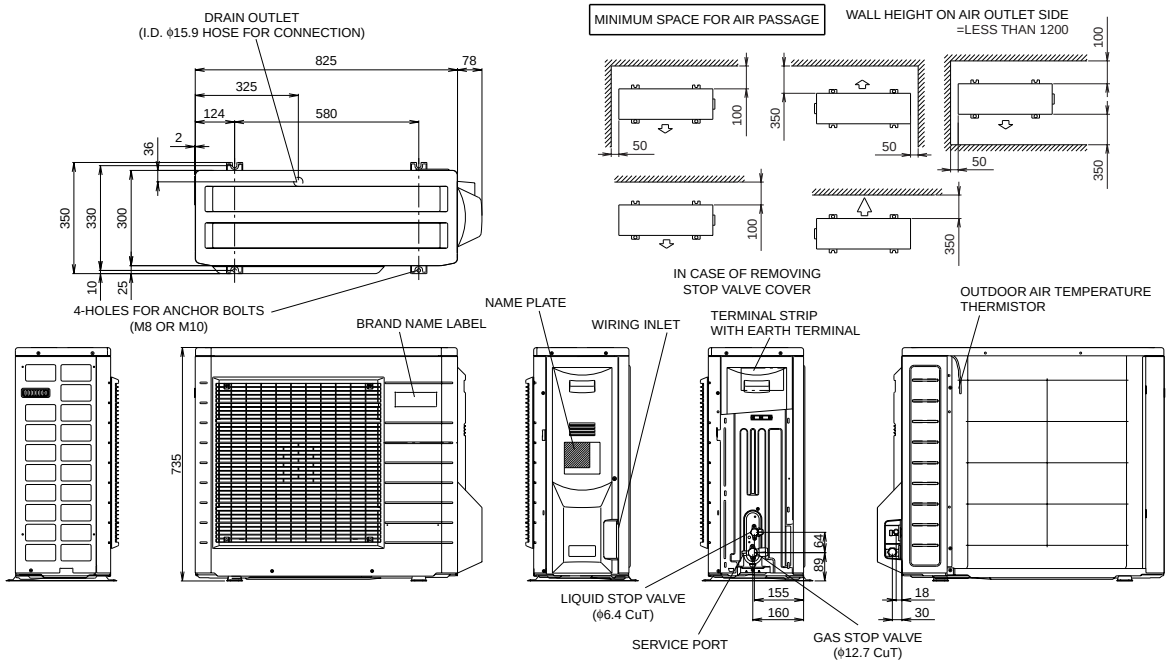


FTXS71FVMA



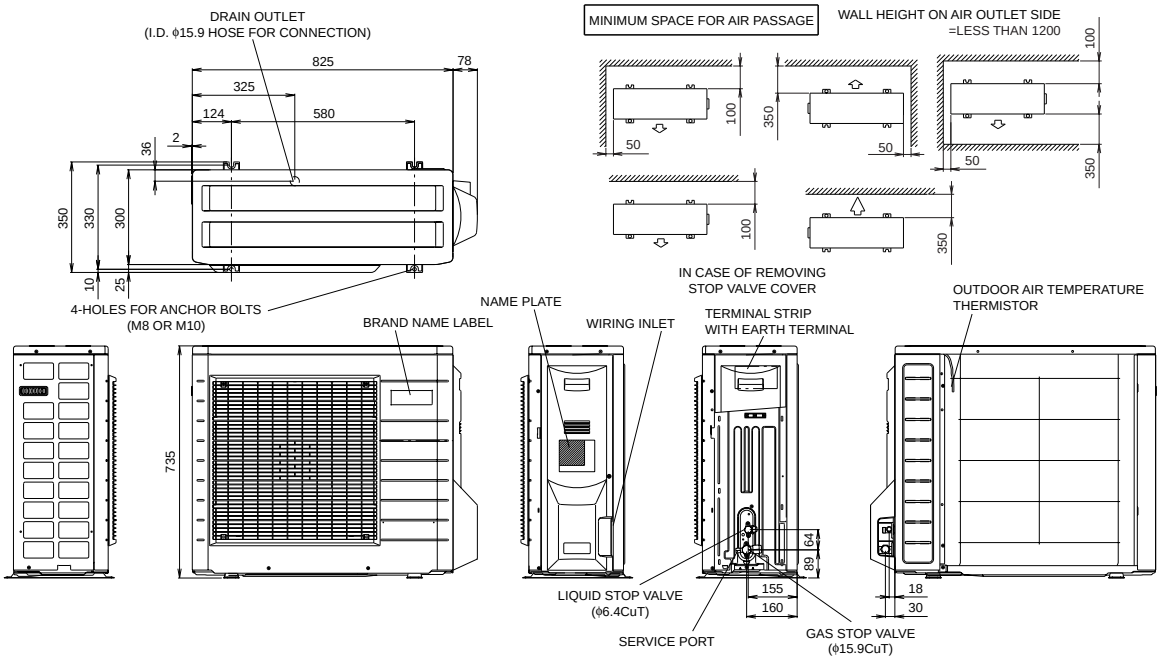
5.2 Outdoor Units

RKS50FVM, RKS60FVM
RXS50FVMA, RXS60FVMA



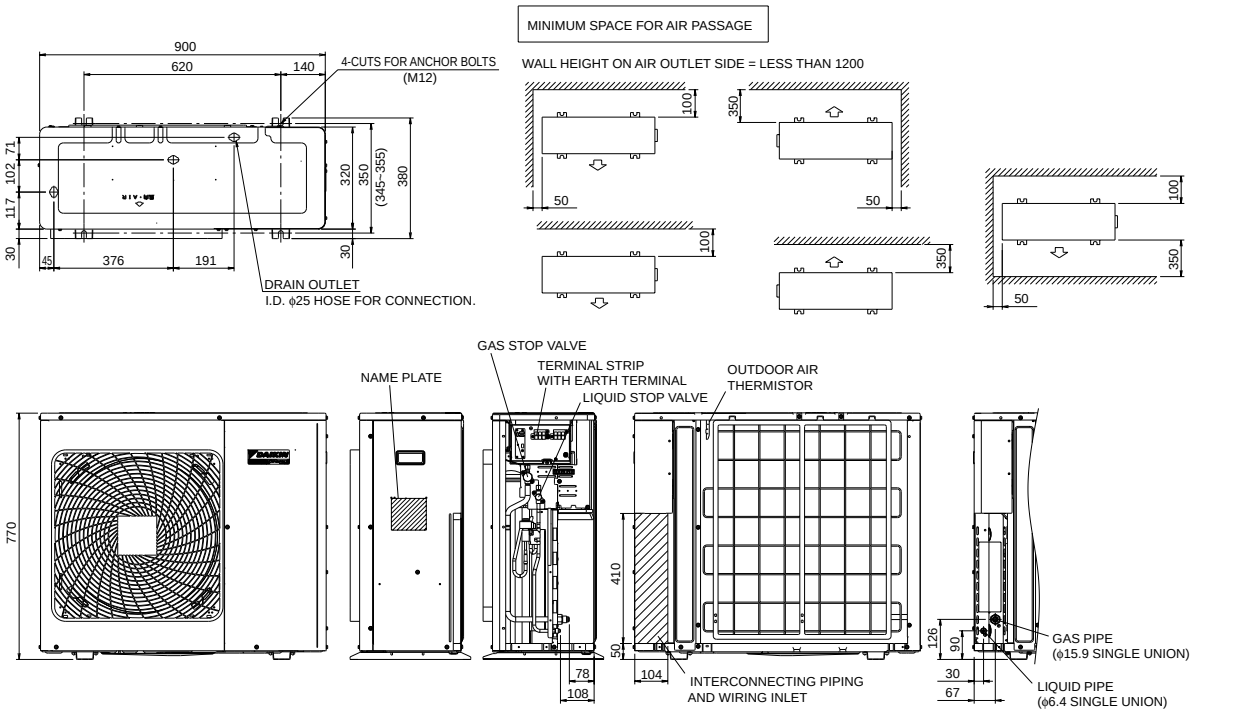
3D051657D

RKS71FVM



3D051658C

RXS71FVMA

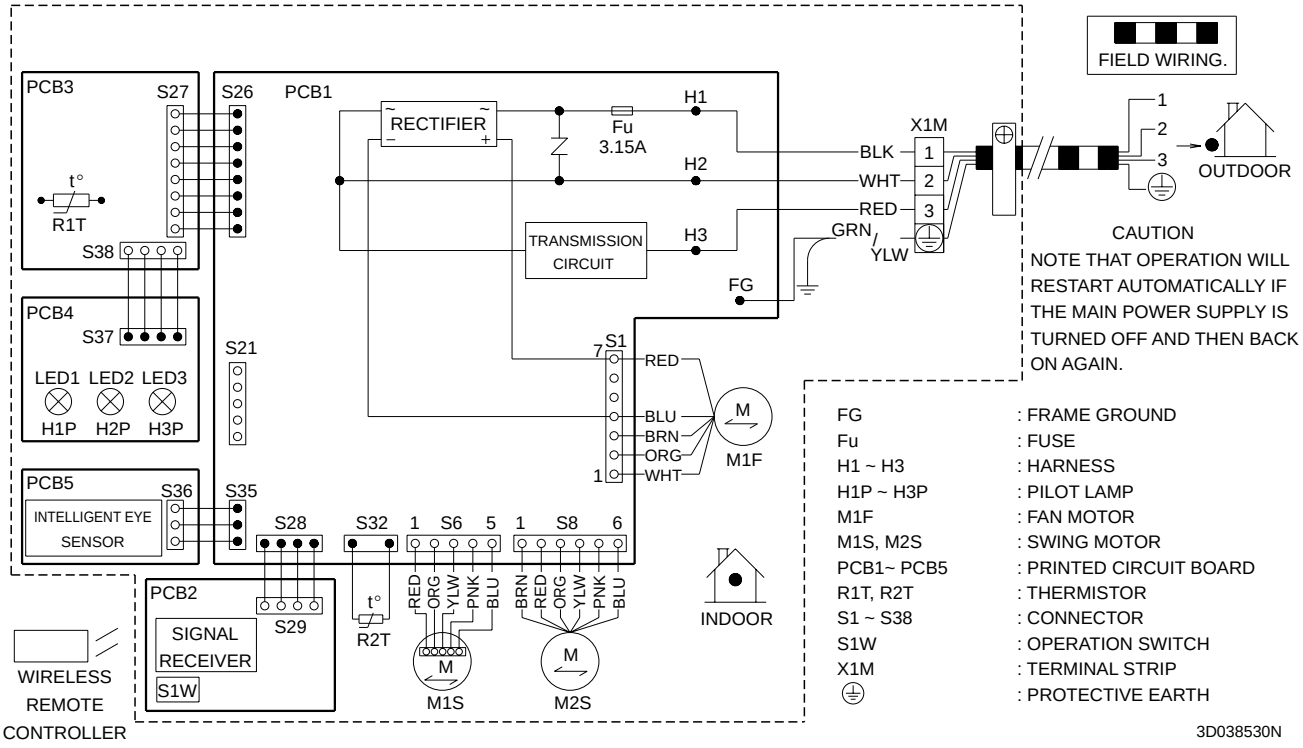


3D054589A

6. Wiring Diagrams

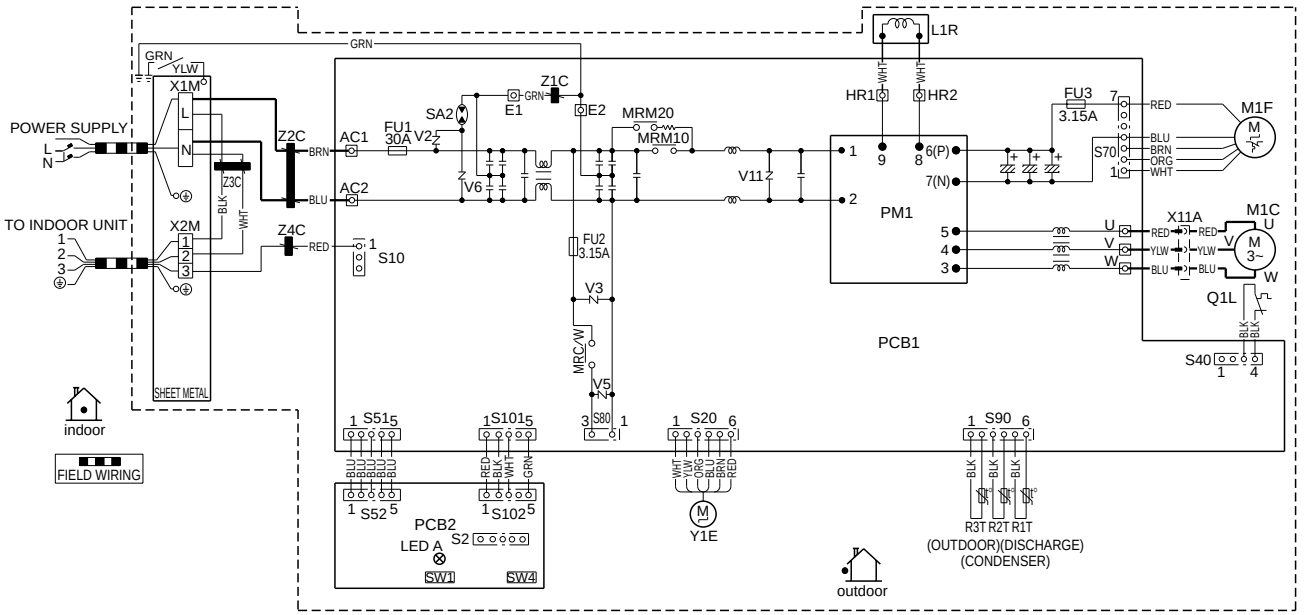
6.1 Indoor Units

FTKS50FVM, FTKS60FVM, FTKS71FVM, FTXS50FVMA, FTXS60FVMA, FTXS71FVMA



6.2 Outdoor Units

RKS50FVM, RKS60FVM



Z1C ~ Z4C	: FERRITE CORE	MRM10, MRM20		L	: LIVE	M1C	: COMPRESSOR MOTOR
X1M, X2M	: TERMINAL STRIP	MRC/W	: MAGNETIC RELAY	N	: NEUTRAL	M1F	: FAN MOTOR
Y1E	: ELECTRONIC EXPANSION VALVE COIL	R1T ~ R3T	: THERMISTOR	SW1	: FORCED OPERATION ON/OFF SW(SW1)	L1R	: REACTOR
V2, V3, V5, V6, V11	: VARISTOR	S2 ~ S102	: CONNECTOR	SW4	: LOCALSETTING SW (SW4)	Q1L	: OVERLOAD PROTECTOR
SA2	: SURGE ARRESTER	LEDA	: PILOT LAMP			PM1	: POWER MODULE
FU1, FU2, FU3	: FUSE					PCB1, 2	: PRINTED CIRCUIT BOARD
AC1, AC2						STEEL METAL	: TERMINAL STRIP FIXED PLATE
U, V, W, X11A							
E1, E2							
HR1, HR2	: CONNECTOR						

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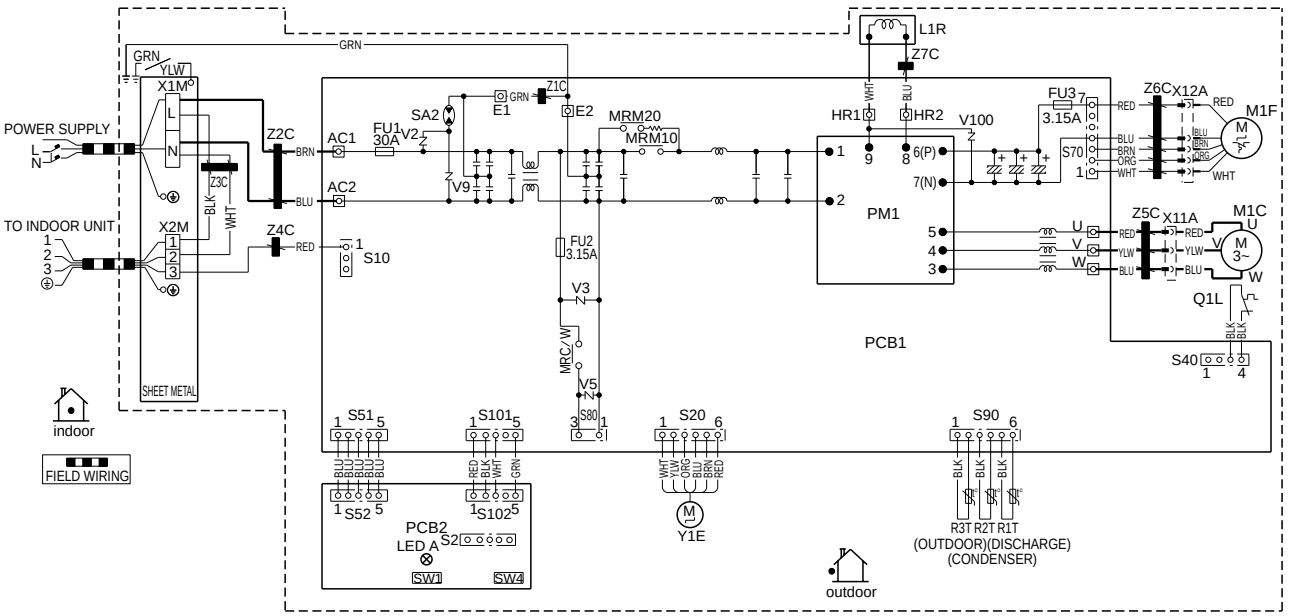
RKS71FVM



Z1C~Z7C	: FERRITE CORE	MRM10, MRM20		L	: LIVE	M1C	: COMPRESSOR MOTOR
X1M, X2M	: TERMINAL STRIP	MRC/W	: MAGNETIC RELAY	N	: NEUTRAL	M1F	: FAN MOTOR
Y1E	: ELECTRONIC EXPANSION VALVE COIL	R1T~R3T	: THERMISTOR	SW1	: FORCED OPERATION ON/OFF SW (SW1)	L1R	: REACTOR
V2, V3, V5, V9, V100	: VARISTOR	S2~S102	: CONNECTOR	SW4	: LOCAL SETTING SW (SW4)	Q1L	: OVERLOAD PROTECTOR
SA2	: SURGE ARRESTER	LEDA	: PILOT LAMP			PM1	: POWER MODULE
FU1, FU2, FU3	: FUSE					PCB1, 2	: PRINTED CIRCUIT BOARD
AC1, AC2						SHEET METAL	: TERMINAL STRIP FIXED PLATE
U, V, W, X11A, X12A							
E1, E2							
HR1, HR2	: CONNECTOR						

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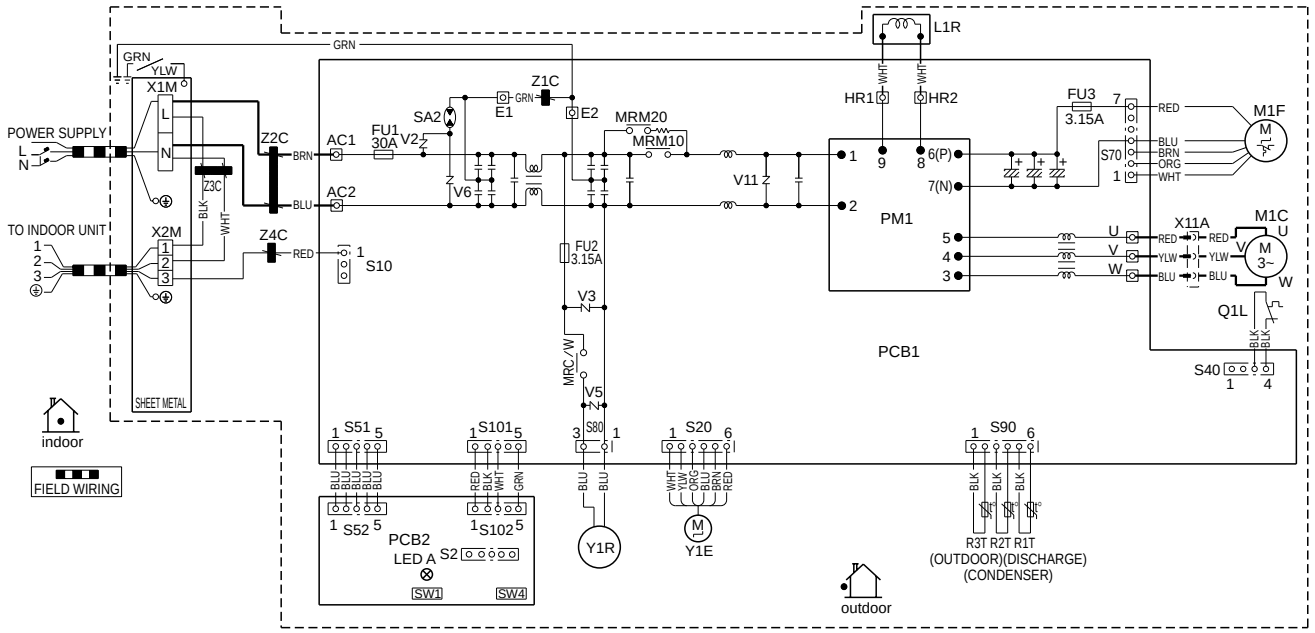
RXS50FVMA, RXS60FVMA



Z1C ~ Z4C	: FERRITE CORE	MRM10, MRM20		L	: LIVE	M1C	: COMPRESSOR MOTOR
X1M, X2M	: TERMINAL STRIP	MRC/W	: MAGNETIC RELAY	N	: NEUTRAL	M1F	: FAN MOTOR
Y1E	: ELECTRONIC EXPANSION VALVE COIL	R1T ~ R3T	: THERMISTOR	SW1	: FORCED OPERATION ON/OFF SW(SW1)	L1R	: REACTOR
V2, V3, V5, V6, V11	: VARISTOR	S2 ~ S102	: CONNECTOR	SW4	: LOCAL SETTING SW (SW4)	Q1L	: OVERLOAD PROTECTOR
SA2	: SURGE ARRESTER	LEDA	: PILOT LAMP			PM1	: POWER MODULE
FU1, FU2, FU3	: FUSE					PCB1, 2	: PRINTED CIRCUIT BOARD
AC1, AC2						Y1R	: REVERSING SORENOID VALVE COIL
U, V, W, X11A						SHEET METAL	: TERMINAL STRIP FIXED PLATE
E1, E2							
HR1, HR2	: CONNECTOR						

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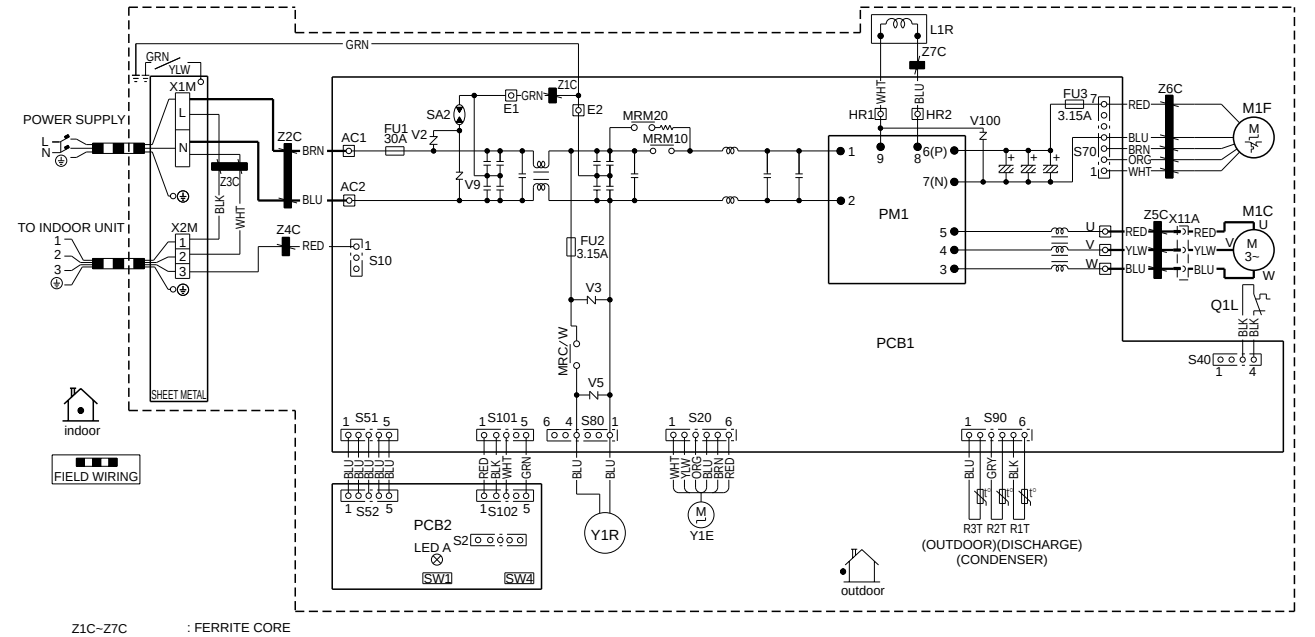
RXS71FVMA



Z1C~Z7C	: FERRITE CORE	MRM10,MRM20		L	: LIVE	M1C	: COMPRESSOR MOTOR
X1M,X2M	: TERMINAL STRIP	MRC/W	: MAGNETIC RELAY	N	: NEUTRAL	M1F	: FAN MOTOR
Y1E	: ELECTRONIC EXPANSION VALVE COIL	R1T~R3T	: THERMISTOR	SW1	: FORCED OPERATION ON/OFF SW (SW1)	L1R	: REACTOR
V2,V3,V5,V9,V100	: VARISTOR	S2~S102	: CONNECTOR	SW4	: LOCAL SETTING SW (SW4)	Q1L	: OVERLOAD PROTECTOR
SA2	: SURGE ARRESTER	LEDA	: PILOT LAMP			PM1	: POWER MODULE
FU1,FU2,FU3	: FUSE					PCB1,2	: PRINTED CIRCUIT BOARD
AC1,AC2						Y1R	: REVERSING SOLENOID VALVE COIL
U,V,W,X11A,X12A						SHEET METAL	: TERMINAL STRIP FIXED PLATE
E1,E2							
HR1,HR2	: CONNECTOR						

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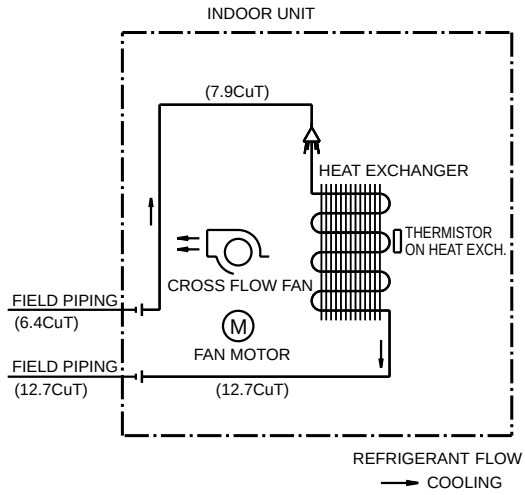
7. Piping Diagrams

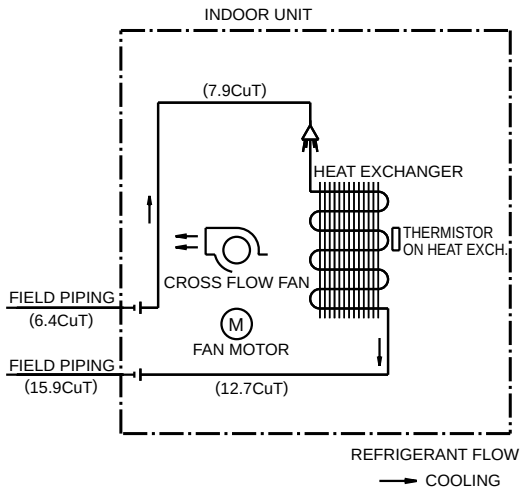
7.1 Indoor Units

FTKS50FVM, FTKS60FVM



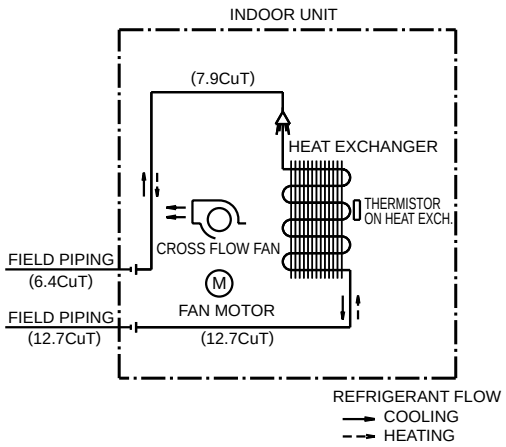
4D054932A

FTKS71FVM



4D050919E

FTXS50FVMA, FTXS60FVMA



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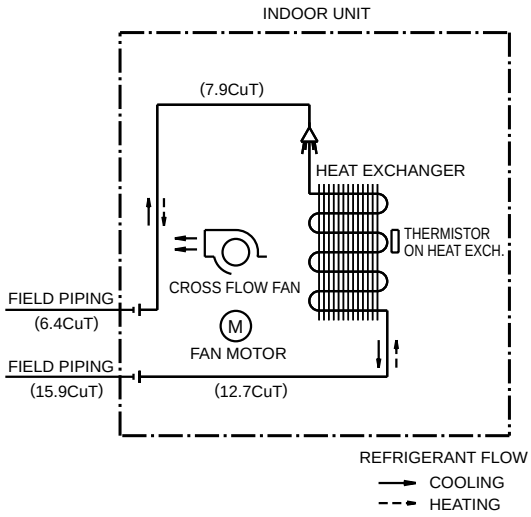
FTXS71FVMA



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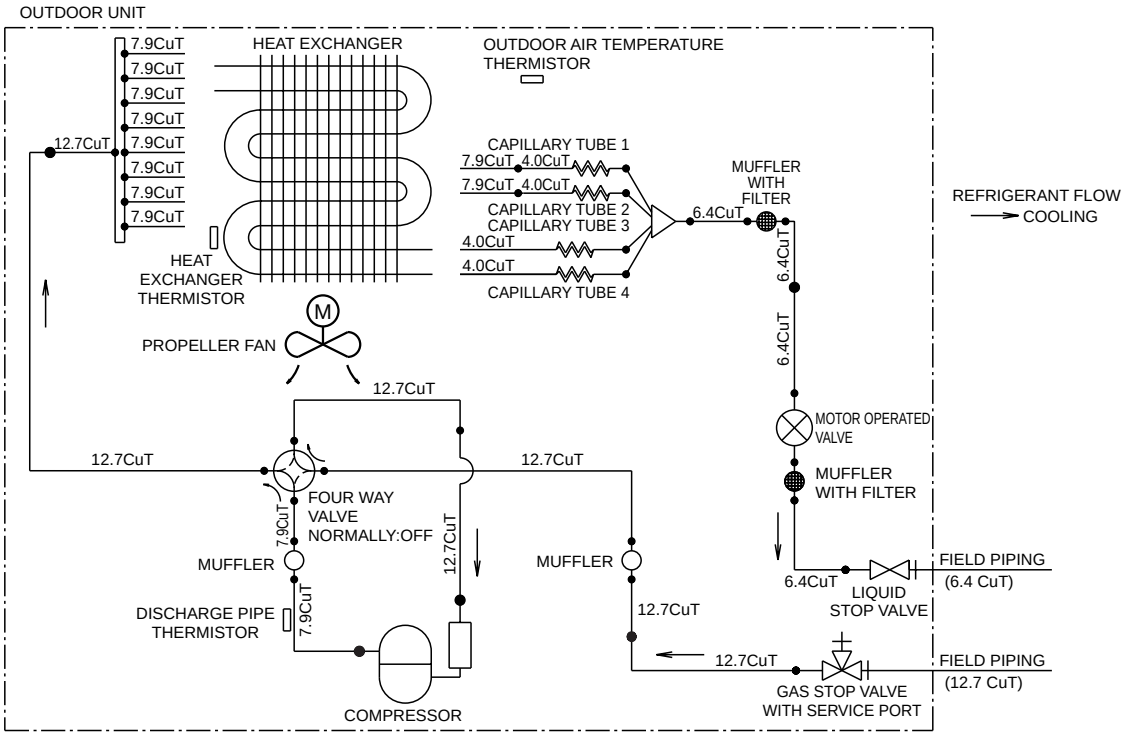
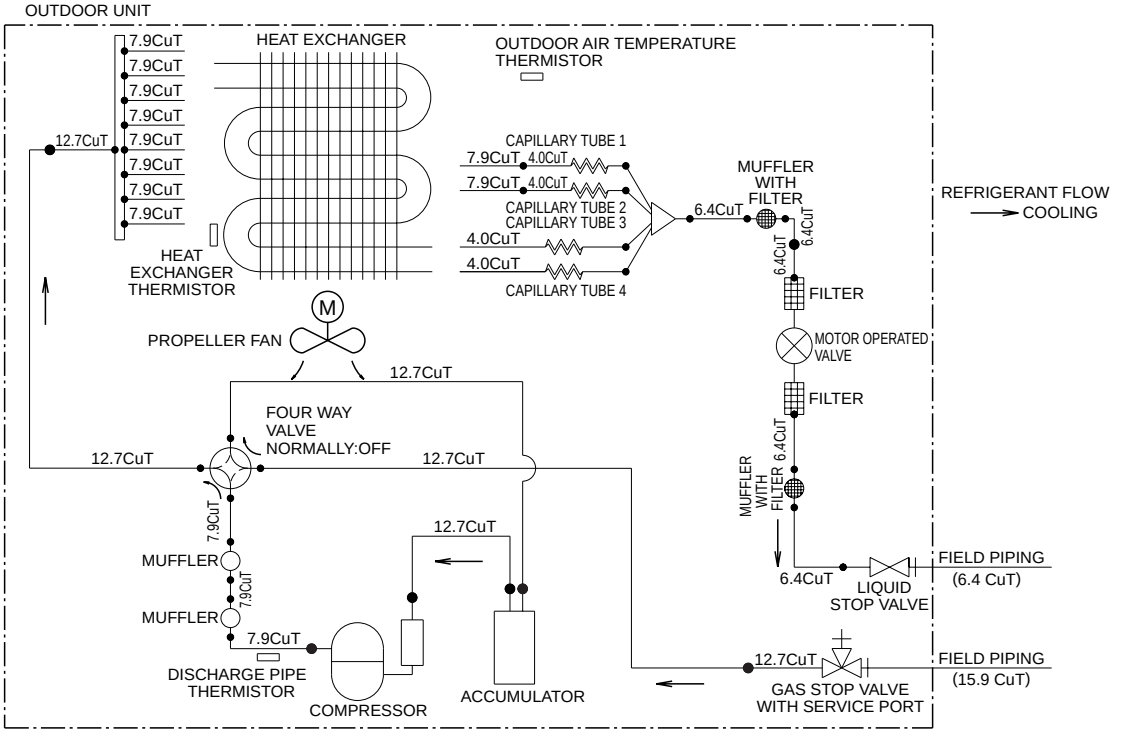
7.2 Outdoor Units

7.2.1 Cooling Only

RKS50FVM, RKS60FVM

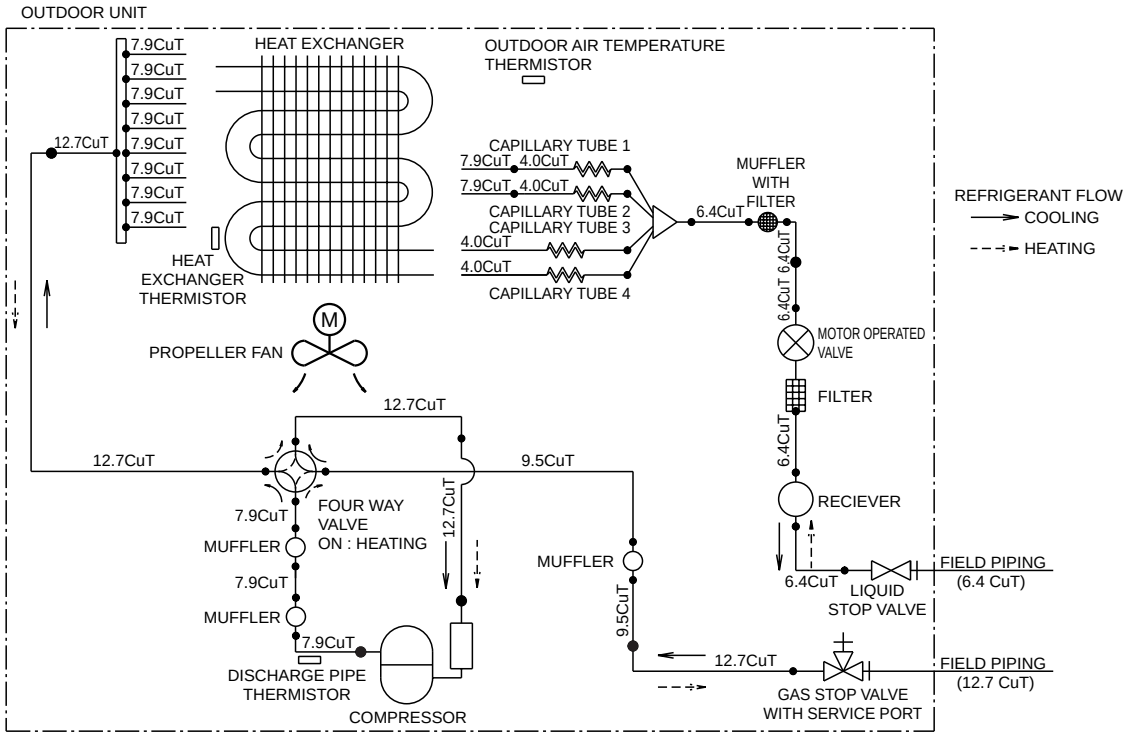


RKS71FVM



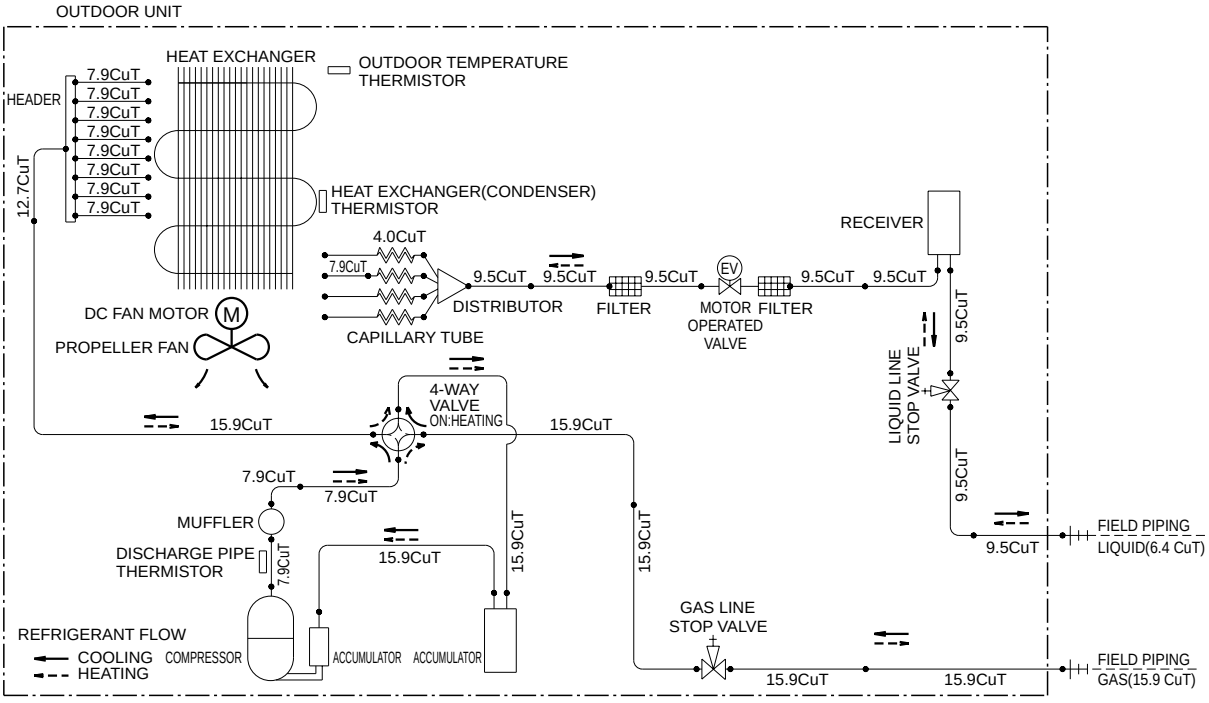
7.2.2 Heat Pump

RXS50FVMA, RXS60FVMA



3D051637D

RXS71FVMA



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8. Capacity Tables

8.1 Cooling Only

FTKS50FVM + RKS50FVM (50Hz 220-240V / 60Hz 220-230V)

AFR	14.7
BF	0.28

INDOOR		OUTDOOR TEMPERATURE(°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.12	3.61	1.19	4.89	3.49	1.30	4.66	3.37	1.42	4.56	3.32	1.46	4.42	3.25	1.53	4.19	3.13	1.65
16.0	22	5.35	3.55	1.20	5.12	3.43	1.31	4.89	3.32	1.43	4.79	3.27	1.47	4.65	3.21	1.54	4.42	3.10	1.65
18.0	25	5.58	3.69	1.20	5.35	3.58	1.32	5.12	3.47	1.43	5.02	3.43	1.48	4.88	3.37	1.55	4.65	3.26	1.66
19.0	27	5.70	3.86	1.21	5.47	3.75	1.32	5.23	3.65	1.44	5.14	3.61	1.48	5.00	3.55	1.55	4.77	3.45	1.66
22.0	30	6.04	3.71	1.22	5.81	3.62	1.33	5.58	3.52	1.45	5.49	3.49	1.49	5.35	3.43	1.56	5.11	3.35	1.67
24.0	32	6.27	3.60	1.22	6.04	3.52	1.34	5.81	3.43	1.45	5.72	3.40	1.50	5.58	3.35	1.57	5.34	3.27	1.68

Symbols

AFR	: Air flow rate	(m³/min.)
BF	: Bypass factor	
EWB	: Entering wet bulb temp.	(°C)
EDB	: Entering dry bulb temp.	(°C)
TC	: Total capacity	(kW)
SHC	: Sensible heat capacity	(kW)
PI	: Power input	(kW)

NOTE:

1. Capacities are based on the following conditions.
   (1) Corresponding refrigerant piping length : 7.5m
   (2) Level difference : 0m
2. shows nominal (rated) capacities and power input.

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FTKS60FVM + RKS60FVM (50Hz 220-240V / 60Hz 220-230V)

AFR	16.2
BF	0.29

INDOOR		OUTDOOR TEMPERATURE(°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.60	3.94	1.49	5.60	3.94	1.66	5.59	3.94	1.82	5.48	3.88	1.88	5.31	3.79	1.97	5.03	3.64	2.12
16.0	22	6.42	4.17	1.54	6.14	4.02	1.68	5.86	3.88	1.83	5.75	3.82	1.89	5.59	3.74	1.98	5.31	3.60	2.12
18.0	25	6.70	4.31	1.54	6.42	4.17	1.69	6.14	4.04	1.84	6.03	3.99	1.90	5.86	3.91	1.99	5.58	3.78	2.13
19.0	27	6.84	4.49	1.55	6.56	4.36	1.70	6.28	4.23	1.84	6.17	4.18	1.90	6.00	4.10	1.99	5.72	3.98	2.14
22.0	30	7.25	4.31	1.56	6.97	4.19	1.71	6.69	4.08	1.86	6.58	4.04	1.91	6.41	3.97	2.00	6.14	3.86	2.15
24.0	32	7.53	4.18	1.57	7.25	4.07	1.72	6.97	3.97	1.86	6.86	3.93	1.92	6.69	3.87	2.01	6.41	3.77	2.16

Symbols

AFR	: Air flow rate	(m³/min.)
BF	: Bypass factor	
EWB	: Entering wet bulb temp.	(°C)
EDB	: Entering dry bulb temp.	(°C)
TC	: Total capacity	(kW)
SHC	: Sensible heat capacity	(kW)
PI	: Power input	(kW)

NOTE:

1. Capacities are based on the following conditions.
   (1) Corresponding refrigerant piping length : 7.5m
   (2) Level difference : 0m
2. shows nominal (rated) capacities and power input.

3D056392

FTKS71FVM + RKS71FVM (50Hz 220-240V / 60Hz 220-230V)

AFR	17.4
BF	0.30

INDOOR		OUTDOOR TEMPERATURE(°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.93	4.18	1.79	5.93	4.18	2.02	5.93	4.18	2.25	5.93	4.18	2.33	5.93	4.18	2.46	5.93	4.18	2.67
16.0	22	7.28	4.67	1.91	7.27	4.66	2.12	6.94	4.48	2.31	6.81	4.41	2.38	6.61	4.31	2.49	6.28	4.14	2.68
18.0	25	7.93	4.98	1.95	7.60	4.81	2.13	7.27	4.65	2.32	7.13	4.58	2.39	6.94	4.48	2.50	6.61	4.33	2.69
19.0	27	8.09	5.16	1.95	7.76	5.00	2.14	7.43	4.84	2.32	7.30	4.78	2.40	7.10	4.69	2.51	6.77	4.53	2.70
22.0	30	8.58	4.95	1.97	8.25	4.81	2.16	7.92	4.67	2.34	7.79	4.61	2.42	7.59	4.53	2.53	7.26	4.39	2.71
24.0	32	8.91	4.79	1.98	8.58	4.66	2.17	8.25	4.53	2.35	8.12	4.48	2.43	7.92	4.40	2.54	7.59	4.28	2.72

Symbols

AFR	: Air flow rate	(m^3/min.)
BF	: Bypass factor	
EWB	: Entering wet bulb temp.	(°C)
EDB	: Entering dry bulb temp.	(°C)
TC	: Total capacity	(kW)
SHC	: Sensible heat capacity	(kW)
PI	: Power input	(kW)

NOTE:

1. Capacities are based on the following conditions.
   (1) Corresponding refrigerant piping length : 7.5m
   (2) Level difference : 0m
2. shows nominal (rated) capacities and power input.

3D056393

8.2 Heat Pump

FTXS50FVMA + RXS50FVMA (50Hz 220-240V / 60Hz 220-230V)

Cooling

AFR	14.7
BF	0.18

INDOOR		OUTDOOR TEMPERATURE(°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.12	3.74	1.19	4.89	3.62	1.30	4.66	3.51	1.42	4.56	3.46	1.46	4.42	3.39	1.53	4.19	3.28	1.65
16.0	22	5.35	3.68	1.20	5.12	3.57	1.31	4.89	3.46	1.43	4.79	3.41	1.47	4.65	3.35	1.54	4.42	3.24	1.65
18.0	25	5.58	3.84	1.20	5.35	3.74	1.32	5.12	3.64	1.43	5.02	3.60	1.48	4.88	3.53	1.55	4.65	3.44	1.66
19.0	27	5.70	4.04	1.21	5.47	3.94	1.32	5.23	3.84	1.44	5.14	3.81	1.48	5.00	3.75	1.55	4.77	3.65	1.66
22.0	30	6.04	3.90	1.22	5.81	3.81	1.33	5.58	3.72	1.45	5.49	3.69	1.49	5.35	3.63	1.56	5.11	3.55	1.67
24.0	32	6.27	3.79	1.22	6.04	3.71	1.34	5.81	3.63	1.45	5.72	3.60	1.50	5.58	3.55	1.57	5.34	3.47	1.68

Heating

AFR	16.2

INDOOR	OUTDOOR TEMPERATURE(°CWB)									
EDB	–10		–5		0		6		10	
°C	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
15.0	3.90	1.35	4.56	1.42	5.21	1.48	6.00	1.56	6.52	1.62
20.0	3.70	1.39	4.36	1.46	5.01	1.52	5.80	1.60	6.32	1.65
22.0	3.62	1.40	4.28	1.47	4.93	1.54	5.72	1.61	6.24	1.67
24.0	3.54	1.42	4.20	1.48	4.85	1.55	5.64	1.63	6.16	1.68
25.0	3.50	1.43	4.16	1.49	4.81	1.56	5.60	1.64	6.12	1.69
27.0	3.42	1.44	4.08	1.51	4.73	1.57	5.52	1.65	6.04	1.70

Symbols

AFR	: Air flow rate	(m^3/min.)
BF	: Bypass factor	
EWB	: Entering wet bulb temp.	(°C)
EDB	: Entering dry bulb temp.	(°C)
TC	: Total capacity	(kW)
SHC	: Sensible heat capacity	(kW)
PI	: Power input	(kW)

NOTE:

1. Capacities are based on the following conditions.
   (1) Corresponding refrigerant piping length : 7.5m
   (2) Level difference : 0m
2. shows nominal (rated) capacities and power input.

3D055262

FTXS60FVMA + RXS60FVMA (50Hz 220-240V / 60Hz 220-230V)

Cooling

AFR	16.2
BF	0.28

INDOOR		OUTDOOR TEMPERATURE(°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.68	4.00	1.49	5.68	4.00	1.66	5.59	3.95	1.81	5.48	3.89	1.87	5.31	3.80	1.96	5.03	3.66	2.10
16.0	22	6.42	4.18	1.53	6.14	4.03	1.67	5.86	3.89	1.82	5.75	3.84	1.88	5.59	3.75	1.97	5.31	3.62	2.11
18.0	25	6.70	4.32	1.54	6.42	4.19	1.68	6.14	4.06	1.83	6.03	4.00	1.89	5.86	3.93	1.98	5.58	3.80	2.12
19.0	27	6.84	4.51	1.54	6.56	4.38	1.69	6.28	4.25	1.83	6.17	4.20	1.89	6.00	4.12	1.98	5.72	4.00	2.13
22.0	30	7.25	4.33	1.55	6.97	4.21	1.70	6.69	4.10	1.85	6.58	4.06	1.91	6.41	3.99	1.99	6.14	3.88	2.14
24.0	32	7.53	4.20	1.56	7.25	4.09	1.71	6.97	3.99	1.86	6.86	3.95	1.91	6.69	3.89	2.00	6.41	3.79	2.15

Heating

AFR	17.4

INDOOR	OUTDOOR TEMPERATURE(°CWB)									
EDB	–10		–5		0		6		10	
°C	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
15.0	4.71	1.73	5.50	1.81	6.29	1.89	7.24	1.99	7.87	2.06
20.0	4.47	1.77	5.26	1.86	6.05	1.94	7.00	2.04	7.63	2.11
22.0	4.37	1.79	5.16	1.87	5.95	1.96	6.90	2.06	7.54	2.13
24.0	4.28	1.81	5.07	1.89	5.86	1.98	6.81	2.08	7.44	2.14
25.0	4.23	1.82	5.02	1.90	5.81	1.99	6.76	2.09	7.39	2.15
27.0	4.13	1.84	4.92	1.92	5.71	2.00	6.66	2.10	7.29	2.17

Symbols

AFR	: Air flow rate	(m^3/min.)
BF	: Bypass factor	
EWB	: Entering wet bulb temp.	(°C)
EDB	: Entering dry bulb temp.	(°C)
TC	: Total capacity	(kW)
SHC	: Sensible heat capacity	(kW)
PI	: Power input	(kW)

NOTE:

1. Capacities are based on the following conditions.
   (1) Corresponding refrigerant piping length : 7.5m
   (2) Level difference : 0m
2. shows nominal (rated) capacities and power input.

3D055263

FTXS71FVMA + RXS71FVMA (50Hz 220-240V / 60Hz 220-230V)

Cooling

AFR	17.4
BF	0.27

INDOOR		OUTDOOR TEMPERATURE(°CDB)																	
EWB	EDB	20			25			30			32			35			40		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	6.18	4.36	1.68	6.18	4.36	1.90	6.18	4.36	2.11	6.18	4.36	2.20	6.18	4.36	2.32	5.95	4.23	2.51
16.0	22	7.60	4.87	1.82	7.27	4.69	2.00	6.94	4.52	2.17	6.81	4.45	2.24	6.61	4.35	2.34	6.28	4.19	2.52
18.0	25	7.93	5.02	1.83	7.60	4.85	2.01	7.27	4.69	2.18	7.13	4.63	2.25	6.94	4.53	2.35	6.61	4.38	2.53
19.0	27	8.09	5.21	1.84	7.76	5.06	2.01	7.43	4.90	2.19	7.30	4.84	2.26	7.10	4.75	2.36	6.77	4.60	2.53
22.0	30	8.58	5.00	1.85	8.25	4.86	2.03	7.92	4.72	2.20	7.79	4.67	2.27	7.59	4.59	2.38	7.26	4.45	2.55
24.0	32	8.91	4.85	1.86	8.58	4.72	2.04	8.25	4.59	2.21	8.12	4.54	2.28	7.92	4.46	2.39	7.59	4.34	2.56

Heating

AFR	21.5

INDOOR	OUTDOOR TEMPERATURE(°CWB)									
EDB	–10		–5		0		6		10	
°C	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
15.0	5.52	2.13	6.45	2.23	7.37	2.34	8.48	2.46	9.22	2.55
20.0	5.24	2.19	6.16	2.29	7.09	2.40	8.20	2.52	8.94	2.60
22.0	5.12	2.21	6.05	2.31	6.98	2.42	8.09	2.54	8.83	2.63
24.0	5.01	2.23	5.94	2.34	6.86	2.44	7.97	2.57	8.71	2.65
25.0	4.95	2.24	5.88	2.35	6.81	2.45	7.92	2.58	8.66	2.66
27.0	4.84	2.27	5.77	2.37	6.69	2.47	7.80	2.60	8.39	2.67

Symbols

AFR	: Air flow rate	(m^3/min.)
BF	: Bypass factor	
EWB	: Entering wet bulb temp.	(°C)
EDB	: Entering dry bulb temp.	(°C)
TC	: Total capacity	(kW)
SHC	: Sensible heat capacity	(kW)
PI	: Power input	(kW)

NOTE:

1. Capacities are based on the following conditions.
   (1) Corresponding refrigerant piping length : 7.5m
   (2) Level difference : 0m
2. shows nominal (rated) capacities and power input.

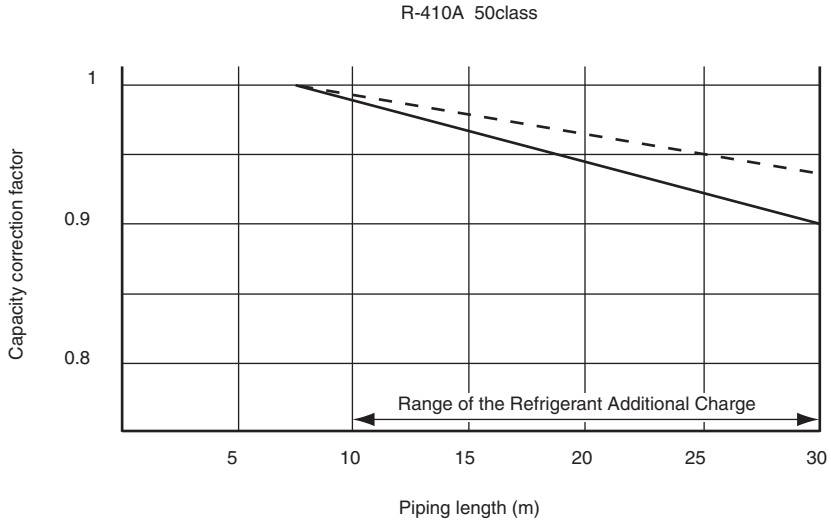
3D055264

8.3 Capacity Correction Factor by the Length of Refrigerant Piping (Reference)

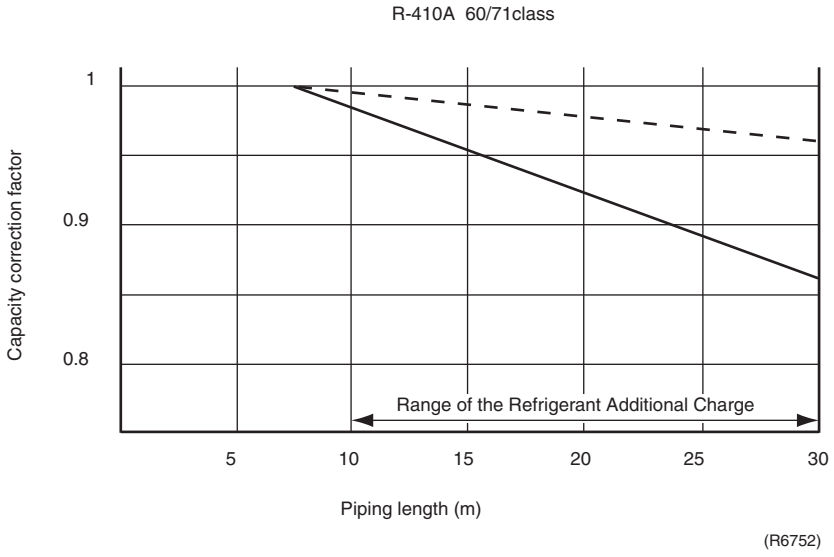
The cooling and the heating capacity of the unit has to be corrected in accordance with the length of refrigerant piping. (The distance between the indoor unit and the outdoor unit)

■ **Split System** < — line : Cooling Capacity>
< --- line : Heating Capacity>

8.3.1 50 class



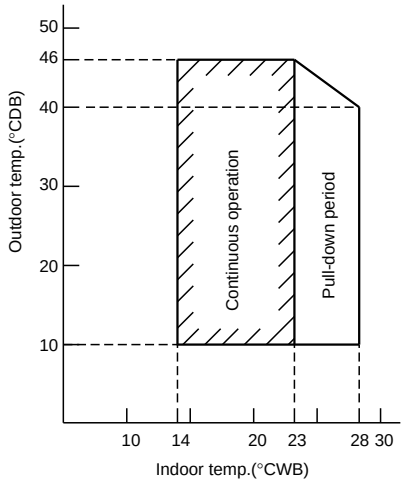
8.3.2 60 / 71 class



Note: 1. The graphs show the factor when additional refrigerant of the proper quantity is charged.

9. Operation Limit

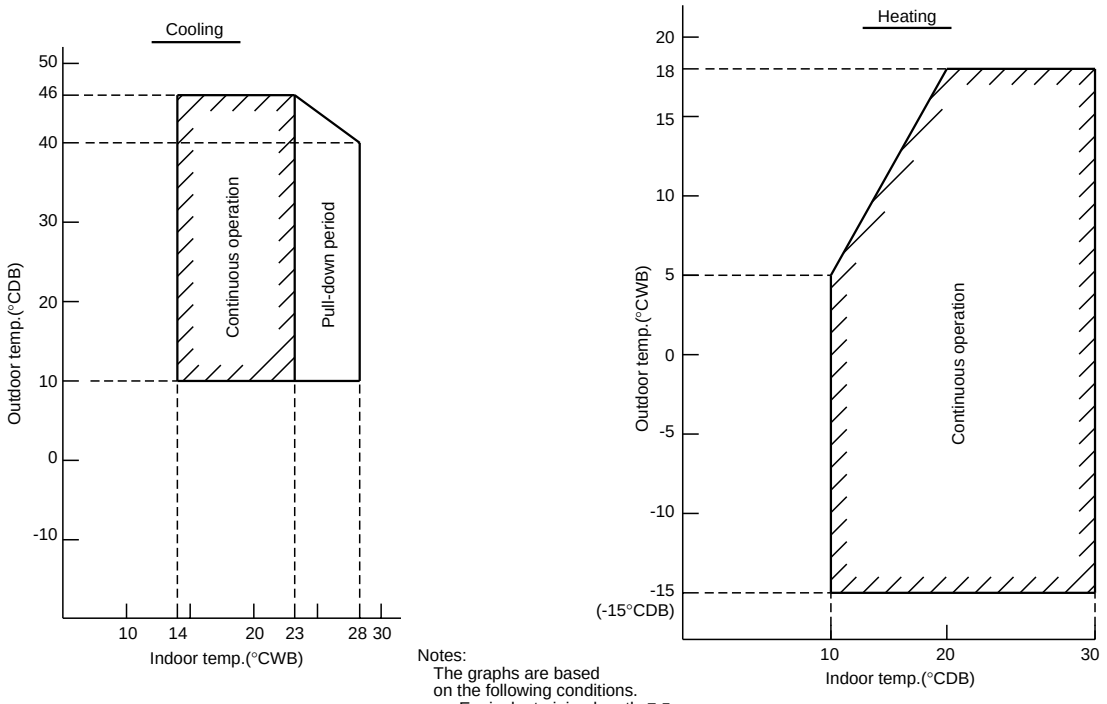
RKS50FVM, RKS60FVM, RKS71FVM



Notes:
The graph is based on the following conditions.
- Equivalent piping length 7.5m
- Level difference 0m
- Air flow rate High

4D054070A

RXS50FVMA, RXS60FVMA, RXS71FVMA

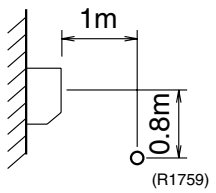
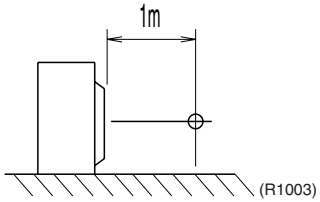


Notes:
The graphs are based on the following conditions.
- Equivalent piping length 7.5m
- Level difference 0m
- Air flow rate High

3D054069A

10. Sound Level

10.1 Measuring Location

Indoor Unit	Outdoor Unit
Wall Mounted Type 	

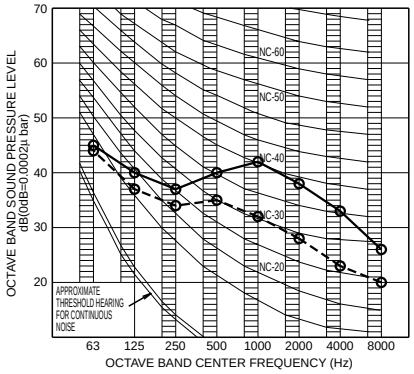
Note: 1. Operation sound is measured in an anechoic chamber.
2. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	Indoor ; 21°CDB Outdoor ; 7°CDB/6°CWB	5m

10.2 Octave Band Level

10.2.1 Indoor Units : Cooling Only

FTKS50FVM



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	43	34

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

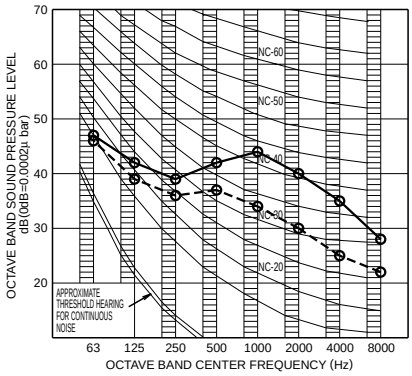
50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Cooling

4D056195

FTKS60FVM



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	45	36

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

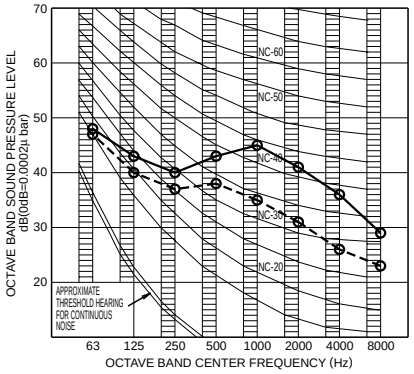
50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Cooling

4D040304E

FTKS71FVM



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	46	37

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

50/60Hz 220-240/220-230V(H)

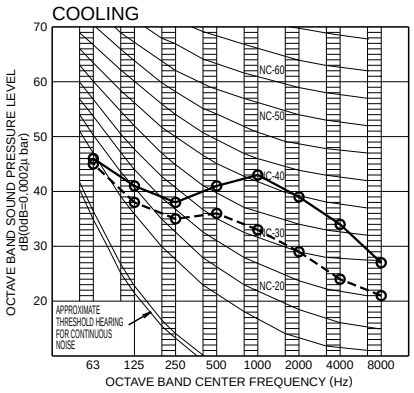
50/60Hz 220-240/220-230V(L)

Cooling

4D040305G

10.2.2 Indoor Units : Heat Pump

FTXS50FVMA



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	44	35

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

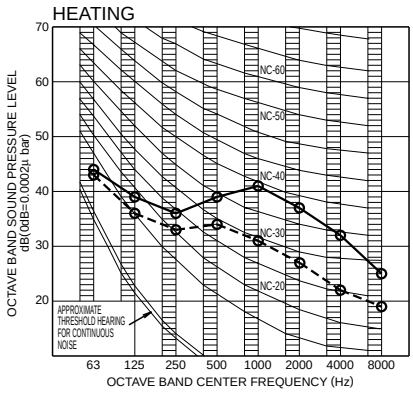
POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Cooling



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	42	33

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

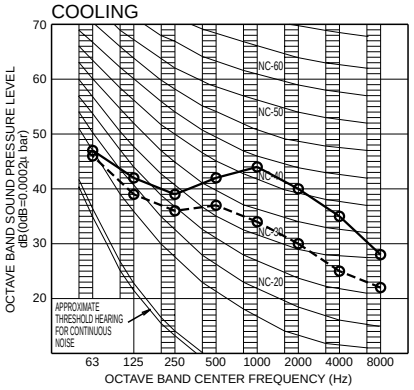
50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Heating

3D054979A

FTXS60FVMA



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	45	36

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

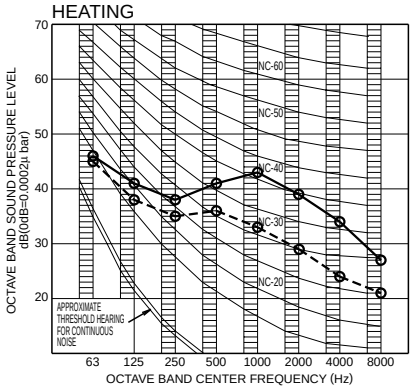
POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Cooling



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	44	35

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

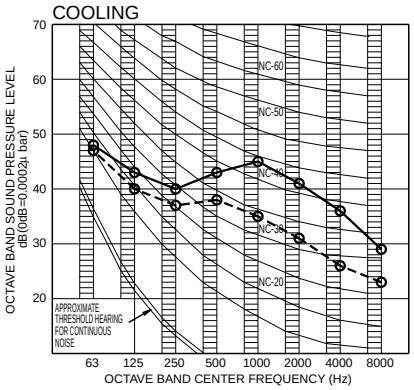
50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Heating

3D040300E

FTXS71FVMA



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	46	37

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

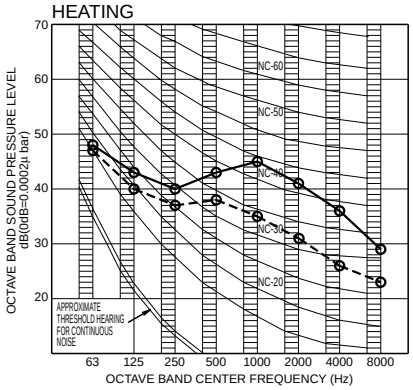
POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

50/60Hz 220-240/220-230V(H)

50/60Hz 220-240/220-230V(L)

Cooling



OVER ALL (dB)

SCALE	50/60Hz 220-240/220-230V (H)	50/60Hz 220-240/220-230V (L)
A	46	37

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS

POWER SOURCE 220-240/220-230V 50/60Hz

JIS STANDARD

50/60Hz 220-240/220-230V(H)

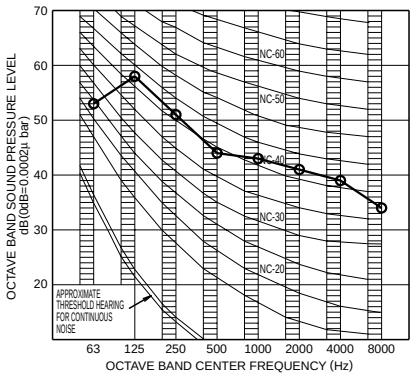
50/60Hz 220-240/220-230V(L)

Heating

3D040301D

10.2.3 Outdoor Units : Cooling Only

RKS50FVM



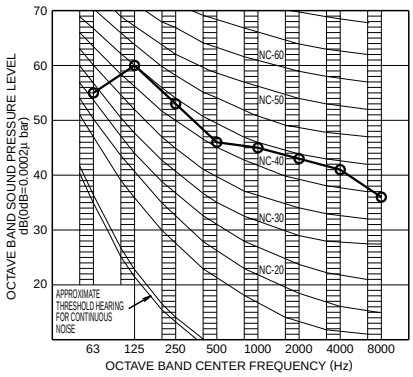
OVER ALL (dB)	
SCALE	50Hz 230V
A	47

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS	
POWER SOURCE	230V 50Hz
JIS STANDARD	
○—○	50Hz 230V
Cooling	

4D056049

RKS60FVM



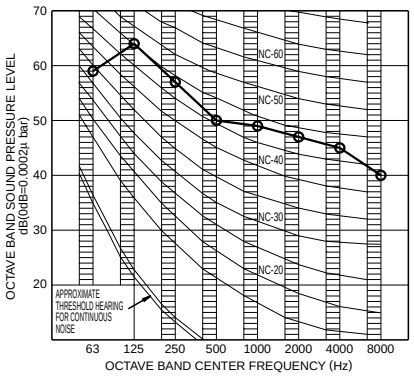
OVER ALL (dB)	
SCALE	50Hz 230V
A	49

(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS	
POWER SOURCE	230V 50Hz
JIS STANDARD	
○—○	50Hz 230V
Cooling	

4D056050

RKS71FVM



OVER ALL (dB)	
SCALE	50Hz 230V
A	53

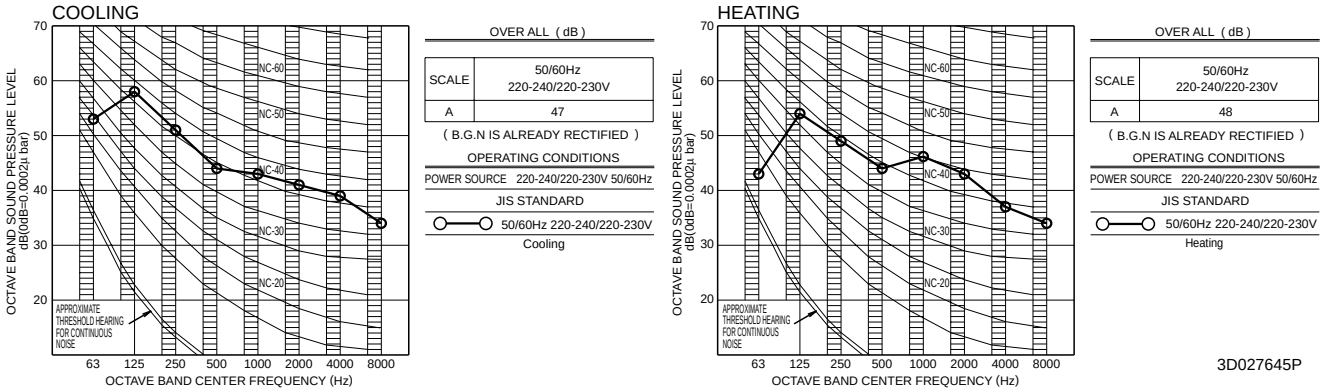
(B.G.N IS ALREADY RECTIFIED)

OPERATING CONDITIONS	
POWER SOURCE	230V 50Hz
JIS STANDARD	
○—○	50Hz 230V
Cooling	

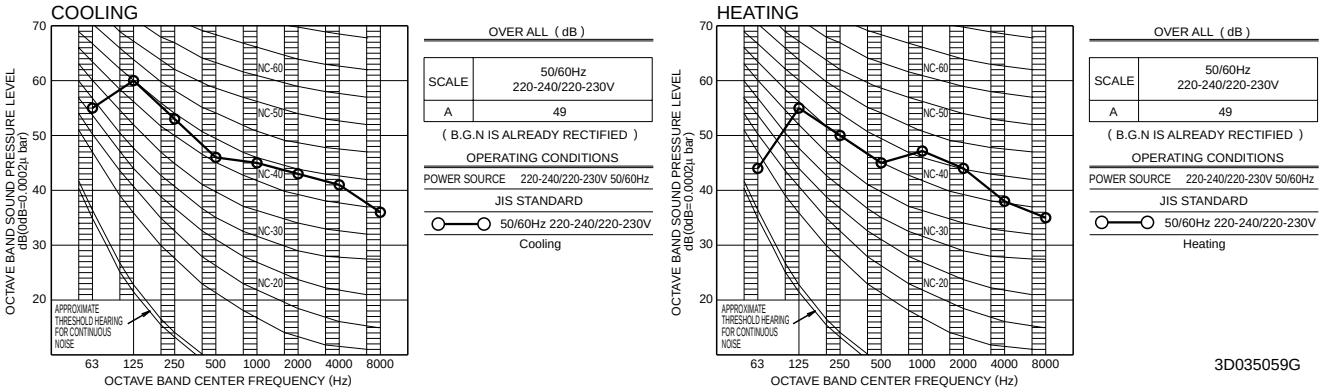
4D056051

10.2.4 Outdoor Units : Heat Pump

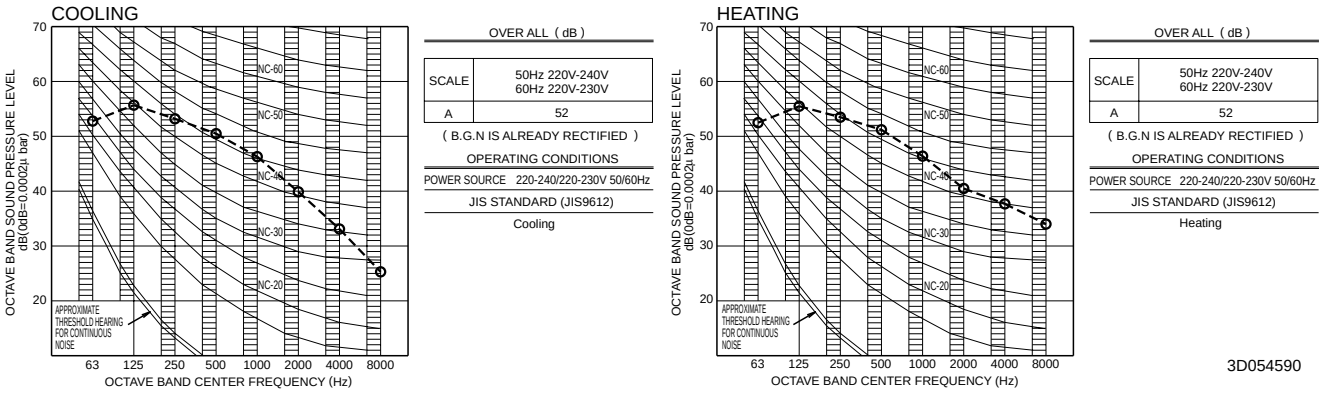
RXS50FVMA



RXS60FVMA



RXS71FVMA



11. Electric Characteristics

REPRESENTATIVE UNIT COMBINATION		POWER SUPPLY				COMP		OFM		IFM	
INDOOR UNIT	OUTDOOR UNIT	Hz-Volts	VOLTAGE RANGE	MCA	MFA	RHz	RLA	W	FLA	W	FLA
FTKS50FVM	RKS50FVM	50 - 220	MAX. 50Hz 264V MIN. 50Hz 198V	19.75	20.0	67	6.7	53	0.19	43	0.12
		50 - 230					6.4				
		50 - 240					6.1				
		60 - 220	MAX. 60Hz 253V MIN. 60Hz 198V				6.7				
		60 - 230					6.4				
FTKS60FVM	RKS60FVM	50 - 220	MAX. 50Hz 264V MIN. 50Hz 198V	19.75	20.0	84	8.7	53	0.20	43	0.14
		50 - 230					8.3				
		50 - 240					7.9				
		60 - 220	MAX. 60Hz 253V MIN. 60Hz 198V				8.7				
		60 - 230					8.3				
FTKS71FVM	RKS71FVM	50 - 220	MAX. 50Hz 264V MIN. 50Hz 198V	19.75	20.0	60	11.0	53	0.28	43	0.16
		50 - 230					10.5				
		50 - 240					10.1				
		60 - 220	MAX. 60Hz 253V MIN. 60Hz 198V				11.0				
		60 - 230					10.5				
FTXS50FVMA	RXS50FVMA	50 - 220	MAX. 50Hz 264V MIN. 50Hz 198V	19.75	20.0	67	6.7	53	0.32	43	0.17
		50 - 230					6.4				
		50 - 240					6.1				
		60 - 220	MAX. 60Hz 253V MIN. 60Hz 198V				6.7				
		60 - 230					6.4				
FTXS60FVMA	RXS60FVMA	50 - 220	MAX. 50Hz 264V MIN. 50Hz 198V	19.75	20.0	84	8.7	53	0.39	43	0.18
		50 - 230					8.3				
		50 - 240					7.9				
		60 - 220	MAX. 60Hz 253V MIN. 60Hz 198V				8.7				
		60 - 230					8.3				
FTXS71FVMA	RXS71FVMA	50 - 220	MAX. 50Hz 264V MIN. 50Hz 198V	19.75	20.0	56	10.3	66	0.40	43	0.19
		50 - 230					9.9				
		50 - 240					9.4				
		60 - 220	MAX. 60Hz 253V MIN. 60Hz 198V				10.3				
		60 - 230					9.9				

SYMBOLS:

MCA : MIN. CIRCUIT AMPS (A)
MFA : MAX. FUSE AMPS (A)
RLA : RATED LOAD AMPS (A)
OFM : OUTDOOR FAN MOTOR
IFM : INDOOR FAN MOTOR
FLA : FULL LOAD AMPS (A)
W : FAN MOTOR RATED OUTPUT (W)
RHz : RATED OPERATING FREQUENCY (Hz)

NOTE:

1. RLA is based on the following conditions.
   Indoor temp. 27°CDB/19°CWB
   Outdoor temp. 35°CDB.
2. Maximum allowable voltage variation between phases is 2%.
3. Select wire size based on the larger value of MCA.
4. Instead of fuse, use circuit breaker.
5. Be sure to install an earth leak detector. (One that can handle higher harmonics.)
   (This unit uses an inverter, which means that it must be used an earth leak detector capable handling high harmonics in order to prevent malfunctioning of the earth leak detector itself.

3D056403
3D054941
3D054943

12. Installation Manual

12.1 Indoor Units

12.1.1 Safety Precautions

SAFETY PRECAUTIONS

- Read these Safety Precautions carefully to ensure correct installation.
- This manual classifies the precautions into WARNING and CAUTION.
  Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ **WARNING.....Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.**

⚠ **CAUTION.....Failure to follow any of CAUTION may in some cases result in grave consequences.**

- The following safety symbols are used throughout this manual:

❗ Be sure to observe this instruction.	⏚ Be sure to establish an earth connection.	⃠ Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNING
• Installation should be left to the dealer or another professional. Improper installation may cause water leakage, electrical shock, or fire.
• Install the air conditioner according to the instructions given in this manual. Incomplete installation may cause water leakage, electrical shock, or fire.
• Be sure to use the supplied or specified installation parts. Use of other parts may cause the unit to come to lose, water leakage, electrical shock, or fire.
• Install the air conditioner on a solid base that can support the weight of the unit. An inadequate base or incomplete installation may cause injury in the event the unit falls off the base.
• Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice. Insufficient capacity or incomplete electrical work may cause electrical shock or fire.
• Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.
• For wiring, use a cable length enough to cover the entire distance with no connection. Do not use an extension cord. Do not put other loads on the power supply, use a dedicated power circuit. (Failure to do so may cause abnormal heat, electric shock or fire.)
• Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating or fire.
• After connecting interconnecting and supply wiring be sure to shape the cables so that they do not put undue force on the electrical covers or panels. Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock, or fire.
• When installing or relocating the system, be sure to keep the refrigerant circuit free from substances other than the specified refrigerant (R410A), such as air. (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise or rupture, resulting in injury.)
• If any refrigerant has leaked out during the installation work, ventilate the room. ❗ (The refrigerant produces a toxic gas if exposed to flames.)
• After all installation is complete, check to make sure that no refrigerant is leaking out. ❗ (The refrigerant produces a toxic gas if exposed to flames.)
• During pump-down, stop the compressor before removing the refrigerant piping. If the compressor is still running and the shut-off valve is open during pump-down, air will be sucked in when the refrigerant piping is removed, causing abnormal pressure in the freezer cycle which will lead to breakage and even injury.
• During installation, attach the refrigerant piping securely before running the compressor. If the compressor is not attached and the shut-off valve is open during pump-down, air will be sucked in when the compressor is run, causing abnormal pressure in the freezer cycle which will lead to breakage and even injury.
• When carrying out piping connection, take care not to let air substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury.
• Be sure to establish an earth. Do not earth the unit to a utility pipe, arrester, or telephone earth. ⏚ Incomplete earth may cause electrical shock, or fire. A high surge current from lightning or other sources may cause damage to the air conditioner.
• Be sure to install an earth leakage breaker. Failure to install an earth leakage breaker may result in electric shocks, or fire.

⚠ CAUTION
• Do not install the air conditioner in a place where there is danger of exposure to inflammable gas leakage. ⃠ If the gas leaks and builds up around the unit, it may catch fire.
• Establish drain piping according to the instructions of this manual. Inadequate piping may cause flooding.
• Tighten the flare nut according to the specified method such as with a torque wrench. If the flare nut is tightened too hard, the flare nut may crack after a long time and cause refrigerant leakage.

12.1.2 FTKS 50/60/71 F

Accessories

Ⓐ Mounting plate	1	Ⓓ Wireless remote controller	1	Ⓗ Indoor unit fixing screws M4 × 12L	2
Ⓑ Mounting plate fixing screws M4 × 25L	9	Ⓔ Remote controller holder	1	Ⓙ Insulation tape	1
Ⓒ Titanium Apatite Photocatalytic Air-Purifying Filter	2	Ⓕ Fixing screws for remote controller holder M3 × 20L	2	Ⓚ Operation manual	1
		Ⓖ AAA dry-cell batteries	2	Ⓛ Installation manual	1

Choosing an Installation Site

• Before choosing the installation site, obtain user approval.

1. Indoor unit.

• The indoor unit should be sited in a place where:
1) the restrictions on installation specified in the indoor unit installation drawings are met,
2) both air intake and exhaust have clear paths met,
3) the unit is not in the path of direct sunlight,
4) the unit is away from the source of heat or steam,
5) there is no source of machine oil vapour (this may shorten indoor unit life),
6) cool air is circulated throughout the room,
7) the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote controller range,
8) the unit is at least 1 metre away from any television or radio set (unit may cause interference with the picture or sound),
9) install at the recommended height (1.8m).

2. Wireless remote controller.

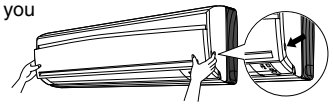
1) Turn on all the fluorescent lamps in the room, if any, and find the site where remote controller signals are properly received by the indoor unit (within 7 metres).

Installation Tips

1. Removing and installing front panel.

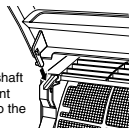
• **Removal method**

Hook fingers on the panel protrusions on the left and right of the main body, and open until the panel stops. Slide the front panel sideways to disengage the rotating shaft. Then pull the front panel toward you to remove it.



• **Installation method**

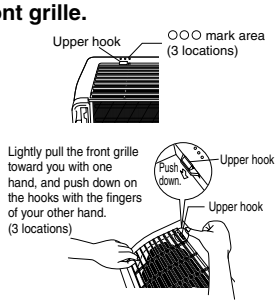
Align the tabs of the front panel with the grooves, and push all the way in. Then close slowly. Push the center of the lower surface of the panel firmly to engage the tabs.



2. Removing and installing front grille.

• **Removal method**

1) Remove front panel to remove the air filter.
2) Remove the front grille.
3) In front of the ○○○ mark of the front grille, there are 3 upper hooks. Lightly pull the front grille toward you with one hand, and push down on the hooks with the fingers of your other hand.

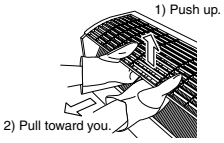


<When there is no work space because the unit is close to ceiling>

⚠ CAUTION

Be sure to wear protection gloves.

Place both hands under the center of the front grille, and while pushing up, pull it toward you.



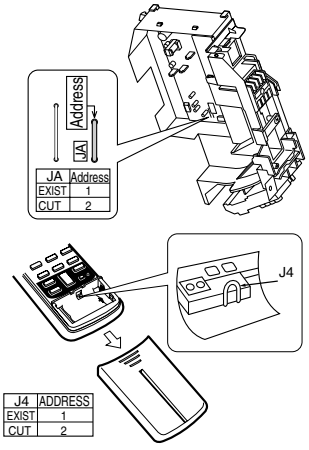
• **Installation method**

1) Install the front grille and firmly engage the upper hooks (3 locations).
2) Install 3 screws of the front grille.
3) Install the air filter and then mount the front panel.

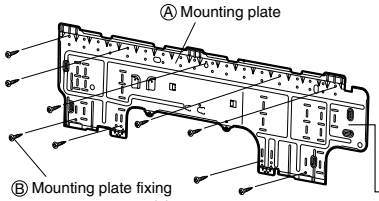
3. How to set the different addresses.

When two indoor units are installed in one room, the two wireless remote controllers can be set for different addresses.

1) In the same way as when connecting to an HA system, remove the metal plate electrical wiring cover.
2) Cut the address jumper (JA) on the prindted circuit board.
3) Cut the address jumper (J4) in the remote controller.



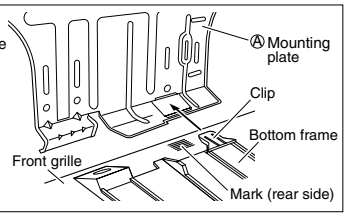
Indoor Unit Installation Drawings

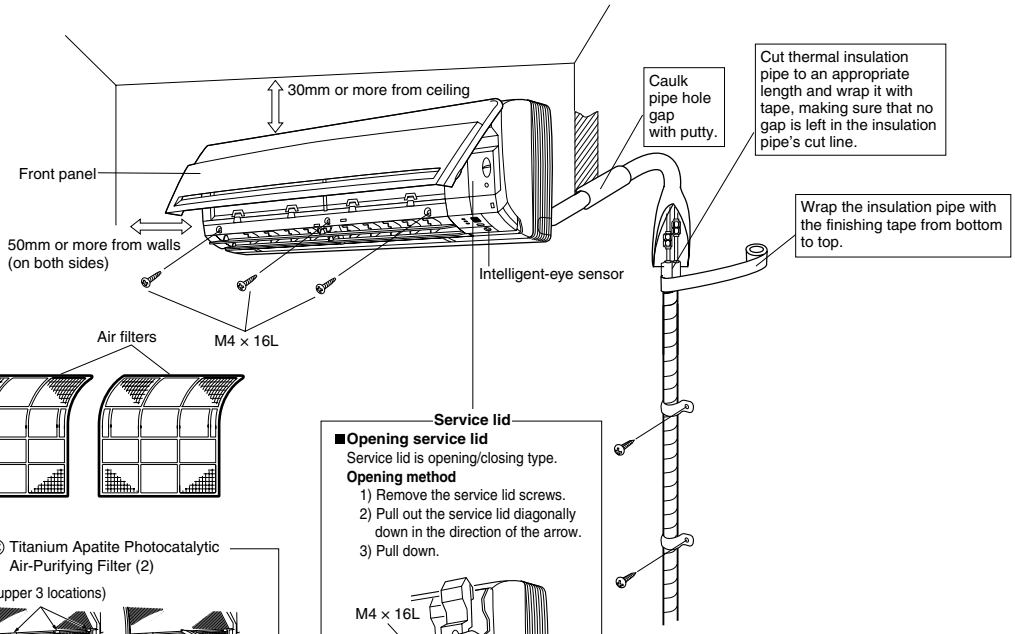


The mounting plate should be installed on a wall which can support the weight of the indoor unit.

■ **How to attach the indoor unit.**
Hook the claws of the bottom frame to the mounting plate.
If the claws are difficult to hook, remove the front grille.

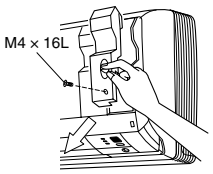
■ **How to remove the indoor unit.**
Push up the marked area (at the lower part of the front grille) to release the claws. If it is difficult to release, remove the front grille.



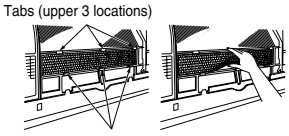


Service lid

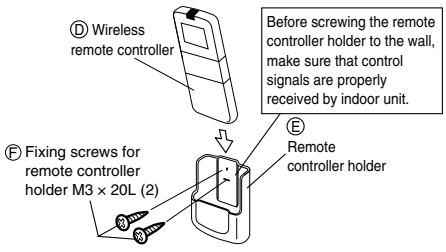
■ **Opening service lid**
Service lid is opening/closing type.
Opening method
1) Remove the service lid screws.
2) Pull out the service lid diagonally down in the direction of the arrow.
3) Pull down.



Ⓒ Titanium Apatite Photocatalytic Air-Purifying Filter (2)



Insert the upper side of the Ⓒ Titanium Apatite Photocatalytic Air-purifying filter into the tabs (upper 3 locations),push the lower side of the filters up a little and into the tabs (lower 3 locations).



Intelligent-eye Sensor

⚠ CAUTION

1) Do not hit or violently push the intelligent-eye sensor. This can lead to damage and malfunction.
2) Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

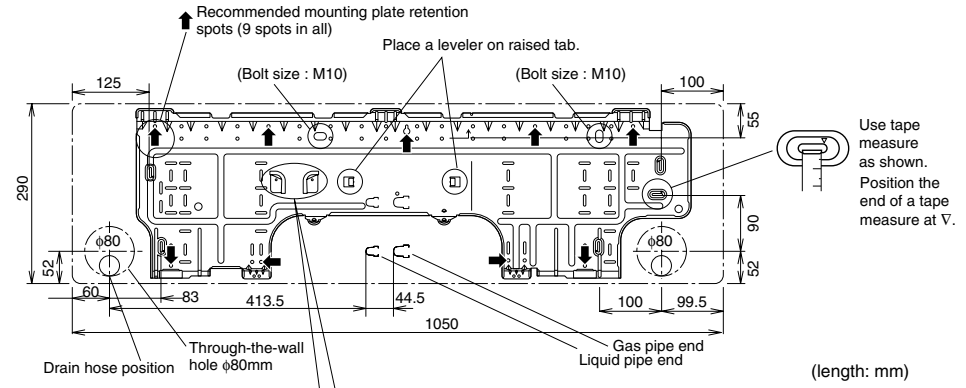
Indoor Unit Installation (1)

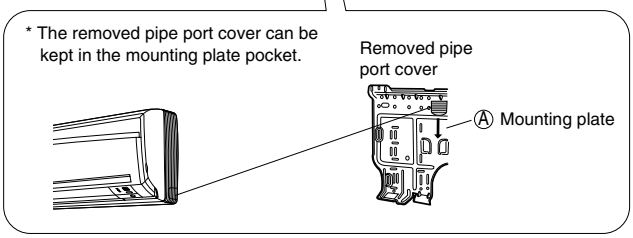
1. Installing the mounting plate.

- The mounting plate should be installed on a wall which can support the weight of the indoor unit.

1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
2) Secure the mounting plate to the wall with screws.

Recommended mounting plate retention spots and dimensions

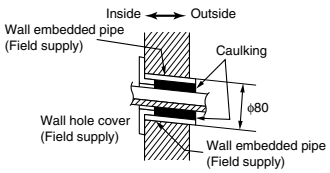




2. Boring a wall hole and installing wall embedded pipe.

- For walls containing metal frame or metal board, be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

1) Bore a feed-through hole of 80mm in the wall so it has a down slope toward the outside.
2) Insert a wall pipe into the hole.
3) Insert a wall cover into wall pipe.
4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.

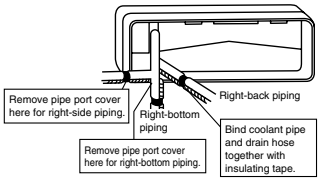


Indoor Unit Installation (2)

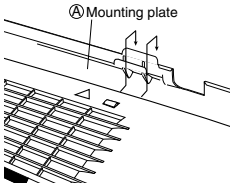
3. Installing indoor unit.

3-1. Right-side, right-back, or right-bottom piping.

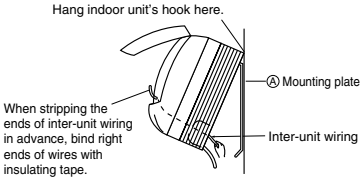
1) Attach the drain hose to the underside of the refrigerant pipes with an adhesive vinyl tape.
2) Wrap the refrigerant pipes and drain hose together with an insulation tape.



3) Pass the drain hose and refrigerant pipes through the wall hole, then set the indoor unit on the mounting plate hooks by using the △ markings at the top of the indoor unit as a guide.

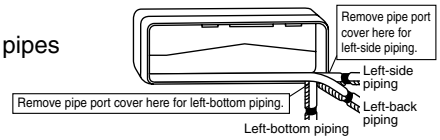


4) Open the front panel, then open the service lid. (Refer to Installation Tips.)
5) Pass the inter-unit wiring from the outdoor unit through the feed-through wall hole and then through the back of the indoor unit. Pull them through the front side.
Bend the ends of tie wires upward for easier work in advance. (If the inter-unit wiring ends are to be stripped first, bundle wire ends with adhesive tape.)
6) Press the bottom frame of the indoor unit with both hands to set it on the mounting plate hooks. Make sure that the wires do not catch on the edge of the indoor unit.

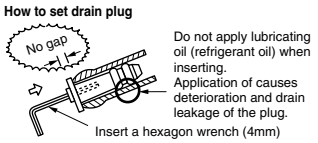


3-2. Left-side, left-back, or left-bottom piping.

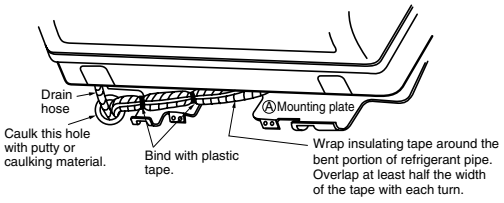
1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.

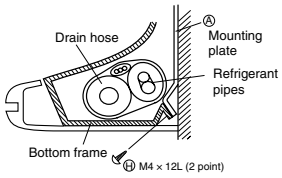


2) Be sure to connect the drain hose to the drain port in place of a drain plug.



3) Shape the refrigerant pipe along the pipe path marking on the mounting plate.
4) Pass drain hose and refrigerant pipes through the wall hole, then set the indoor unit on mounting plate hooks, using the △ markings at the top of indoor unit as a guide.
5) Pull in the inter-unit wiring.
6) Connect the inter-unit piping.
7) Wrap the refrigerant pipes and drain hose together with insulation tape as right figure, in case of setting the drain hose through the back of the indoor unit.
8) While exercising care so that the inter-unit wiring do not catch indoor unit, press the bottom edge of indoor unit with both hands until it is firmly caught by the mounting plate hooks. Secure indoor unit to the mounting plate with the screws (M4 × 12L).



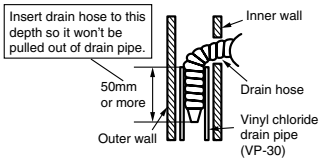


3-3. Wall embedded piping.

Follow the instructions given under

Left-side, left-back, or left-bottom piping .

1) Insert the drain hose to this depth so it won't be pulled out of the drain pipe.

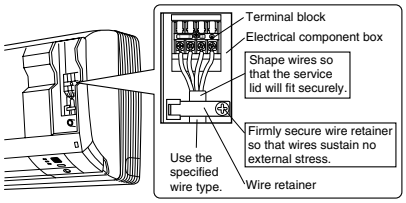


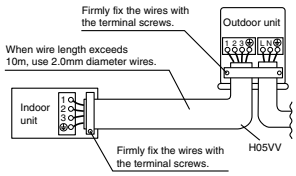
Indoor Unit Installation (3)

4. Wiring.

With a Multi indoor unit , install as described in the installation manual supplied with the Multi outdoor unit.

1) Strip wire ends (15mm).
2) Match wire colours with terminal numbers on indoor and outdoor unit's terminal blocks and firmly screw wires to the corresponding terminals.
3) Connect the earth wires to the corresponding terminals.
4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
5) In case of connecting to an adapter system. Run the remote controller cable and attach the S21. (Refer to 5. When connecting to an HA system.)
6) Shape the wires so that the service lid fits securely, then close service lid.



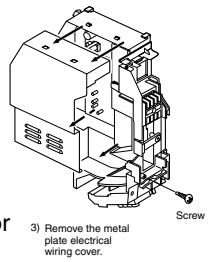


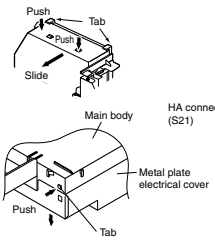
⚠ WARNING

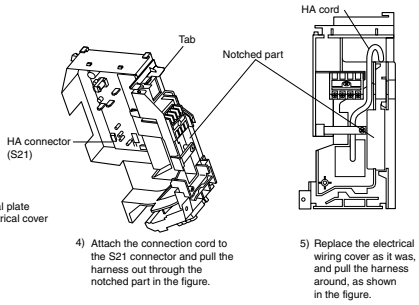
1) Do not use tapped wires, stranded wires, extensioncords, or starburst connections, as they may cause overtheating, electrical shock,or fire.
2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc., from the terminal block.) Doing so may cause electric shock or fire.

5. When connecting to an HA system.

1) Remove the front grille. (3 screws)
2) Remove the electrical wiring box. (1 screw)
3) Remove the metal plate electrical wiring cover. (4 tabs)
4) Attach the connection cord to the S21 connector and pull the harness out through the notched part in the figure.
5) Replace the electrical wiring cover as it was, and pull the harness around, as shown in the figure.

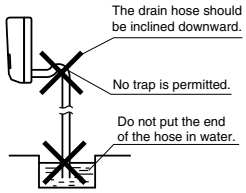




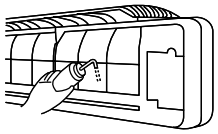


6. Drain piping.

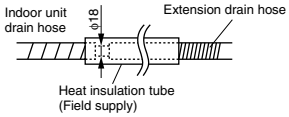
1) Connect the drain hose, as described below.



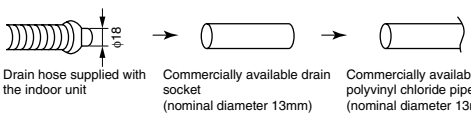
2) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



3) When drain hose requires extension, obtain an extension hose commercially available. Be sure to thermally insulate the indoor section of the extension hose.



4) When connecting a rigid polyvinyl chloride pipe (nominal diameter 13mm) directly to the drain hose attached to the indoor unit as with embedded piping work, use any commercially available drain socket (nominal diameter 13mm) as a joint.

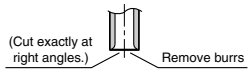


Refrigerant Piping Work

With a Multi indoor unit , install as described in the installation manual supplied with the Multi outdoor unit.

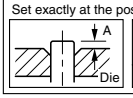
1. Flaring the pipe end.

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.



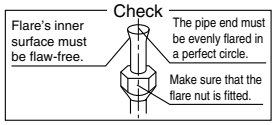
Flaring

Set exactly at the position shown below.



	Flare tool for R410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0-0.5mm	1.0-1.5mm	1.5-2.0mm

Check



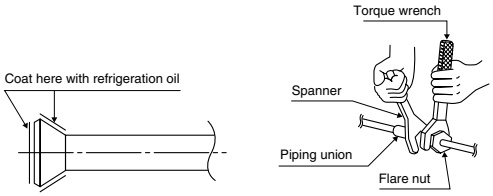
⚠ WARNING

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
4) Do never install a drier to this R410A unit in order to guarantee it's lifetime.
5) The drying material may dissolve and damage the system.
6) Incomplete flaring may cause refrigerant gas leakage.

2. Refrigerant piping.

1) Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.

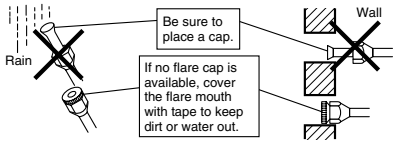
Flare nut tightening torque		
Gas side		Liquid side
1/2 inch	5/8 inch	1/4 inch
49.5-60.3N • m (505-615kgf • cm)	61.8-75.4N • m (630-770kgf • cm)	14.2-17.2N • m (144-175kgf • cm)



2) To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A.)

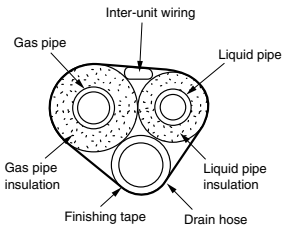
2-1. Caution on piping handling.

1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 30 to 40mm or larger.)



2-2. Selection of copper and heat insulation materials.

• When using commercial copper pipes and fittings, observe the following:
1) Insulation material: Polyethylene foam
   Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/(mh •ºC))
   Refrigerant gas pipe's surface temperature reaches 110ºC max.
   Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.



Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
50/60 class	71 class	50/60/71 classs	50/60 class	71 class	50/60/71 class
O.D. 12.7mm	O.D. 15.9mm	O.D. 6.4mm	I.D. 14-16mm	I.D. 16-20mm	I.D. 8-10mm
Thickness 0.8mm	Thickness 1.0mm	Thickness 0.8mm	Thickness 10mm Min.		

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Trial Operation and Testing

1. Trial operation and testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.

1-2 Trial operation should be carried out in either cooling mode.

- Select the lowest programmable temperature.
  1) Trial operation in cooling mode may be disabled depending on the room temperature. Use the remote controller for trial operation as described below.
  2) After trial operation is complete, set the temperature to a normal level (26°C to 28°C).
  3) For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as louver movement, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller.

1) Press ON/OFF button to turn on the system.
2) Simultaneously press centre of TEMP button and MODE button.
3) Press MODE button twice.
   ("ｱﾄｲﾁ" will appear on the display to indicate that Trial Operation mode is selected.)
4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.

2. Test items.

Test items	Symptom (diagnostic display on RC)	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Draining line is properly installed.	Water leakage	
System is properly earthed.	Electrical leakage	
The specified wires are used for inter-unit wiring connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Stop valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote controller commands.	Inoperative	

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12.1.3 FTXS 50/60/71 F

Accessories

Ⓐ Mounting plate	1	Ⓓ Wireless remote controller	1	Ⓗ Indoor unit fixing screws M4 × 12L	2
Ⓑ Mounting plate fixing screws M4 × 25L	9	Ⓔ Remote controller holder	1	Ⓙ Insulation tape	1
Ⓒ Titanium Apatite Photocatalytic Air-Purifying Filter	2	Ⓕ Fixing screws for remote controller holder M3 × 20L	2	Ⓚ Operation manual	1
		Ⓖ AAA dry-cell batteries	2	Ⓛ Installation manual	1

Choosing an Installation Site

• Before choosing the installation site, obtain user approval.

1. Indoor unit.

• The indoor unit should be sited in a place where:

1) the restrictions on installation specified in the indoor unit installation drawings are met,
2) both air intake and exhaust have clear paths met,
3) the unit is not in the path of direct sunlight,
4) the unit is away from the source of heat or steam,
5) there is no source of machine oil vapour (this may shorten indoor unit life),
6) cool (warm) air is circulated throughout the room,
7) the unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote controller range,
8) the unit is at least 1 metre away from any television or radio set (unit may cause interference with the picture or sound),
9) install at the recommended height (1.8m).

2. Wireless remote controller.

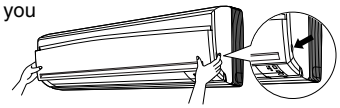
1) Turn on all the fluorescent lamps in the room, if any, and find the site where remote controller signals are properly received by the indoor unit (within 7 metres).

Installation Tips

1. Removing and installing front panel.

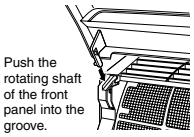
• **Removal method**

Hook fingers on the panel protrusions on the left and right of the main body, and open until the panel stops. Slide the front panel sideways to disengage the rotating shaft. Then pull the front panel toward you to remove it.



• **Installation method**

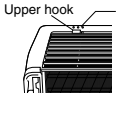
Align the tabs of the front panel with the grooves, and push all the way in. Then close slowly. Push the center of the lower surface of the panel firmly to engage the tabs.

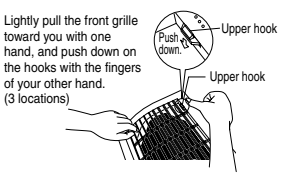


2. Removing and installing front grille.

• **Removal method**

1) Remove front panel to remove the air filter.
2) Remove the front grille.
3) In front of the ○○○ mark of the front grille, there are 3 upper hooks. Lightly pull the front grille toward you with one hand, and push down on the hooks with the fingers of your other hand.



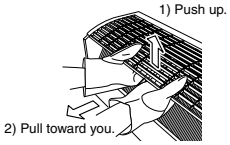


<When there is no work space because the unit is close to ceiling>

⚠ CAUTION

Be sure to wear protection gloves.

Place both hands under the center of the front grille, and while pushing up, pull it toward you.



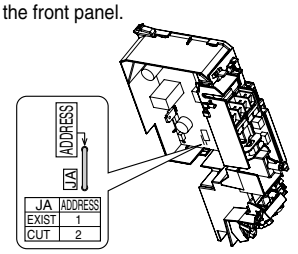
• **Installation method**

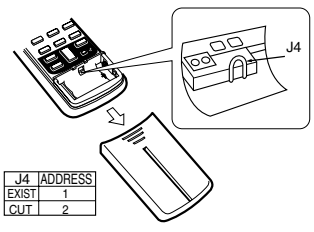
1) Install the front grille and firmly engage the upper hooks (3 locations).
2) Install 3 screws of the front grille.
3) Install the air filter and then mount the front panel.

3. How to set the different addresses.

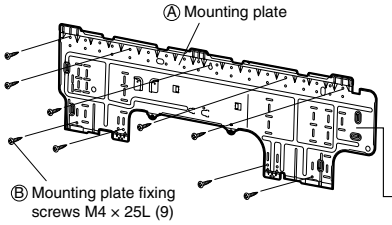
When two indoor units are installed in one room, the two wireless remote controllers can be set for different addresses.

1) In the same way as when connecting to an HA system, remove the metal plate electrical wiring cover.
2) Cut the address jumper (JA) on the prindted circuit board.
3) Cut the address jumper (J4) in the remote controller.





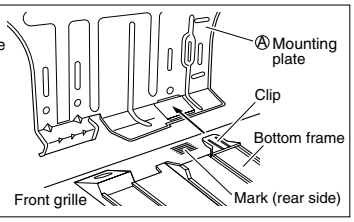
Indoor Unit Installation Drawings

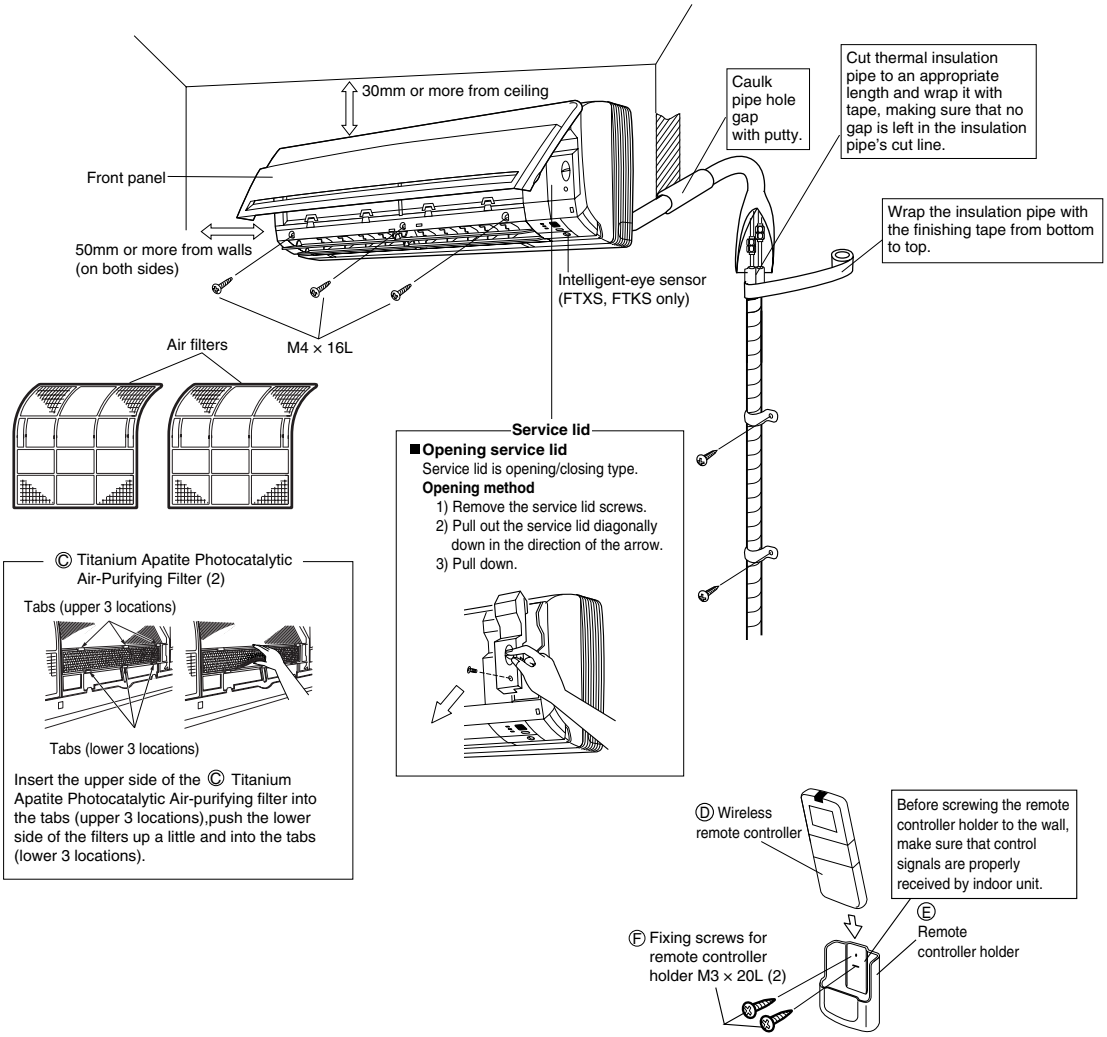


The mounting plate should be installed on a wall which can support the weight of the indoor unit.

■ **How to attach the indoor unit.**
Hook the claws of the bottom frame to the mounting plate.
If the claws are difficult to hook, remove the front grille.

■ **How to remove the indoor unit.**
Push up the marked area (at the lower part of the front grille) to release the claws. If it is difficult to release, remove the front grille.





Service lid

■ **Opening service lid**
Service lid is opening/closing type.
Opening method
1) Remove the service lid screws.
2) Pull out the service lid diagonally down in the direction of the arrow.
3) Pull down.

Ⓒ Titanium Apatite Photocatalytic Air-Purifying Filter (2)

Insert the upper side of the Ⓒ Titanium Apatite Photocatalytic Air-purifying filter into the tabs (upper 3 locations),push the lower side of the filters up a little and into the tabs (lower 3 locations).

Intelligent-eye Sensor (FTXS, FTKS only)

⚠ CAUTION

1) Do not hit or violently push the intelligent-eye sensor. This can lead to damage and malfunction.
2) Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

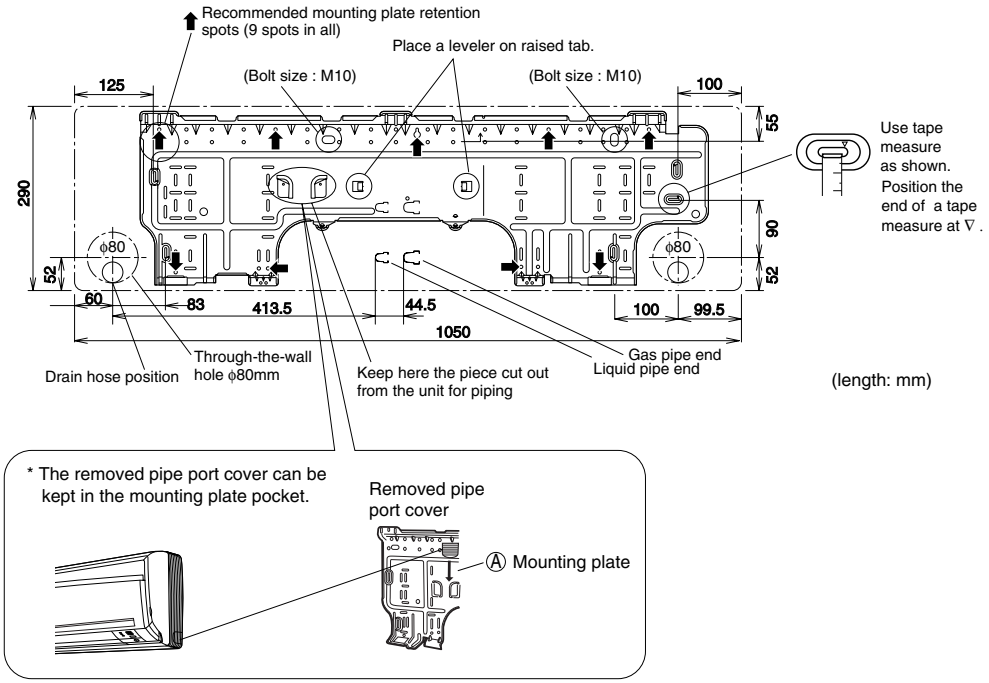
Indoor Unit Installation (1)

1. Installing the mounting plate.

- The mounting plate should be installed on a wall which can support the weight of the indoor unit.

1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
2) Secure the mounting plate to the wall with screws.

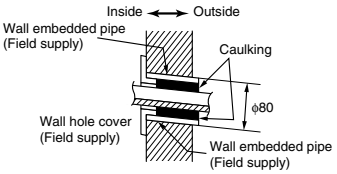
Recommended mounting plate retention spots and dimensions



2. Boring a wall hole and installing wall embedded pipe.

- For walls containing metal frame or metal board, be sure to use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

1) Bore a feed-through hole of 80mm in the wall so it has a down slope toward the outside.
2) Insert a wall pipe into the hole.
3) Insert a wall cover into wall pipe.
4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.

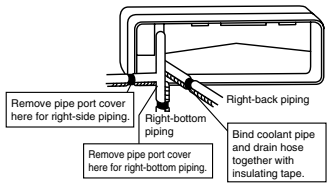


Indoor Unit Installation (2)

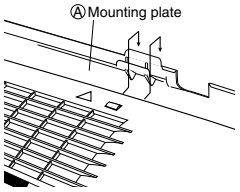
3. Installing indoor unit.

3-1. Right-side, right-back, or right-bottom piping.

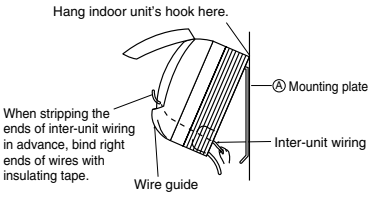
1) Attach the drain hose to the underside of the refrigerant pipes with an adhesive vinyl tape.
2) Wrap the refrigerant pipes and drain hose together with an insulation tape.



3) Pass the drain hose and refrigerant pipes through the wall hole, then set the indoor unit on the mounting plate hooks by using the △ markings at the top of the indoor unit as a guide.

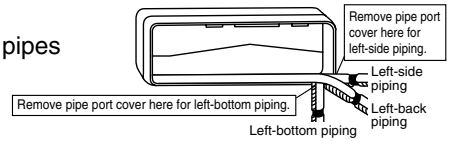


4) Open the front panel, then open the service lid. (Refer to Installation Tips.)
5) Pass the inter-unit wiring from the outdoor unit through the feed-through wall hole and then through the back of the indoor unit. Pull them through the front side.
Bend the ends of tie wires upward for easier work in advance. (If the inter-unit wiring ends are to be stripped first, bundle wire ends with adhesive tape.)
6) Press the bottom frame of the indoor unit with both hands to set it on the mounting plate hooks. Make sure that the wires do not catch on the edge of the indoor unit.

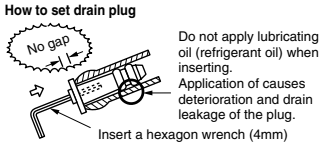


3-2. Left-side, left-back, or left-bottom piping.

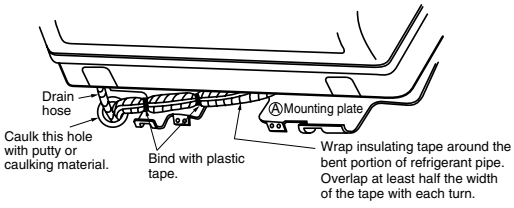
1) Attach the drain hose to the underside of the refrigerant pipes with adhesive vinyl tape.



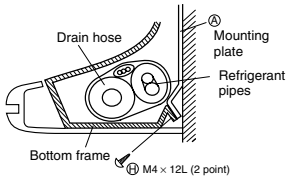
2) Be sure to connect the drain hose to the drain port in place of a drain plug.



3) Shape the refrigerant pipe along the pipe path marking on the mounting plate.
4) Pass drain hose and refrigerant pipes through the wall hole, then set the indoor unit on mounting plate hooks, using the △ markings at the top of indoor unit as a guide.
5) Pull in the inter-unit wiring.
6) Connect the inter-unit piping.



7) Wrap the refrigerant pipes and drain hose together with insulation tape as right figure, in case of setting the drain hose through the back of the indoor unit.
8) While exercising care so that the inter-unit wiring do not catch indoor unit, press the bottom edge of indoor unit with both hands until it is firmly caught by the mounting plate hooks. Secure indoor unit to the mounting plate with the screws (M4 × 12L).

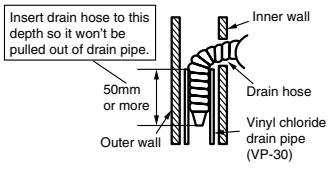


3-3. Wall embedded piping.

Follow the instructions given under

Left-side, left-back, or left-bottom piping .

1) Insert the drain hose to this depth so it won't be pulled out of the drain pipe.

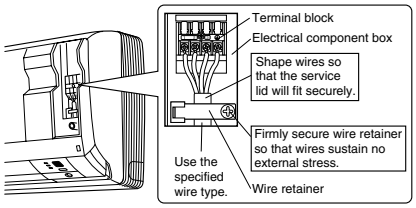


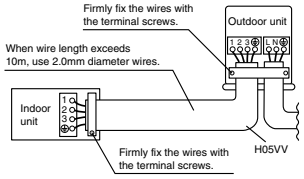
Indoor Unit Installation (3)

4. Wiring.

With a Multi indoor unit , install as described in the installation manual supplied with the Multi outdoor unit.

1) Strip wire ends (15mm).
2) Match wire colours with terminal numbers on indoor and outdoor unit's terminal blocks and firmly screw wires to the corresponding terminals.
3) Connect the earth wires to the corresponding terminals.
4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
5) In case of connecting to an adapter system. Run the remote controller cable and attach the S21. (Refer to 5. When connecting to an HA system.)
6) Shape the wires so that the service lid fits securely, then close service lid.



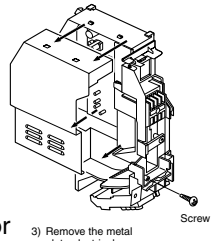


⚠ WARNING

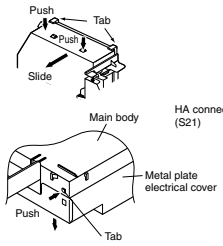
1) Do not use tapped wires, stranded wires, extensioncords, or starburst connections, as they may cause overtheating, electrical shock,or fire.
2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc., from the terminal block.) Doing so may cause electric shock or fire.

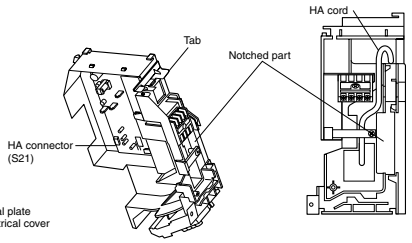
5. When connecting to an HA system.

1) Remove the front grille. (3 screws)
2) Remove the electrical wiring box. (1 screw)
3) Remove the metal plate electrical wiring cover. (4 tabs)
4) Attach the connection cord to the S21 connector and pull the harness out through the notched part in the figure.
5) Replace the electrical wiring cover as it was, and pull the harness around, as shown in the figure.



3) Remove the metal plate electrical wiring cover.



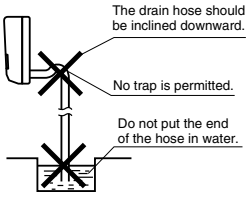


4) Attach the connection cord to the S21 connector and pull the harness out through the notched part in the figure.

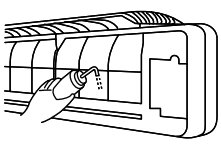
5) Replace the electrical wiring cover as it was, and pull the harness around, as shown in the figure.

6. Drain piping.

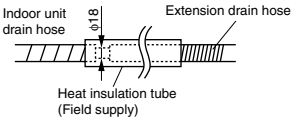
1) Connect the drain hose, as described below.



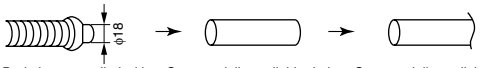
2) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



3) When drain hose requires extension, obtain an extension hose commercially available. Be sure to thermally insulate the indoor section of the extension hose.



4) When connecting a rigid polyvinyl chloride pipe (nominal diameter 13mm) directly to the drain hose attached to the indoor unit as with embedded piping work, use any commercially available drain socket (nominal diameter 13mm) as a joint.

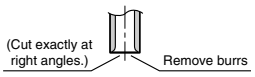


Refrigerant Piping Work

With a Multi indoor unit , install as described in the installation manual supplied with the Multi outdoor unit.

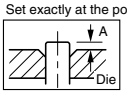
1. Flaring the pipe end.

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.



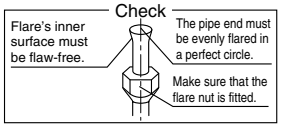
Flaring

Set exactly at the position shown below.



	Flare tool for R410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0-0.5mm	1.0-1.5mm	1.5-2.0mm

Check



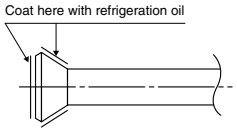
⚠ WARNING

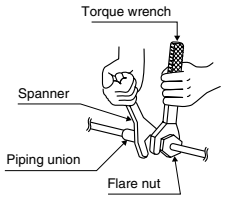
1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
4) Do never install a drier to this R410A unit in order to guarantee it's lifetime.
5) The drying material may dissolve and damage the system.
6) Incomplete flaring may cause refrigerant gas leakage.

2. Refrigerant piping.

1) Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.

Flare nut tightening torque		
Gas side		Liquid side
1/2 inch	5/8 inch	1/4 inch
49.5-60.3N • m (505-615kgf • cm)	61.8-75.4N • m (630-770kgf • cm)	14.2-17.2N • m (144-175kgf • cm)

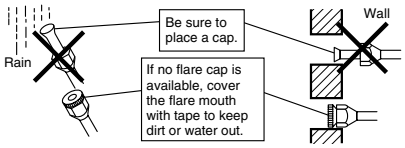




2) To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A.)

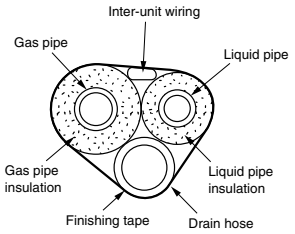
2-1. Caution on piping handling.

1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 30 to 40mm or larger.)



2-2. Selection of copper and heat insulation materials.

• When using commercial copper pipes and fittings, observe the following:
1) Insulation material: Polyethylene foam
Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/(mh •˚C))
Refrigerant gas pipe's surface temperature reaches 110˚C max.
Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.



Gas side		Liquid side	Gas pipe thermal insulation		Liquid pipe thermal insulation
50/60 class	71/80/90 class	50/60/71/80/90 classs	50/60 class	71/80/90 class	50/60/71/80/90 class
O.D. 12.7mm	O.D. 15.9mm	O.D. 6.4mm	I.D. 14-16mm	I.D. 16-20mm	I.D. 8-10mm
Thickness 0.8mm	Thickness 1.0mm	Thickness 0.8mm	Thickness 10mm Min.		

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Trial Operation and Testing

1. Trial operation and testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.
1-2 Trial operation should be carried out in either cooling or heating mode.

■ For Heat pump

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature. Use the remote controller for trial operation as described below.
  2) After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C in cooling mode, 20˚C to 24˚C in heating mode).
  3) For protection, the system disables restart operation for 3 minutes after it is turned off.

■ For Cooling only

- Select the lowest programmable temperature.
  1) Trial operation in cooling mode may be disabled depending on the room temperature. Use the remote controller for trial operation as described below.
  2) After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C).
  3) For protection, the system disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, such as louver movement, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from remote controller.

1) Press ON/OFF button to turn on the system.
2) Simultaneously press centre of TEMP button and MODE button.
3) Press MODE button twice.
   ("ﾃｽﾄ" will appear on the display to indicate that Trial Operation mode is selected.)
4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.

2. Test items.

Test items	Symptom (diagnostic display on RC)	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Draining line is properly installed.	Water leakage	
System is properly earthed.	Electrical leakage	
The specified wires are used for inter-unit wiring connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Stop valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote controller commands.	Inoperative	

3P182980-4

12.2 Outdoor Units

12.2.1 Safety Precautions

Safety Precautions

- Read these Safety Precautions carefully to ensure correct installation.
- This manual classifies the precautions into WARNING and CAUTION.
  Be sure to follow all the precautions below: they are all important for ensuring safety.

⚠ WARNING	Failure to follow any of WARNING is likely to result in such grave consequences as death or serious injury.
⚠ CAUTION	Failure to follow any of CAUTION may result in grave consequences in some cases.

- The following safety symbols are used throughout this manual:

❗	Be sure to observe this instruction.	⏚	Be sure to establish an earth connection.	⃠	Never attempt.

- After completing installation, test the unit to check for installation errors. Give the user adequate instructions concerning the use and cleaning of the unit according to the Operation Manual.

⚠ WARNING

- Installation should be left to the dealer or another professional. Improper installation may cause water leakage, electrical shock, or fire.
- Install the air conditioner according to the instructions given in this manual. Incomplete installation may cause water leakage, electrical shock, or fire.
- Be sure to use the supplied or specified installation parts. Use of other parts may cause the unit to come to lose, water leakage, electrical shock, or fire.
- Install the air conditioner on a solid base that can support the weight of the unit. An inadequate base or incomplete installation may cause injury in the event the unit falls off the base.
- Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice. Insufficient capacity or incomplete electrical work may cause electrical shock or fire.
- Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.
- For wiring, use a cable length enough to cover the entire distance with no connection. Do not use an extension cord. Do not put other loads on the power supply, use a dedicated power circuit. (Failure to do so may cause abnormal heat, electric shock or fire.)
- Use the specified types of wires for electrical connections between the indoor and outdoor units. When installing wiring for the outdoor unit, after cutting the wires for each connection point, a length of 3mm or longer is required. Firmly clamp the interconnecting wires so their terminals receive no external stresses. Incomplete connections or clamping may cause terminal overheating or fire.
- After connecting interconnecting and supply wiring be sure to shape the cables so that they do not put undue force on the electrical covers or panels. Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock, or fire. When electrical appliances are connected in Y formation, if the power supply is damaged in some way, to avoid danger the power supply must be replaced by the maker or by someone with an equivalent certification.
- When installing or relocating the system, be sure to keep the refrigerant circuit free from substances other than the specified refrigerant (R410A), such as air. (Any presence of air or other foreign substance in the refrigerant circuit causes an abnormal pressure rise or rupture, resulting in injury.)
- If any refrigerant has leaked out during the installation work, ventilate the room. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)
- After all installation is complete, check to make sure that no refrigerant is leaking out. ❗
  (The refrigerant produces a toxic gas if exposed to flames.)
- During pump-down, stop the compressor before removing the refrigerant piping. If the compressor is still running and the stop valve is open during pump-down, air will be sucked in when the refrigerant piping is removed, causing abnormal pressure in the freezer cycle which will lead to breakage and even injury.
- During installation, attach the refrigerant piping securely before running the compressor. If the compressor is not attached and the stop valve is open during pump-down, air will be sucked in when the compressor is run, causing abnormal pressure in the freezer cycle which will lead to breakage and even injury.
- Be sure to establish an earth. Do not earth the unit to a utility pipe, arrester, or telephone earth. ⏚
  Incomplete earth may cause electrical shock, or fire. A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install an earth leakage breaker. Failure to install an earth leakage breaker may result in electric shocks, or fire.

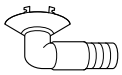
⚠ CAUTION

- Do not install the air conditioner in a place where there is danger of exposure to inflammable gas leakage. ⃠
  If the gas leaks and builds up around the unit, it may catch fire.
- Establish drain piping according to the instructions of this manual. Inadequate piping may cause flooding.
- Tighten the flare nut according to the specified method such as with a torque wrench. If the flare nut is tightened too hard, the flare nut may crack after a long time and cause refrigerant leakage.
- Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.

12.2.2 RKS 50/60/71 F, RXS 50/60 F

Accessories

Accessories supplied with the outdoor unit:

(A) Installation manual	1	(B) Drain plug (Heat pump-Models)  There is on the bottom packing case.	1

Precautions for Selecting the Location

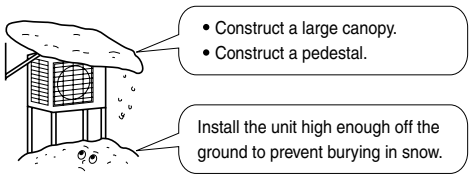
1) Choose a place solid enough to bear the weight and vibration of the unit, where the operation noise will not be amplified.
2) Choose a location where the hot air discharged from the unit or the operation noise will not cause a nuisance to the neighbors of the user.
3) Avoid places near a bedroom and the like, so that the operation noise will cause no trouble.
4) There must be sufficient spaces for carrying the unit into and out of the site.
5) There must be sufficient space for air passage and no obstructions around the air inlet and the air outlet.
6) The site must be free from the possibility of flammable gas leakage in a nearby place.
7) Install units, power cords and inter-unit cables at least 3 meter away from television and radio sets. This is to prevent interference to images and sounds. (Noises may be heard even if they are more than 3 meter away depending on radio wave conditions.)
8) In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the air conditioner.
9) Since drain flows out of the outdoor unit, do not place under the unit anything which must be kept away from moisture.

NOTE
Cannot be installed hanging from ceiling or stacked.

⚠ CAUTION

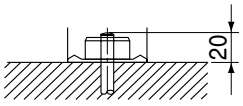
When operating the air conditioner in a low outdoor ambient temperature, be sure to follow the instructions described below.

1) To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.
2) Never install the outdoor unit at a site where the suction side may be exposed directly to wind.
3) To prevent exposure to wind, it is recommended to install a baffle plate on the air discharge side of the outdoor unit.
4) In heavy snowfall areas, select an installation site where the snow will not affect the unit.



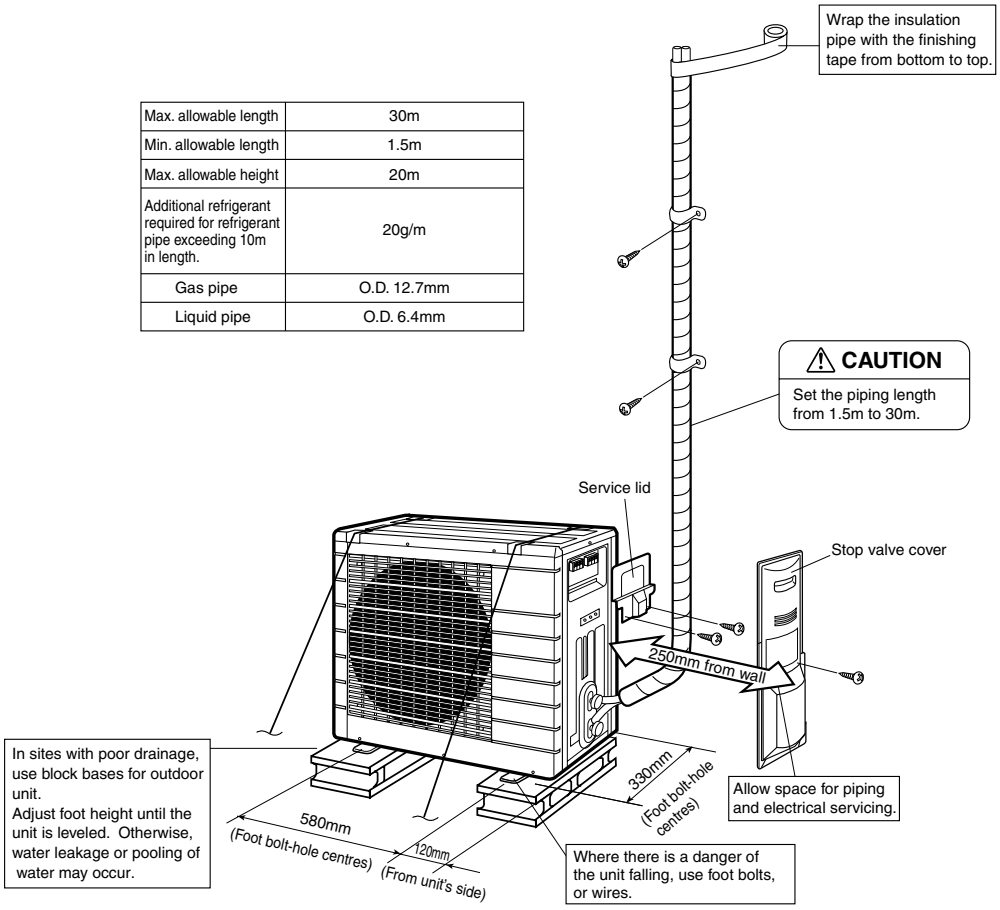
Precautions on Installation

- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installed.
- In accordance with the foundation drawing, fix the unit securely by means of the foundation bolts. (Prepare four sets of M8 or M10 foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 20mm from the foundation surface.



Outdoor Unit Installation Drawings

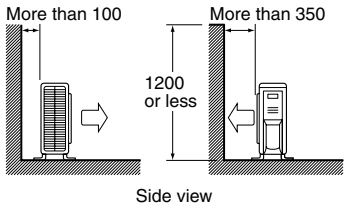
Max. allowable length	30m
Min. allowable length	1.5m
Max. allowable height	20m
Additional refrigerant required for refrigerant pipe exceeding 10m in length.	20g/m
Gas pipe	O.D. 12.7mm
Liquid pipe	O.D. 6.4mm



Installation Guidelines

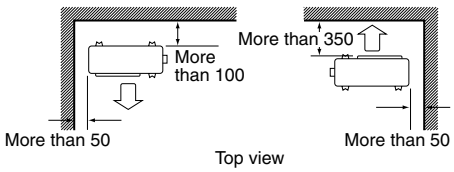
- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the exhaust side should be 1200mm or less.

Wall facing one side



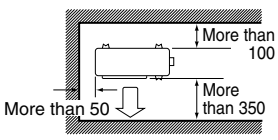
Side view

Walls facing two sides



Top view

Walls facing three sides



Top view

Unit: mm

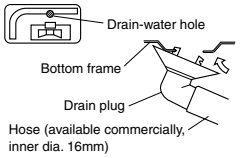
Outdoor Unit Installation (1)

1. Installing outdoor unit.

1) When installing the outdoor unit, refer to “Precautions for Selecting the Location” and the “Outdoor Unit Installation Drawings”.
2) If drain work is necessary, follow the procedures below.

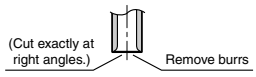
2. Drain work.

1) Use drain plug for drainage.
2) If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 30mm in height under the outdoor unit’s feet.
3) In cold areas, do not use a drain hose with the outdoor unit. (Otherwise, drain water may freeze, impairing heating performance.)



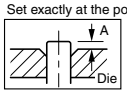
3. Flaring the pipe end.

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.



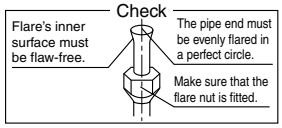
Flaring

Set exactly at the position shown below.



	Flare tool for R410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0-0.5mm	1.0-1.5mm	1.5-2.0mm

Check

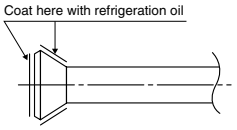


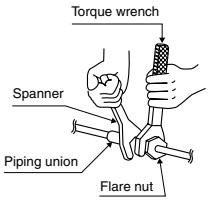
⚠ WARNING

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
4) Do never install a drier to this R410A unit in order to guarantee its lifetime.
5) The drying material may dissolve and damage the system.
6) Incomplete flaring may cause refrigerant gas leakage.

4. Refrigerant piping.

1) Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   • Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.
2) To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A.)





Flare nut tightening torque	
Gas side	Liquid side
1/2 inch	1/4 inch
49.5-60.3N • m (505-615kgf • cm)	14.2-17.2N • m (144-175kgf • cm)

Valve cap tightening torque	
Gas side	Liquid side
1/2 inch	1/4 inch
48.1-59.7N • m (490-610kgf • cm)	21.6-27.4N • m (220-280kgf • cm)

Service port cap tightening torque	10.8-14.7N • m (110-150kgf • cm)

Outdoor Unit Installation (2)

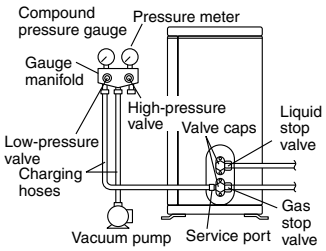
5. Purging air and checking gas leakage.

- When piping work is completed, it is necessary to purge the air and check for gas leakage.

⚠ WARNING

1) Do not mix any substance other than the specified refrigerant (R410A) into the refrigeration cycle.
2) When refrigerant gas leaks occur, ventilate the room as soon and as much as possible.
3) R410A, as well as other refrigerants, should always be recovered and never be released directly into the environment.
4) Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.

- If using additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (4mm) to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench at the specified tightening torque.



1) Connect projection side of charging hose (which comes from gauge manifold) to gas stop valve's service port.

↓

2) Fully open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi).
(High-pressure valve subsequently requires no operation.)

↓

3) Do vacuum pumping and make sure that the compound pressure gauge reads – 0.1MPa (– 76cmHg)*1.

↓

4) Close gauge manifold's low-pressure valve (Lo) and stop vacuum pump.
(Keep this state for a few minutes to make sure that the compound pressure gauge pointer does not swing back.)*2.

↓

5) Remove valve caps from liquid stop valve and gas stop valve.

↓

6) Turn the liquid stop valve's rod 90 degrees counterclockwise with a hexagonal wrench to open valve.
Close it after 5 seconds, and check for gas leakage.
Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods.
After the check is complete, wipe all soapy water off.

↓

7) Disconnect charging hose from gas stop valve's service port, then fully open liquid and gas stop valves.
(Do not attempt to turn valve rod beyond its stop.)

↓

8) Tighten valve caps and service port cap for the liquid and gas stop valves with a torque wrench at the specified torques.

*1. Pipe length vs. vacuum pump run time

Pipe length	Up to 15 metres	More than 15 metres
Run time	Not less than 10 min.	Not less than 15 min.

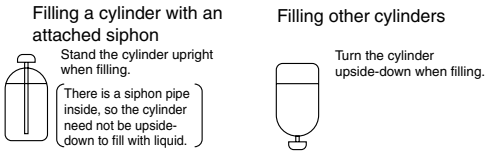
*2. If the compound pressure gauge pointer swings back, refrigerant may have water content or a loose pipe joint may exists. Check all pipe joints and retighten nuts as needed, then repeat steps 2) through 4).

Outdoor Unit Installation (3)

6. Refilling the refrigerant.

Check the type of refrigerant to be used on the machine nameplate.
Precautions when adding R410A
Fill from the liquid pipe in liquid form.
It is a mixed refrigerant, so adding it in gas form may cause the refrigerant composition to change, preventing normal operation.

1) Before filling, check whether the cylinder has a siphon attached or not.
(It should have something like "liquid filling siphon attached" displayed on it.)

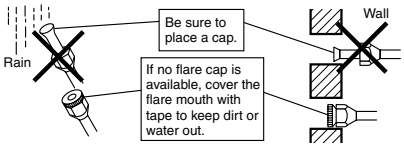


- Be sure to use the R410A tools to ensure pressure and to prevent foreign objects entering.

7. Refrigerant piping work.

7-1 Cautions on pipe handling.

1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 30 to 40mm or larger.)

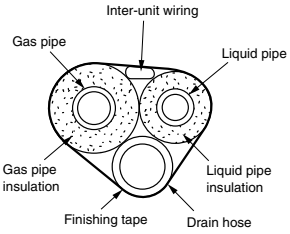


7-2 Selection of copper and heat insulation materials.

When using commercial copper pipes and fittings, observe the following:

1) Insulation material: Polyethylene foam
Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/mh˚C)
Refrigerant gas pipe's surface temperature reaches 110˚C max.
Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Gas side	Liquid side	Gas pipe thermal insulation	Liquid pipe thermal insulation
O.D. 12.7mm	O.D. 6.4mm	I.D. 14-16mm	I.D. 8-10mm
Thickness 0.8mm		Thickness 10mm Min.	

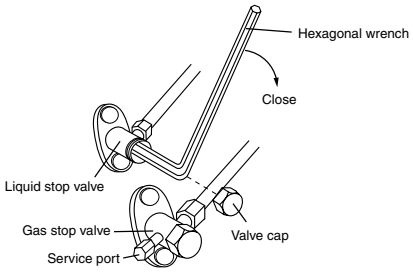


3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Pump Down Operation

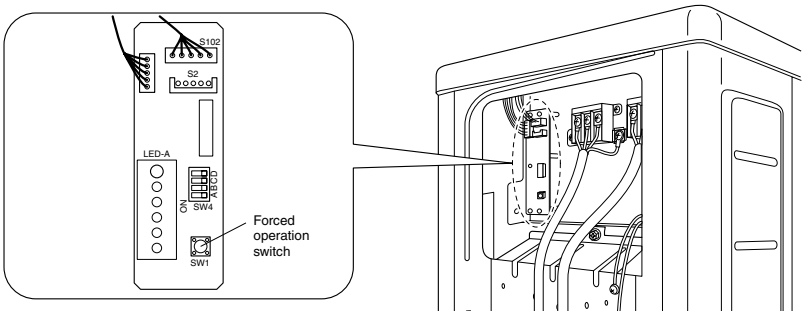
In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

1) Remove the valve caps from liquid stop valve and gas stop valve.
2) Carry out forced cooling operation.
3) After five to ten minutes, close the liquid stop valve with a hexagonal wrench.
4) After two to three minutes, close the gas stop valve and stop forced cooling operation.



Forced cooling operation

1) Press the Forced Operation switch (SW1) to begin forced cooling.
Press the Forced Operation switch (SW1) again to stop forced cooling.

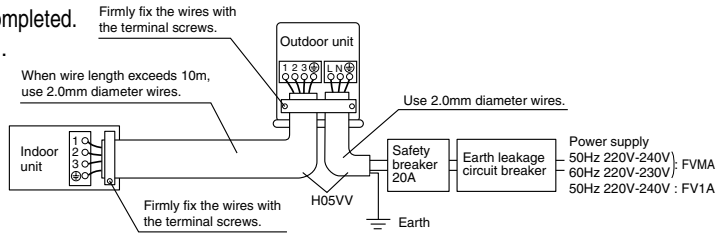


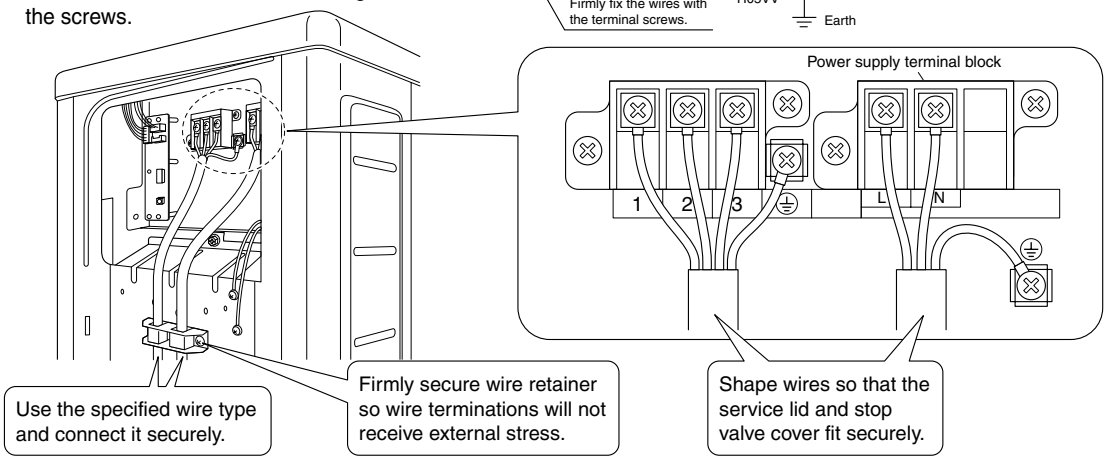
Wiring

⚠ WARNING

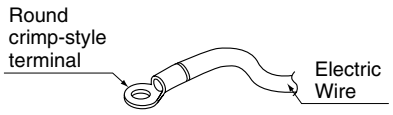
1) Do not use tapped wires, stranded wires, extensioncords, or starburst connections, as they may cause overheating, electrical shock, or fire.
2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc., from the terminal block.) Doing so may cause electric shock or fire.
3) Be sure to install an earth leak detector. (One that can handle higher harmonics.)
   (This unit uses an inverter, which means that it must be used an earth leak detector capable handling harmonics in order to prevent malfunctioning of the earth leak detector itself.)
4) Use an all-pole disconnection type breaker with at least 3mm between the contact point gaps.

- Do not turn ON the safety breaker until all work is completed.
  1) Strip the insulation from the wire (20mm).
  2) Connect the connection wires between the indoor and outdoor units **so that the terminal numbers match**. Tighten the terminal screws securely. We recommend a flathead screwdriver be used to tighten the screws.

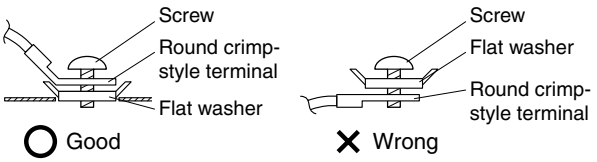




Observe the notes mentioned below when wiring to the power supply terminal board.
Precautions to be taken for power supply wiring.
Use a round crimp-style terminal for connection to the power supply terminal board. In case it cannot be used due to unavoidable reasons, be sure to observe the following instruction.
Place the round crimp-style terminals on the wires up to the covered part and secure in place.

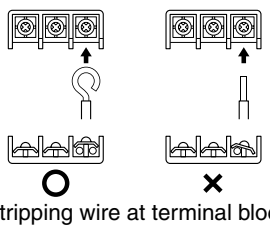


- Ground terminal installation
  Use the following method when installing the round crimp-style terminal.



⚠ CAUTION

When connecting the connection wires to the terminal board using a single core wire, be sure to perform curling. Problems with the work may cause heat and fires.



3) Pull the wire and make sure that it does not disconnect. Then fix the wire in place with a wire stop.

Test Run and Final Check

1. Trial operation and testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.
1-2 Trial operation should be carried out in either cooling or heating mode.

■ For Heat pump

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C in cooling mode, 20˚C to 24˚C in heating mode).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

■ For Cooling only

- Select the lowest programmable temperature.
  1) Trial operation in cooling mode may be disabled depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the operation manual to ensure that all functions and parts, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

2. Test Items.

Test Items	Symptom	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Draining line is properly installed.	Water leakage	
System is properly earthed.	Electrical leakage	
The specified wires are used for inter-unit wiring connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Stop valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote controller commands.	Inoperative	

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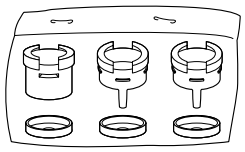
12.2.3 RXS 71 F

Accessories

Accessories supplied with the outdoor unit:

(A) Installation manual	1	(B) Drain socket assy (HEAT PUMP ONLY) 	1

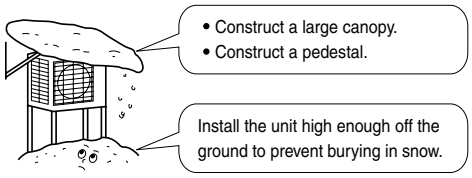
Precautions for Selecting the Location

1) Choose a place solid enough to bear the weight and vibration of the unit, where the operation noise will not be amplified.
2) Choose a location where the hot air discharged from the unit or the operation noise will not cause a nuisance to the neighbors of the user.
3) Avoid places near a bedroom and the like, so that the operation noise will cause no trouble.
4) There must be sufficient spaces for carrying the unit into and out of the site.
5) There must be sufficient space for air passage and no obstructions around the air inlet and the air outlet.
6) The site must be free from the possibility of flammable gas leakage in a nearby place.
7) Install units, power cords and inter-unit cables at least 3 meter away from television and radio sets. This is to prevent interference to images and sounds. (Noises may be heard even if they are more than 3 meter away depending on radio wave conditions.)
8) In coastal areas or other places with salty atmosphere of sulfate gas, corrosion may shorten the life of the air conditioner.
9) Since drain flows out of the outdoor unit, do not place under the unit anything which must be kept away from moisture.

NOTE
Cannot be installed hanging from ceiling or stacked.

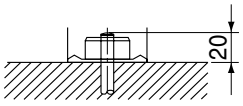
⚠ CAUTION

When operating the air conditioner in a low outdoor ambient temperature, be sure to follow the instructions described below.
1) To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.
2) Never install the outdoor unit at a site where the suction side may be exposed directly to wind.
3) To prevent exposure to wind, it is recommended to install a baffle plate on the air discharge side of the outdoor unit.
4) In heavy snowfall areas, select an installation site where the snow will not affect the unit.



Precautions on Installation

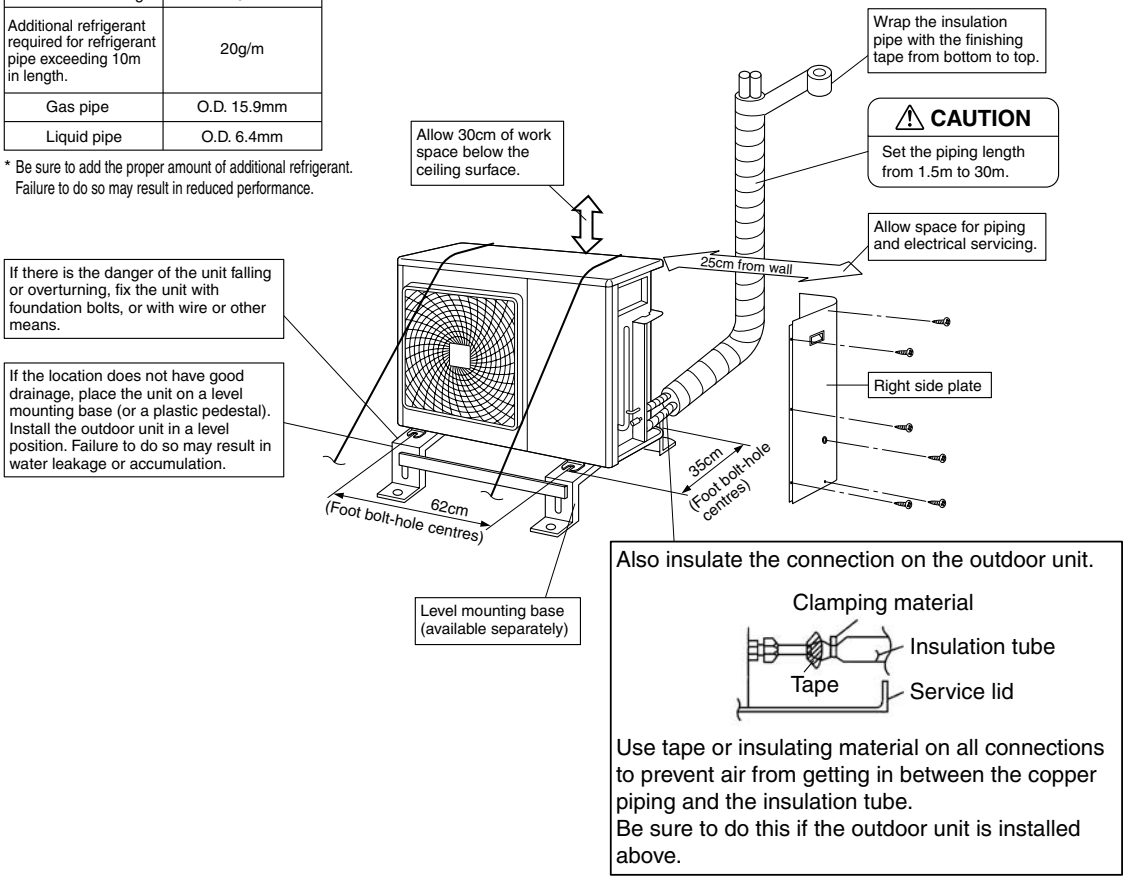
- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installed.
- In accordance with the foundation drawing, fix the unit securely by means of the foundation bolts. (Prepare four sets of M8 or M10 foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 20mm from the foundation surface.



Outdoor Unit Installation Drawings

Model	71/80/90 class
Max. allowable length	30m
Min. allowable length	1.5m
Max. allowable height	20m
Additional refrigerant required for refrigerant pipe exceeding 10m in length.	20g/m
Gas pipe	O.D. 15.9mm
Liquid pipe	O.D. 6.4mm

* Be sure to add the proper amount of additional refrigerant. Failure to do so may result in reduced performance.



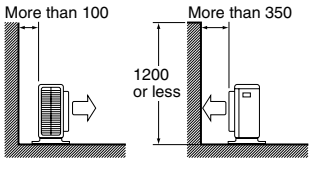
Also insulate the connection on the outdoor unit.

Use tape or insulating material on all connections to prevent air from getting in between the copper piping and the insulation tube.
Be sure to do this if the outdoor unit is installed above.

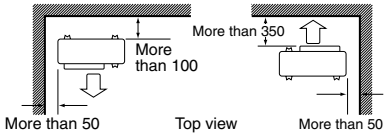
Installation Guidelines

- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation patterns, the wall height on the exhaust side should be 1200mm or less.

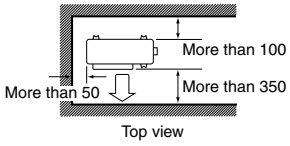
Wall facing one side



Walls facing two sides



Walls facing three sides



Unit: mm

Outdoor Unit Installation (1)

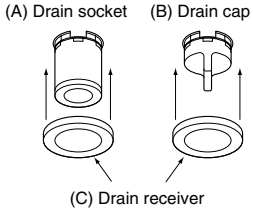
1. Installing outdoor unit.

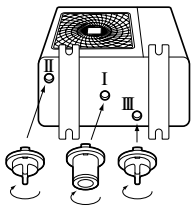
1) When installing the outdoor unit, refer to "Precautions for Selecting the Location" and the "Outdoor Unit Installation Drawings".
2) If drain work is necessary, follow the procedures below.

2. Drain work.

- Use drain plug for drainage.
- If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 100mm in height under the outdoor unit's feet.
- In cold areas, do not use a drain hose with the outdoor unit. (Otherwise, drain water may freeze, impairing heating performance.)

1) Insert drain receiver (C) onto drain socket (A) and drain cap (B) beyond 4 projections around drain socket and drain cap.
2) Insert drain socket and drain caps into their matching drain hole ; Drain socket (A) into drain hole Ⅰ and drain caps (B) into drain hole Ⅱ and Ⅲ. After insertion, turn them about 40° clockwise.





(Be sure not to insert them into wrong drain holes, or there causes water leakage.)

(View from bottom)

3) Connect vinyl hose on the market (internal diameter of 25mm) to drain socket (A). (If the hose is too long and hangs down, fix it carefully to prevent the kinks.)

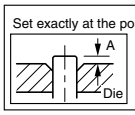
NOTE
If the drain holes of the outdoor unit are covered with the mounting bracket or the floor, raise the unit to provide the space of more than 100mm under the leg of the outdoor unit.

3. Flaring the pipe end.

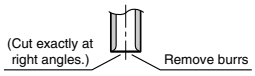
1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring is properly made.

Flaring

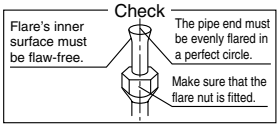
Set exactly at the position shown below.



	Flare tool for R410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0-0.5mm	1.0-1.5mm	1.5-2.0mm



Check

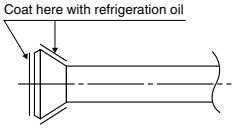


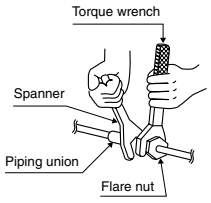
⚠ WARNING

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
4) Do never install a drier to this R410A unit in order to guarantee its lifetime.
5) The drying material may dissolve and damage the system.
6) Incomplete flaring may cause refrigerant gas leakage.

4. Refrigerant piping.

1) Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
   - Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.
2) To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces of the flare.





Flare nut tightening torque	
Gas side	Liquid side
5/8 inch	1/4 inch
61.8-75.4N • m (630-770kgf • cm)	14.2-17.2N • m (144-175kgf • cm)

Valve cap tightening torque	
Gas side	Liquid side
5/8 inch	1/4 inch
48.1-59.7N • m (490-610kgf • cm)	21.6-27.4N • m (220-280kgf • cm)

Service port cap tightening torque	10.8-14.7N • m (110-150kgf • cm)

Outdoor Unit Installation (2)

5. Purging air and checking gas leakage.

- When piping work is completed, it is necessary to purge the air and check for gas leakage.

⚠ WARNING

1) Do not mix any substance other than the specified refrigerant (R410A) into the refrigeration cycle.
2) To prevent air pollution, a vacuum pump should be used for air purging wherever possible.
3) Refrigerant gas leaks during air purging, ventilate the room as soon as possible.
4) Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.

- If using additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (4mm) to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench at the specified tightening torque.

1) Connect projection side of charging hose (which comes from gauge manifold) to gas stop valve's service port.

↓

2) Fully open gauge manifold's low-pressure valve (Lo) and completely close its high-pressure valve (Hi).
(High-pressure valve subsequently requires no operation.)

↓

3) Do vacuum pumping and make sure that the compound pressure gauge reads – 0.1MPa (– 76cmHg)*1.

↓

4) Close gauge manifold's low-pressure valve (Lo) and stop vacuum pump.
(Keep this state for a few minutes to make sure that the compound pressure gauge pointer does not swing back.)*2.

↓

5) Remove covers from liquid stop valve and gas stop valve.

↓

6) Turn the liquid stop valve's rod 90 degrees counterclockwise with a hexagonal wrench to open valve.
Close it after 5 seconds, and check for gas leakage.
Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods.
After the check is complete, wipe all soapy water off.

↓

7) Disconnect charging hose from gas stop valve's service port, then fully open liquid and gas stop valves.
(Do not attempt to turn valve rod beyond its stop.)

↓

8) Tighten valve caps and service port caps for the liquid and gas stop valves with a torque wrench at the specified torques.

*1. Pipe length vs. vacuum pump run time

Pipe length	Up to 15 metres	More than 15 metres
Run time	Not less than 10 min.	Not less than 15 min.

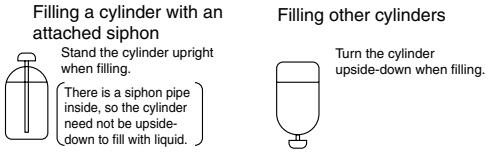
*2. If the compound pressure gauge pointer swings back, refrigerant may have water content or a loose pipe joint may exists. Check all pipe joints and retighten nuts as needed, then repeat steps 2) through 4).

Outdoor Unit Installation (3)

6. Refilling the refrigerant.

Check the type of refrigerant to be used on the machine nameplate.
Precautions when adding R410A
Fill from the liquid pipe in liquid form.
It is a mixed refrigerant, so adding it in gas form may cause the refrigerant composition to change, preventing normal operation.

1) Before filling, check whether the cylinder has a siphon attached or not.
(It should have something like "liquid filling siphon attached" displayed on it.)

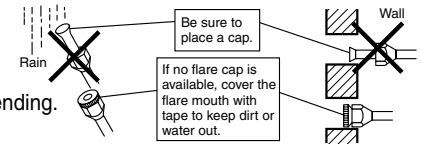


- Be sure to use the R410A tools to ensure pressure and to prevent foreign objects entering.

7. Refrigerant piping work.

7-1 Cautions on pipe handling.

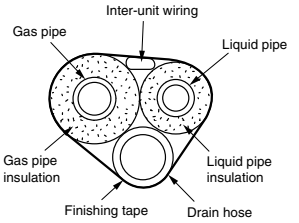
1) Protect the open end of the pipe against dust and moisture.
2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 30 to 40mm or larger.)



7-2 Selection of copper and heat insulation materials.

When using commercial copper pipes and fittings, observe the following:

1) Insulation material: Polyethylene foam
Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/mh˚C)
Refrigerant gas pipe's surface temperature reaches 110˚C max.
Choose heat insulation materials that will withstand this temperature.
2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.



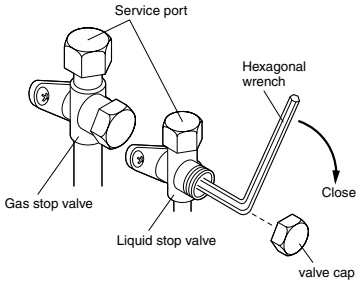
Gas side	Liquid side	Gas pipe thermal insulation	Liquid pipe thermal insulation
O.D. 15.9mm	O.D. 6.4mm	I.D. 16-20mm	I.D. 8-10mm
Thickness 1.0mm	Thickness 0.8mm	Thickness 10mm Min.	

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

Pump Down Operation

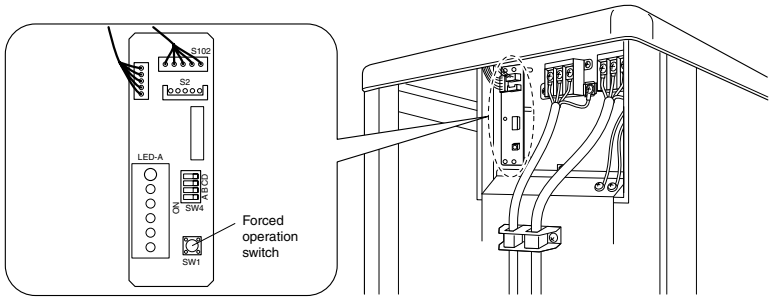
In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

1) Remove the valve cap from liquid stop valve and gas stop valve.
2) Carry out forced cooling operation.
3) After five to ten minutes, close the liquid stop valve with a hexagonal wrench.
4) After two to three minutes, close the gas stop valve and stop forced cooling operation.



Forced cooling operation

1) Press the Forced Operation switch (SW1) to begin forced cooling. Press the Forced Operation switch (SW1) again to stop forced cooling.

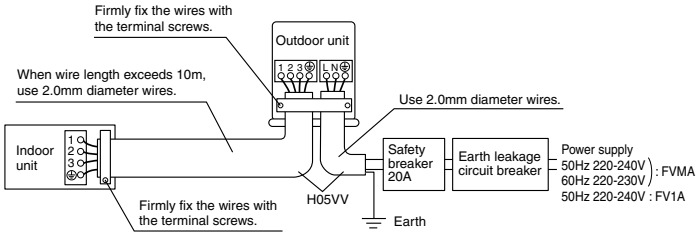


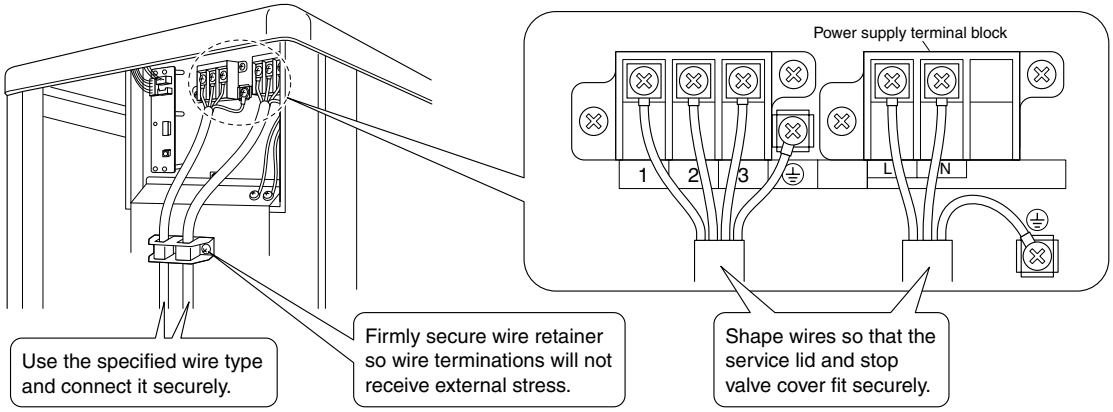
Wiring

⚠ WARNING

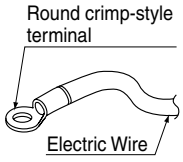
1) Do not use tapped wires, stranded wires, extensioncords, or starburst connections, as they may cause overheating, electrical shock, or fire.
2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc., from the terminal block.) Doing so may cause electric shock or fire.
3) Be sure to install an earth leak detector. (One that can handle higher harmonics.)
   (This unit uses an inverter, which means that it must be used an earth leak detector capable handling harmonics in order to prevent malfunctioning of the earth leak detector itself.)
4) Use an all-pole disconnection type breaker with at least 3mm between the contact point gaps.

- Do not turn ON the safety breaker until all work is completed.
  1) Strip the insulation from the wire (20mm).
  2) Connect the connection wires between the indoor and outdoor units **so that the terminal numbers match**. Tighten the terminal screws securely. We recommend a flathead screwdriver be used to tighten the screws.

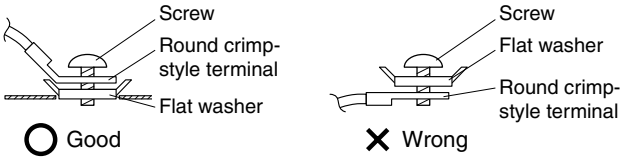




Observe the notes mentioned below when wiring to the power supply terminal board.
Precautions to be taken for power supply wiring.
Use a round crimp-style terminal for connection to the power supply terminal board.
In case it cannot be used due to unavoidable reasons, be sure to observe the following instruction.
Place the round crimp-style terminals on the wires up to the covered part and secure in place.

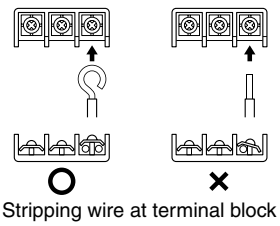


- Ground terminal installation
  Use the following method when installing the round crimp-style terminal.



⚠ CAUTION

When connecting the connection wires to the terminal board using a single core wire, be sure to perform curling.
Problems with the work may cause heat and fires.



3) Pull the wire and make sure that it does not disconnect. Then fix the wire in place with a wire stop.

Test Run and Final Check

1. Trial Operation and Testing.

1-1 Measure the supply voltage and make sure that it falls in the specified range.
1-2 Trial operation should be carried out in cooling or heating mode.

■ **For Heat pump**

- In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.
  1) Trial operation may be disabled in either mode depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C in cooling mode, 20˚C to 24˚C in heating mode).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

■ **For Cooling only**

- Select the lowest programmable temperature.
  1) Trial operation in cooling mode may be disabled depending on the room temperature.
  2) After trial operation is complete, set the temperature to a normal level (26˚C to 28˚C).
  3) For protection, the unit disables restart operation for 3 minutes after it is turned off.

1-3 Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, such as louver movement, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

2. Test Items.

Test items	Symptom	Check
Indoor and outdoor units are installed properly on solid bases.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Draining line is properly installed.	Water leakage	
System is properly earthed.	Electrical leakage	
The specified wires are used for interconnecting wire connections.	Inoperative or burn damage	
Indoor or outdoor unit's air intake or exhaust has clear path of air. Stop valves are opened.	Incomplete cooling/heating function	
Indoor unit properly receives remote controller commands.	Inoperative	

3P182980-1

13. Operation Manual

13.1 Safety Precautions

Safety precautions

- Keep this manual where the operator can easily find them.
- Read this manual attentively before starting up the unit.
- For safety reason the operator must read the following cautions carefully.
- This manual classifies precautions into WARNING and CAUTION. Be sure to follow all precautions below: they are all important for ensuring safety.

⚠ WARNING	⚠ CAUTION
If you do not follow these instructions exactly, the unit may cause property damage, personal injury or loss of life.	If you do not follow these instructions exactly, the unit may cause minor or moderate property damage or personal injury.

Never do.

Be sure to follow the instructions.

Be sure to earth the air conditioner.

Never cause the air conditioner (including the remote controller) to get wet.

Never touch the air conditioner (including the remote controller) with a wet hand.

⚠ WARNING

- In order to avoid fire, explosion or injury, do not operate the unit when harmful, among which flammable or corrosive gases, are detected near the unit.
- It is not good for health to expose your body to the air flow for a long time.
- Do not put a finger, a rod or other objects into the air outlet or inlet. As the fan is rotating at a high speed, it will cause injury.
- Do not attempt to repair, relocate, modify or reinstall the air conditioner by yourself. Incorrect work will cause electric shocks, fire etc.
  For repairs and reinstallation, consult your Daikin dealer for advice and information.

- The refrigerant used in the air conditioner is safe. Although leaks should not occur, if for some reason any refrigerant happens to leak into the room, make sure it does not come in contact with any flame as of gas heaters, kerosene heaters or gas range.
- If the air conditioner is not cooling properly, the refrigerant may be leaking, so call your dealer.
  When carrying out repairs accompanying adding refrigerant, check the content of the repairs with our service staff.
- Do not attempt to install the air conditioner by your self. Incorrect work will result in water leakage, electric shocks or fire. For installation, consult the dealer or a qualified technician.
- In order to avoid electric shock, fire or injury, if you detect any abnormally such as smell of fire, stop the operation and turn off the breaker. And call your dealer for instructions.

⚠ CAUTION

- The air conditioner must be earthed. Incomplete earthing may result in electric shocks. Do not connect the earth line to a gas pipe, water pipe, lightning rod, or a telephone earth line.

- In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.
- Never expose little children, plants or animals directly to the air flow.
- Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit. It may cause incomplete combustion or deformation of the unit due to the heat.
- Do not block air inlets nor outlets. Impaired air flow may result in insufficient performance or trouble.

2

- Do not stand or sit on the outdoor unit. Do not place any object on the unit to avoid injury.
- Do not place anything under the indoor or outdoor unit that must be kept away from moisture. In certain conditions, moisture in the air may condense and drip.
- After a long use, check the unit stand and fittings for damage.
- Do not touch the air inlet and alminium fins of outdoor unit. It may cause injury.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Young children should be supervised to ensure that they do not play with the appliance.

- To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.
- Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
- Do not connect the air conditioner to a power supply different from the one as specified. It may cause trouble or fire.
- Depending on the environment, an earth leakage breaker must be installed. Lack of an earth leakage breaker may result in electric shocks.
- Arrange the drain hose to ensure smooth drainage. Incomplete draining may cause wetting of the building, furniture etc.
- Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.
  Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or fire when making contact with electrical parts.

- Do not operate the air conditioner with wet hands.

- Do not wash the indoor unit with excessive water, only use a slightly wet cloth.
- Do not place things such as vessels containing water or anything else on top of the unit. Water may penetrate into the unit and degrade electrical insulations, resulting in an electric shock.

Installation site.

■ To install the air conditioner in the following types of environments, consult the dealer.
- Places with an oily ambient or where steam or soot occurs.
- Salty environment such as coastal areas.
- Places where sulfide gas occurs such as hot springs.
- Places where snow may block the outdoor unit.

The drain from the outdoor unit must be discharged to a place of good drainage.

Consider nuisance to your neighbours from noises.

■ For installation, choose a place as described below.
- A place solid enough to bear the weight of the unit which does not amplify the operation noise or vibration.
- A place from where the air discharged from the outdoor unit or the operation noise will not annoy your neighbours.

Electrical work.

- For power supply, be sure to use a separate power circuit dedicated to the air conditioner.

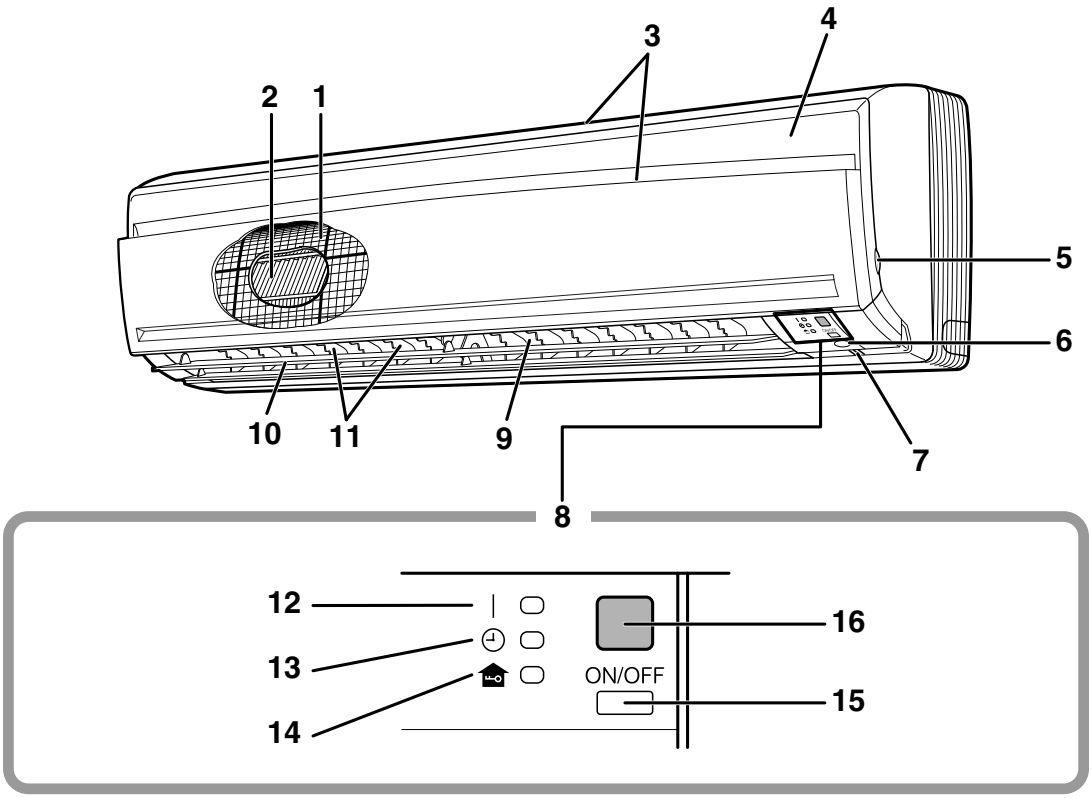
System relocation.

- Relocating the air conditioner requires specialized knowledge and skills. Please consult the dealer if relocation is necessary for moving or remodeling.

13.2 FTKS 50/60/71 F

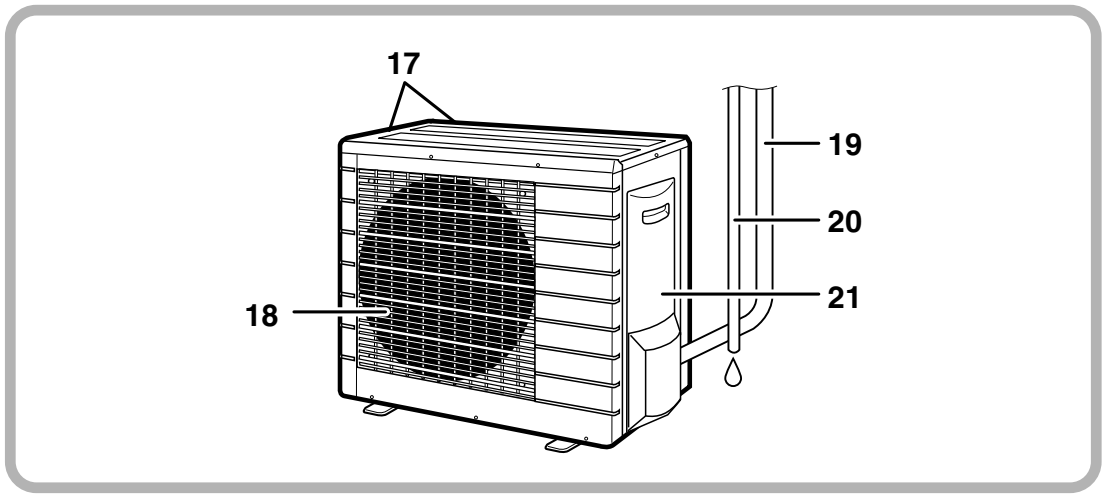
Names of parts

■ Indoor Unit



4

■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Titanium Apatite Photocatalytic Air-Purifying Filter**
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation. (page 18.)
7. **Room temperature sensor:**
   - It senses the air temperature around the unit.
8. **Display**
9. **Air outlet**
10. **Flap (horizontal blade):** (page 12.)
11. **Louvers (vertical blades):**
    - The Louvers are inside of the air outlet. (page 12.)
12. **Operation lamp (green)**
13. **TIMER lamp (yellow):** (page 20.)
14. **HOME LEAVE lamp (red):**
    - Lights up when you use HOME LEAVE Operation. (page 16.)
15. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refer to the following table.

Mode	Temperature setting	Air flow rate
COOL	22°C	AUTO

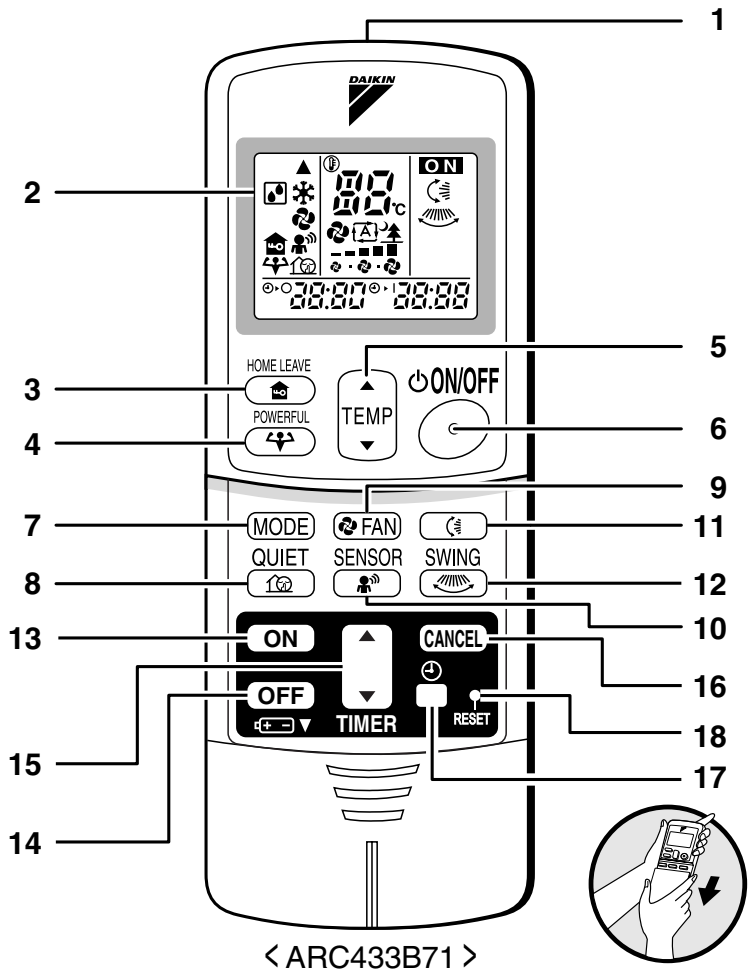
    - This switch is useful when the remote controller is missing.
16. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**
20. **Drain hose**
21. **Earth terminal:**
    - It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



< ARC433B71 >

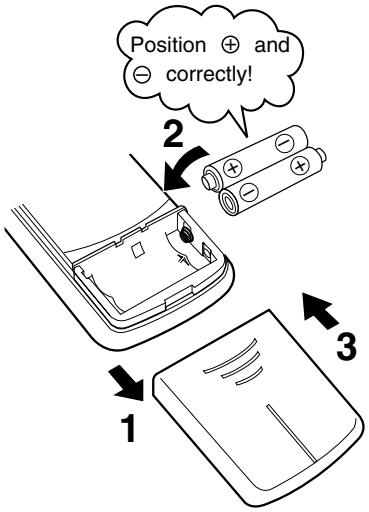
1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings.
     (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:**
   HOME LEAVE operation (page 16.)
4. **POWERFUL button:**
   POWERFUL operation (page 14.)
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (DRY/COOL/FAN) (page 10.)
8. **QUIET button:** OUTDOOR UNIT QUIET operation (page 15.)
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SENSOR button:** INTELLIGENT EYE operation (page 18.)
11. **SWING button:** (page 12.)
    - Flap (Horizontal blade)
12. **SWING button:** (page 12.)
    - Louver (Vertical blades)
13. **ON TIMER button:** (page 21.)
14. **OFF TIMER button:** (page 20.)
15. **TIMER Setting button:**
    - It changes the time setting.
16. **TIMER CANCEL button:**
    - It cancels the timer setting.
17. **CLOCK button:** (page 9.)
18. **RESET button:**
    - Restart the unit if it freezes.
    - Use a thin object to push.

6

Preparation Before Operation

■ To set the batteries

1. **Slide the front cover to take it off.**
2. **Set two dry batteries (AAA).**
3. **Set the front cover as before.**



ATTENTION

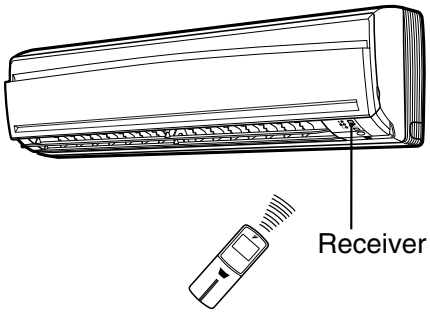
■ **About batteries**

- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out.
- We recommend replacing once a year, although if the remote controller display begins to fade or if reception deteriorates, please replace with new alkali batteries. Using manganese batteries reduces the lifespan.
- The attached batteries are provided for the initial use of the system.
  The usable period of the batteries may be short depending on the manufactured date of the air conditioner.

Preparation Before Operation

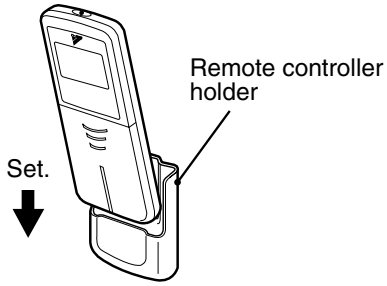
■ To operate the remote controller

- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is about 7m.



■ To fix the remote controller holder on the wall

1. **Choose a place from where the signals reach the unit.**
2. **Fix the holder to a wall, a pillar, or similar location with the screws procured locally.**
3. **Place the remote controller in the remote controller holder.**



• To remove, pull it upwards.

ATTENTION

■ **About remote controller**

- Never expose the remote controller to direct sunlight.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult the shop if that is the case.
- If the remote controller signals happen to operate another appliance, move that appliance to somewhere else, or consult the shop.

■ To set the clock

1. **Press "CLOCK button".**

   0:00 is displayed.

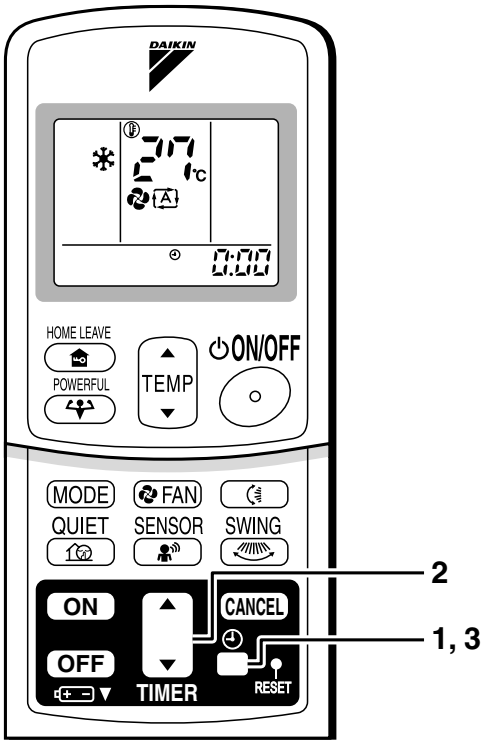
   ◷ blinks.

2. **Press "TIMER setting button" to set the clock to the present time.**

   Holding down "▲" or "▼" button rapidly increases or decreases the time display.

3. **Press "CLOCK button".**

   : blinks.



■ Turn the breaker ON

- Turning ON the breaker opens the flap, then closes it again. (This is a normal procedure.)

NOTE

■ Tips for saving energy

- Be careful not to cool the room too much.
  Keeping the temperature setting at a moderate level helps save energy.
- Cover windows with a blind or a curtain.
  Blocking sunlight and air from outdoors increases the cooling effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once in about every two weeks.

Recommended temperature setting
For cooling:26°C – 28°C

■ Please note

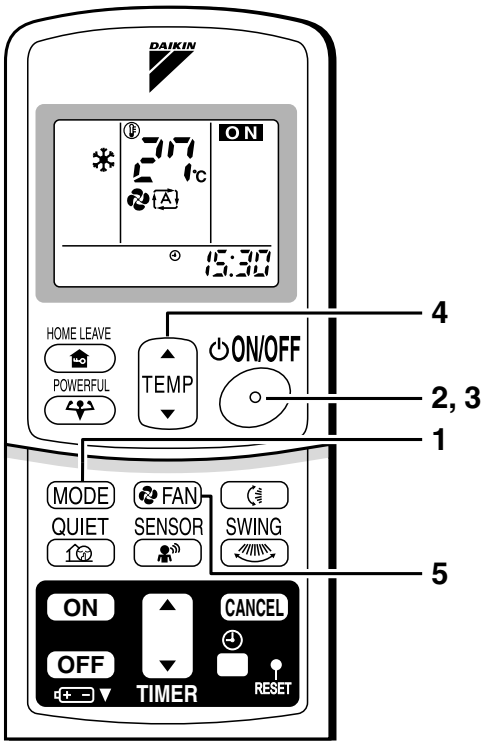
- The air conditioner always consumes 15-35 watts of electricity even while it is not operating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker OFF.
- Use the air conditioner in the following conditions.

Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature: <3MKS50/4MKS71> –10 to 46˚C <4MKS80> 10 to 46˚C <RKS> –10 to 46˚C Indoor temperature: 18 to 32˚C Indoor humidity: 80% max.	• A safety device may work to stop the operation. (In multi system, it may work to stop the operation of the outdoor unit only.) • Condensation may occur on the indoor unit and drip.
DRY	Outdoor temperature: <3MKS50/4MKS71> –10 to 46˚C <4MKS80> 10 to 46˚C <RKS> –10 to 46˚C Indoor temperature: 18 to 32˚C Indoor humidity: 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.

- Operation outside this humidity or temperature range may cause a safety device to disable the system.

DRY · COOL · FAN Operation

The air conditioner operates with the operation mode of your choice.
From the next time on, the air conditioner will operate with the same operation mode.



■ To start operation

1. Press “MODE selector button” and select a operation mode.

- Each pressing of the button advances the mode setting in sequence.

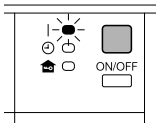
: DRY

: COOL

: FAN

2. Press “ON/OFF button”.

- The OPERATION lamp lights up.



■ To stop operation

3. Press “ON/OFF button” again.

- Then OPERATION lamp goes off.

■ To change the temperature setting

4. Press “TEMPERATURE adjustment button”.

DRY or FAN mode	COOL mode
The temperature setting is not variable.	Press “▲” to raise the temperature and press “▼” to lower the temperature.
	Set to the temperature you like.

■ To change the air flow rate setting

5. Press “FAN setting button”.

DRY mode	COOL or FAN mode
The air flow rate setting is not variable.	Five levels of air flow rate setting from “ ” to “ ” plus “ ” “ ” are available. 

- Indoor unit quiet operation

  When the air flow is set to “ ”, the noise from the indoor unit will become quieter. Use this when making the noise quieter.

  The unit might lose capacity when the air flow rate is set to a weak level.

NOTE

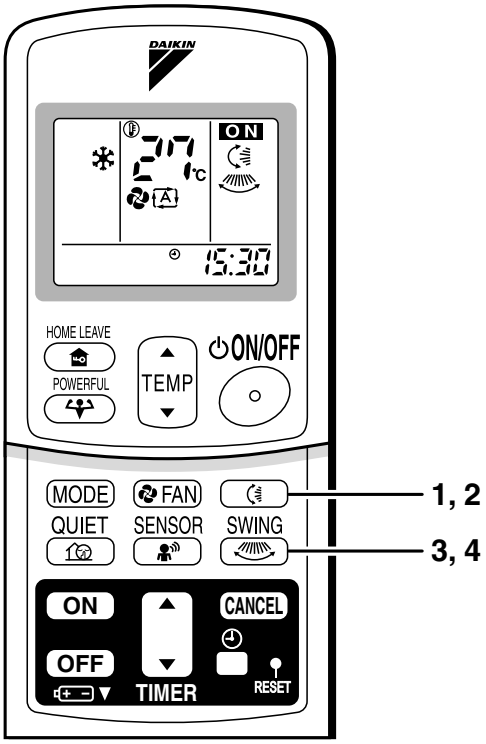
■ **Note on COOL operation**
- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, performance drops.

■ **Note on DRY operation**
- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

■ **Note on air flow rate setting**
- At smaller air flow rates, the cooling effect is also smaller.

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.



■ To adjust the horizontal blade (flap)

1. **Press "SWING button ".**
   - " " is displayed on the LCD and the flaps will begin to swing.
2. **When the flap has reached the desired position, press "SWING button " once more.**
   - The flap will stop moving.
   - " " disappears from the LCD.

■ To adjust the vertical blades (louvers)

3. **Press "SWING button ".**
   - " " is displayed on the LCD.
4. **When the louvers have reached the desired position, press the "SWING button " once more.**
   - The louvers will stop moving.
   - " " disappears from the LCD.

■ To 3-D Airflow

1. 3. Press the "SWING button" and the "SWING button": the "" and "" display will light up and the flap and louvers will move in turn.

■ To cancel 3-D Airflow

2. 4. Press either the "SWING button" or the "SWING button".

Notes on louvers angles

■ **ATTENTION**

- Always use a remote controller to adjust the louvers angles. In side the air outlet, a fan is rotating at a high speed.

Notes on flap angle

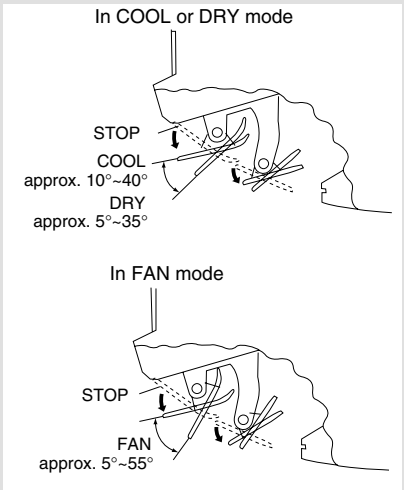
- When "**SWING button**" is selected, the flaps swinging range depends on the operation mode. (See the figure.)

Three-Dimensional (3-D) Airflow

- Using three-dimensional airflow circulates cold air, which tends to collected at the bottom of the room, and hot air, which tends to collect near the ceiling, throughout the room, preventing areas of cold and hot developing.

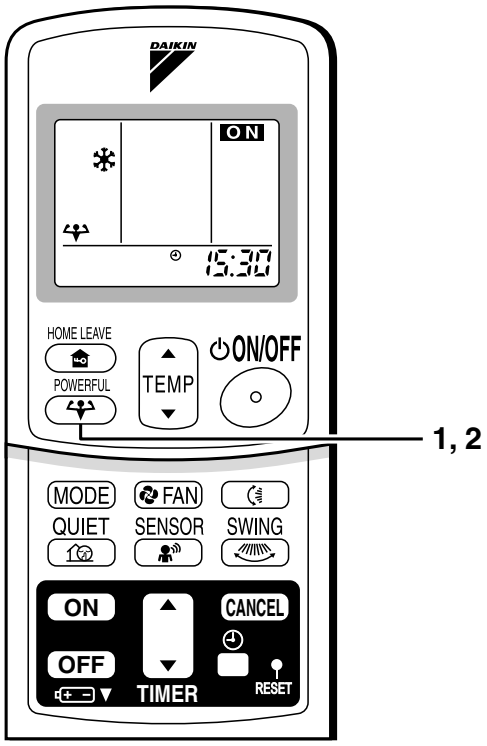
■ **ATTENTION**

- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, fan is rotating at a high speed.



POWERFUL Operation

POWERFUL operation quickly maximizes the cooling effect in any operation mode. You can get the maximum capacity.



■ To start POWERFUL operation

1. **Press "POWERFUL button".**
   - POWERFUL operation ends in 20 minutes. Then the system automatically operates again with the settings which were used before POWERFUL operation.
   - When using Powerful operation, there are some functions which are not available.
   - "" is displayed on the LCD.

■ To cancel POWERFUL operation

2. **Press "POWERFUL button" again.**
   - "" disappears from the LCD.

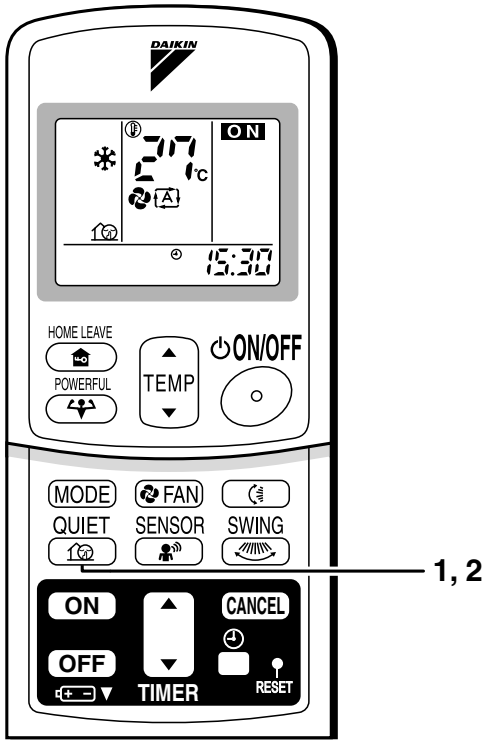
NOTE

■ **Notes on POWERFUL operation**

- POWERFUL Operation cannot be used together with QUIET Operation. Priority is given to the function of whichever button is pressed last.
- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the "" disappears from the LCD.
- **In COOL mode**
  To maximize the cooling effect, the capacity of outdoor unit must be increased and the air flow rate be fixed to the maximum setting.
  The temperature and air flow settings are not variable.
- **In DRY mode**
  The temperature setting is lowered by 2.5°C and the air flow rate is slightly increased.
- **In FAN mode**
  The air flow rate is fixed to the maximum setting.

OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET operation lowers the noise level of the outdoor unit by changing the frequency and fan speed on the outdoor unit. This function is convenient during night.



■ To start OUTDOOR UNIT QUIET operation

1. **Press "QUIET button".**
   - "🏠" is displayed on the LCD.

■ To cancel OUTDOOR UNIT QUIET operation

2. **Press "QUIET button" again.**
   - "🏠" disappears from the LCD.

NOTE

■ **Note on OUTDOOR UNIT QUIET operation**

- This function is available in COOL mode.
  (This is not available in FAN and DRY mode.)
- POWERFUL operation and OUTDOOR UNIT QUIET operation cannot be used at the same time.
  Priority is given to the function of whichever button is pressed last.
- If operation is stopped using the remote controller or the main unit ON/OFF switch when using OUTDOOR UNIT QUIET operation, " 🏠 " will remain on the remote controller display.

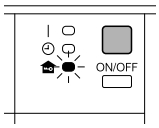
HOME LEAVE Operation

HOME LEAVE operation is a function which allows you to record your preferred temperature and air flow rate settings.

■ To start HOME LEAVE operation

1. Press “HOME LEAVE button”.

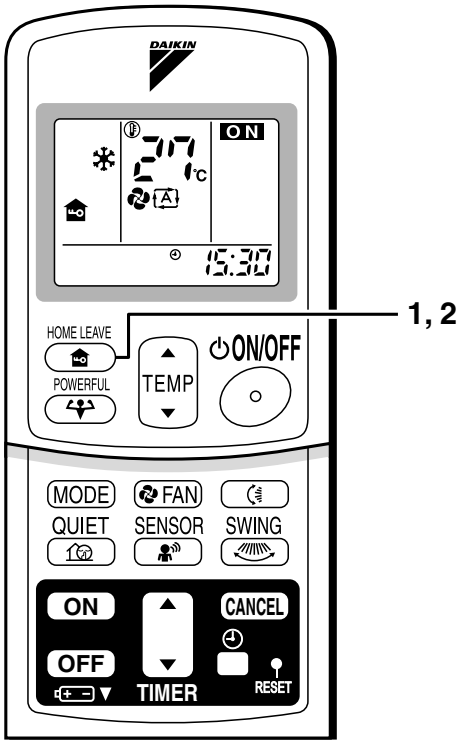
- “ ” is displayed on the LCD.
- The HOME LEAVE lamp lights up.



■ To cancel HOME LEAVE operation

2. Press “HOME LEAVE button” again.

- “ ” disappears from the LCD.
- The HOME LEAVE lamp goes off.



Before using HOME LEAVE operation.

■ **To set the temperature and air flow rate for HOME LEAVE operation**

When using HOME LEAVE operation for the first time, please set the temperature and air flow rate for HOME LEAVE operation. Record your preferred temperature and air flow rate.

	Initial setting		Selectable range	
	temperature	Air flow rate	temperature	Air flow rate
Cooling	25°C	“A”	18-32°C	5 step, “A” and “ ”

1. Press “HOME LEAVE button”. Make sure “ ” is displayed in the remote controller display.

2. Adjust the set temperature with “ ▲ ” or “ ▼ ” as you like.

3. Adjust the air flow rate with “FAN” setting button as you like.

Home leave operation will run with these settings the next time you use the unit. To change the recorded information, repeat steps 1 – 3.

■ What's the HOME LEAVE operation?

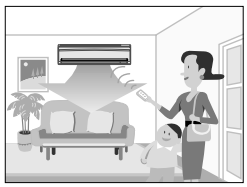
Is there a set temperature and air flow rate which is most comfortable, a set temperature and air flow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and air flow rate. You can start your favorite operation mode simply by pressing the HOME LEAVE button on the remote controller. This function is convenient in the following situations.

■ Useful in these cases

1.Use as an energy-saving mode.

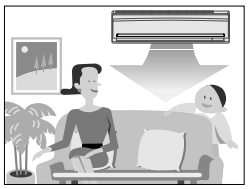
Set the temperature 2-3°C higher (cooling) than normal. Setting the fan strength to the lowest setting allows the unit to be used in energy-saving mode. Also convenient for use while you are out or sleeping.

- **Every day before you leave the house...**



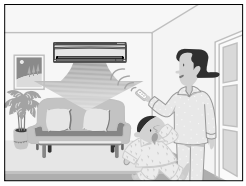
When you go out, push the "HOME LEAVE Operation" button, and the air conditioner will adjust capacity to reach the preset temperature for HOME LEAVE Operation.

When you return, you will be welcomed by a comfortably air conditioned room.

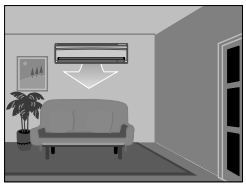


Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

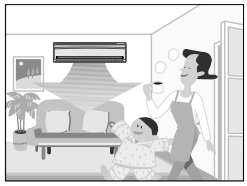
- **Before bed...**



Set the unit to HOME LEAVE Operation before leaving the living room when going to bed.



The unit will maintain the temperature in the room at a comfortable level while you sleep.



When you enter the living room in the morning, the temperature will be just right. Disengaging HOME LEAVE Operation will return the temperature to that set for normal operation. Even the coldest winters will pose no problem!

2.Use as a favorite mode.

Once you record the temperature and air flow rate settings you most often use, you can retrieve them by pressing HOME LEAVE button. You do not have to go through troublesome remote control operations.

NOTE

- Once the temperature and air flow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL mode. Cannot be used in DRY, and FAN mode.
- HOME LEAVE operation runs in accordance with the previous operation mode (COOL) before using HOME LEAVE operation.
- HOME LEAVE operation and POWERFUL operation cannot be used at the same time. Last button that was pressed has priority.
- The operation mode cannot be changed while HOME LEAVE operation is being used.
- When operation is shut off during HOME LEAVE operation, using the remote controller or the indoor unit ON/OFF switch, " " will remain on the remote controller display.

INTELLIGENT EYE Operation

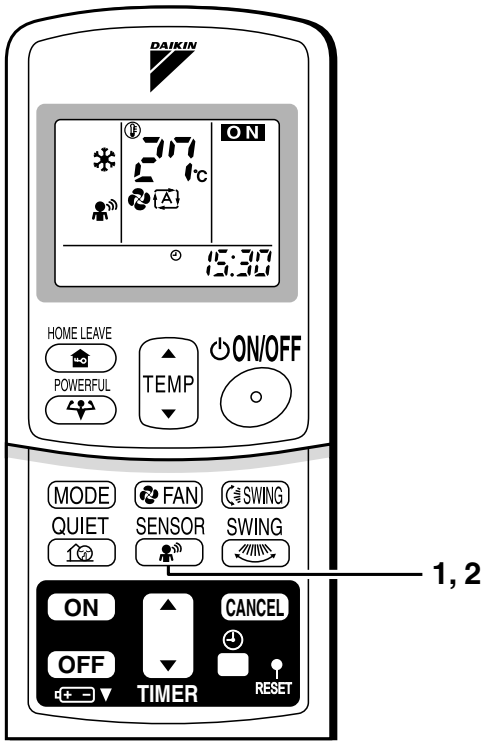
"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

■ To start INTELLIGENT EYE operation

1. **Press "SENSOR button".**
   - "" is displayed on the LCD.

■ To cancel the INTELLIGENT EYE operation

2. **Press "SENSOR button" again.**
   - "" disappears from the LCD.



[EX.]

When somebody in the room
- **Normal operation**

⇩

When nobody in the room
- **20 min. after, start energy saving operation.**

⇩

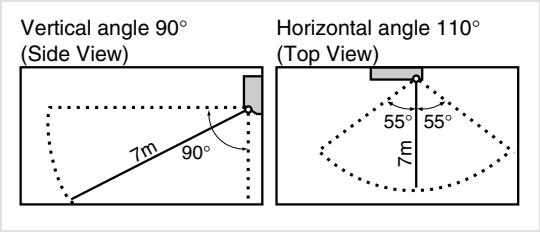
Somebody back in the room
- **Back to normal operation.**

“INTELLIGENT EYE” is useful for Energy Saving.

■ **Energy saving operation**
- Change the temperature +2°C in cooling / +1°C in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on “INTELLIGENT EYE”

- Application range is as follows.



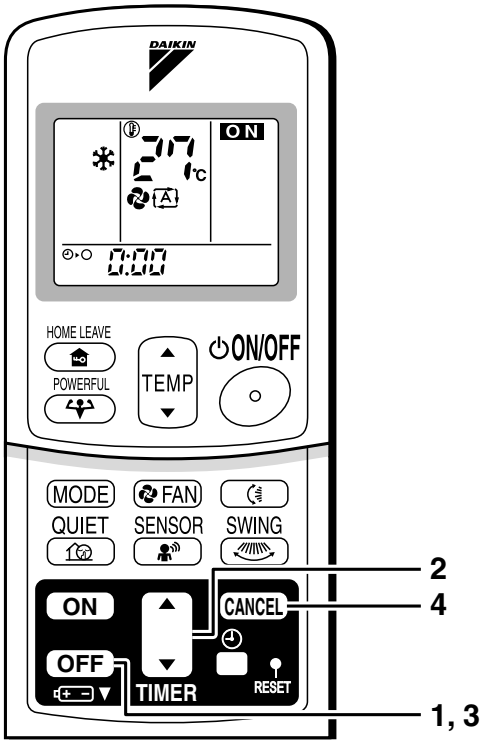
- Sensor may not detect moving objects further than 7m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode (page 20.) will not go on during you use INTELLIGENT EYE operation.

⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect objects it shouldn’t as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

TIMER Operation

Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning. You can also use OFF TIMER and ON TIMER in combination.



■ To use OFF TIMER operation

- Check that the clock is correct. If not, set the clock to the present time. (page 9.)

1. Press “OFF TIMER button”.

0:00 is displayed.

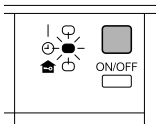
⊙▸○ blinks.

2. Press “TIMER Setting button” until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press “OFF TIMER button” again.

- The TIMER lamp lights up.



■ To cancel the OFF TIMER Operation

4. Press “CANCEL button”.

- The TIMER lamp goes off.

NOTE

- When TIMER is set, the present time is not displayed.
- Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is canceled when remote controller batteries are replaced.)
- When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered by the user. (Maximum approx. 10 minutes)

■ NIGHT SET MODE

When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (0.5°C up in COOL) to prevent excessive cooling for your pleasant sleep.

■ To use ON TIMER operation

- Check that the clock is correct. If not, set the clock to the present time. (page 9.)

1. Press “ON TIMER button”.

6:00 is displayed.

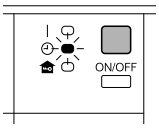
blinks.

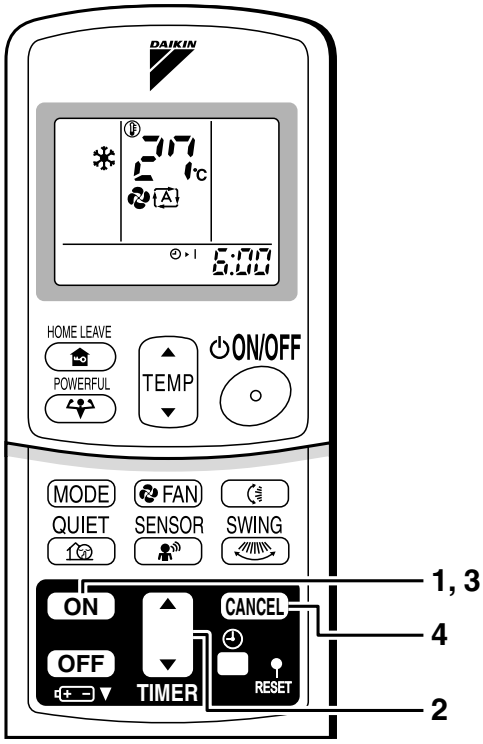
2. Press “TIMER Setting button” until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press “ON TIMER button” again.

- The TIMER lamp lights up.





■ To cancel ON TIMER operation

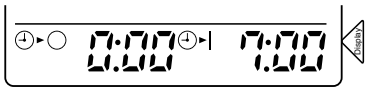
4. Press “CANCEL button”.

- The TIMER lamp goes off.

■ To combine ON TIMER and OFF TIMER

- A sample setting for combining the two timers is shown below.

(Example)
Present time: 11:00 p.m.
(The unit operating)
OFF TIMER at 0:00 a.m.
ON TIMER at 7:00 a.m.
Combined



ATTENTION

■ **In the following cases, set the timer again.**

- After a breaker has turned OFF.
- After a power failure.
- After replacing batteries in the remote controller.

Care and Cleaning

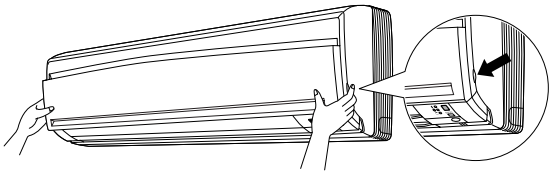
⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

■ Front panel

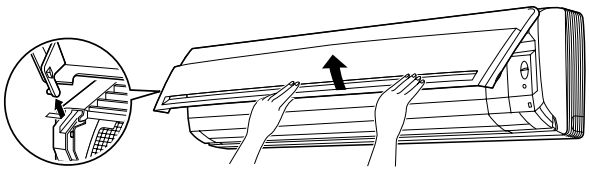


1. Open the front panel.

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.

2. Remove the front panel.

- Open the front panel further while sliding it to either the left or right and pulling it toward you. This will disconnect the rotation dowel on one side. Then disconnect the rotation dowel on the other side in the same manner.

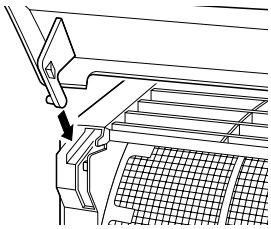


3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front panel.

- Align the rotation dowels on the left and right of the front panel with the slots, then push them all the way in.
- Close the front panel slowly. (Press the panel at both sides and the center.)

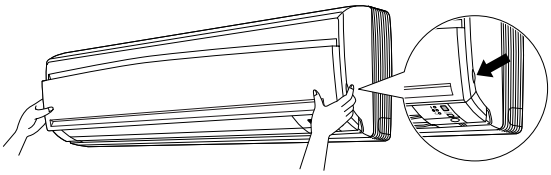


⚠ CAUTION

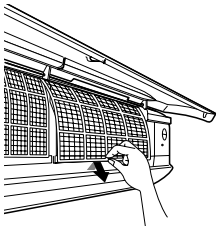
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

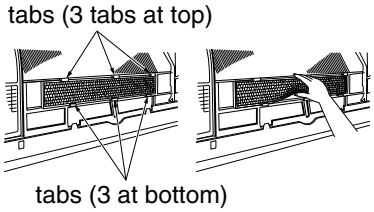
Filters

1. **Open the front panel. (page 24.)**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.

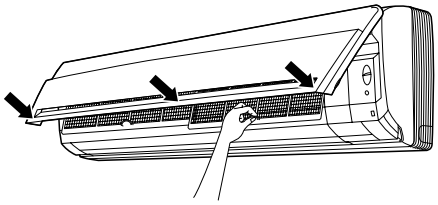


3. **Take off the Titanium Apatite Photocatalytic Air-Purifying Filter.**
   - Press the top of the air-cleaning filter onto the tabs (3 tabs at top). Then press the bottom of the filter up slightly, and press it onto the tabs (3 at bottom).



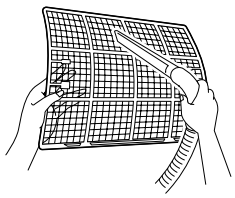


4. **Clean or replace each filter.**
   See figure.
5. **Set the air filter and the Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.**
   - Press the front panel at both sides and the center.



■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Titanium Apatite Photocatalytic Air-purifying Filter

The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **After washing, shake off remaining water and dry in the shade.**
4. **Since the material is made out of polyester, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as non-flammable waste.

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor cooling. (4) may cause odour.
- To order Titanium Apatite Photocatalytic Air-Purifying Filter contact to the service shop there you bought the air conditioner.
- Dispose of old filters as non-flammable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter (without frame) 1 set	KAF952B42

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. **Operate the "FAN only" for several hours on a fine day to dry out the inside.**
   - Press "MODE" button and select "FAN" operation.
   - Press "ON/OFF" button and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote controller.**

Trouble Shooting

These cases are not troubles.

The following cases are not air conditioner troubles but have some reasons. You may just continue using it.

Case	Explanation
Operation does not start soon. • When ON/OFF button was pressed soon after operation was stopped. • When the mode was reselected.	• This is to protect the air conditioner. You should wait for about 3 minutes.
The outdoor unit emits water or steam.	■ In COOL or DRY mode • Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mist comes out of the indoor unit.	■ This happens when the air in the room is cooled into mist by the cold air flow during cooling operation. ■ This is because the air in the room is cooled by the heat exchanger and becomes mist during defrost operation.
The indoor unit gives out odour.	■ This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the air flow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult the service shop where you bought the air conditioner.)
The outdoor fan rotates while the air conditioner is not in operation.	■ After operation is stopped: • The outdoor fan continues rotating for another 60 seconds for system protection. ■ While the air conditioner is not in operation: • When the outdoor temperature is very high, the outdoor fan starts rotating for system protection.
The operation stopped suddenly. **(OPERATION lamp is on.)**	■ For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.

Check again.

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off.)	• Hasn't a breaker turned OFF or a fuse blown? • Isn't it a power failure? • Are batteries set in the remote controller? • Is the timer setting correct?
Cooling effect is poor.	• Are the air filters clean? • Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? • Is the temperature setting appropriate? • Are the windows and doors closed? • Are the air flow rate and the air direction set appropriately?
Operation stops suddenly. (OPERATION lamp flashes.)	• Are the air filters clean? • Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? Clean the air filters or take all obstacles away and turn the breaker OFF. Then turn it ON again and try operating the air conditioner with the remote controller. If the lamp still blinks, call the service shop where you bought the air conditioner.
An abnormal functioning happens during operation.	• The air conditioner may malfunction with lightning or radio waves. Turn the breaker OFF, turn it ON again and try operating the air conditioner with the remote controller.

Call the service shop immediately.

⚠ WARNING

■ When an abnormality (such as a burning smell) occurs, stop operation and turn the breaker OFF.
Continued operation in an abnormal condition may result in troubles, electric shocks or fire.
Consult the service shop where you bought the air conditioner.

■ Do not attempt to repair or modify the air conditioner by yourself.
Incorrect work may result in electric shocks or fire.
Consult the service shop where you bought the air conditioner.

If one of the following symptoms takes place, call the service shop immediately.

■ **The power cord is abnormally hot or damaged.** ■ **An abnormal sound is heard during operation.** ■ **The safety breaker, a fuse, or the earth leakage breaker cuts off the operation frequently.** ■ **A switch or a button often fails to work properly.** ■ **There is a burning smell.** ■ **Water leaks from the indoor unit.**	▶ Turn the breaker OFF and call the service shop.

■ After a power failure The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.	■ Lightning If lightning may strike the neighboring area, stop operation and turn the breaker OFF for system protection.

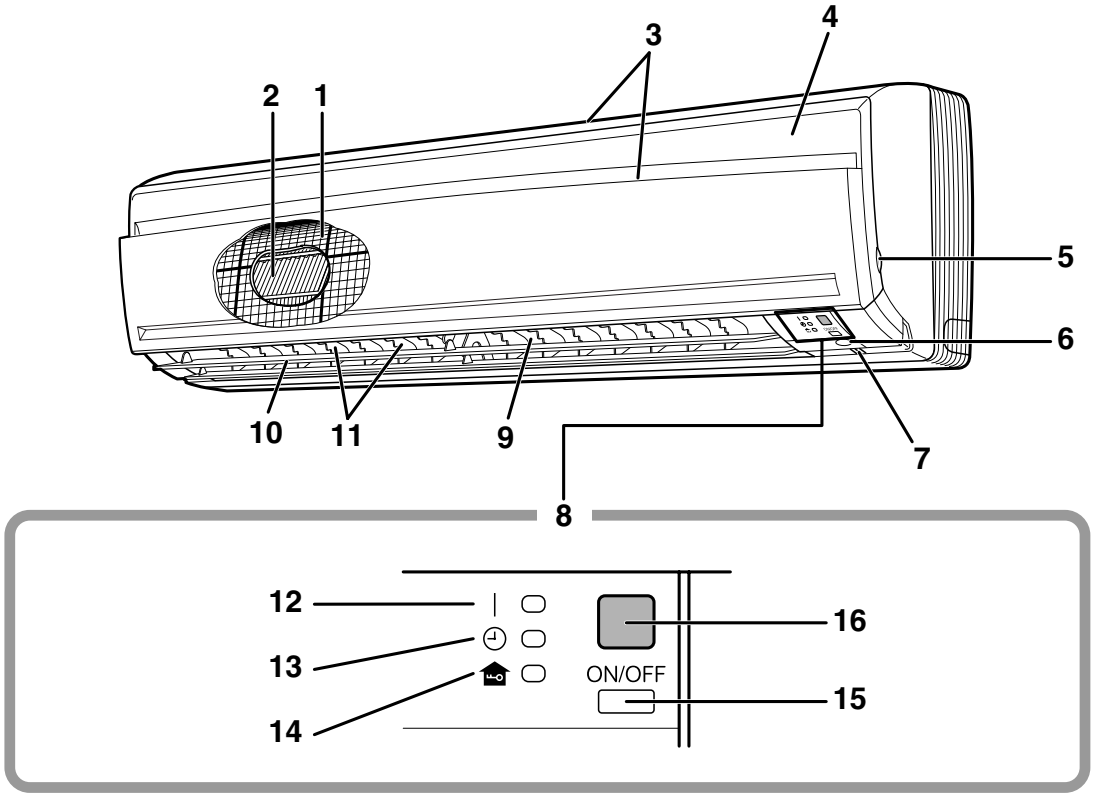
We recommend periodical maintenance.

In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact the service shop where you bought the air conditioner.
The maintenance cost must be born by the user.

13.3 FTXS 50/60/71 F

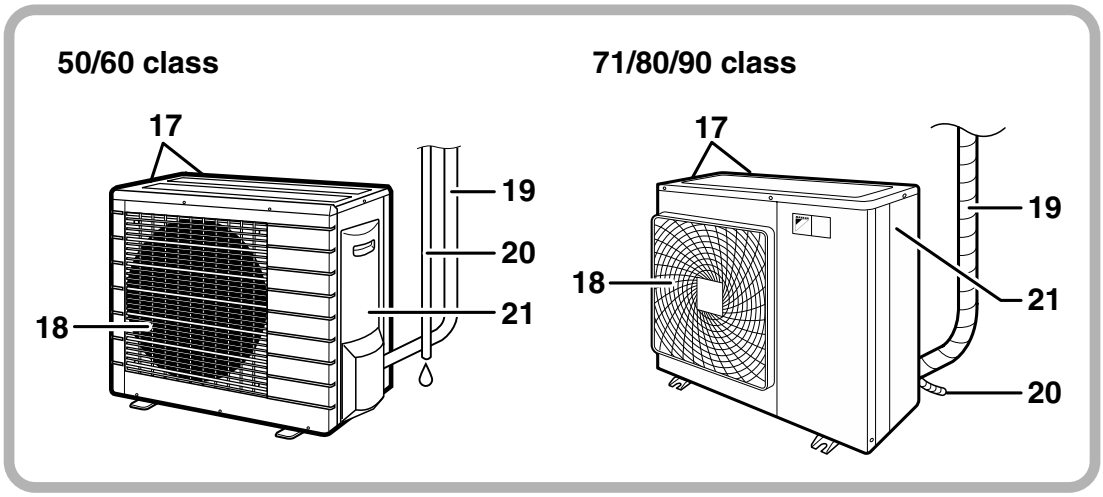
Names of parts

■ Indoor Unit



4

■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Titanium Apatite Photocatalytic Air-Purifying Filter**
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation. (page 18.)
7. **Room temperature sensor:**
   - It senses the air temperature around the unit.
8. **Display**
9. **Air outlet**
10. **Flap (horizontal blade):** (page 12.)
11. **Louvers (vertical blades):**
    - The Louvers are inside of the air outlet. (page 12.)
12. **Operation lamp (green)**
13. **TIMER lamp (yellow):** (page 20.)
14. **HOME LEAVE lamp (red):**
    - Lights up when you use HOME LEAVE Operation. (page 16.)
15. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refer to the following table.

	Mode	Temperature setting	Air flow rate
FTKS	COOL	22°C	AUTO
FTXS	AUTO	25°C	AUTO

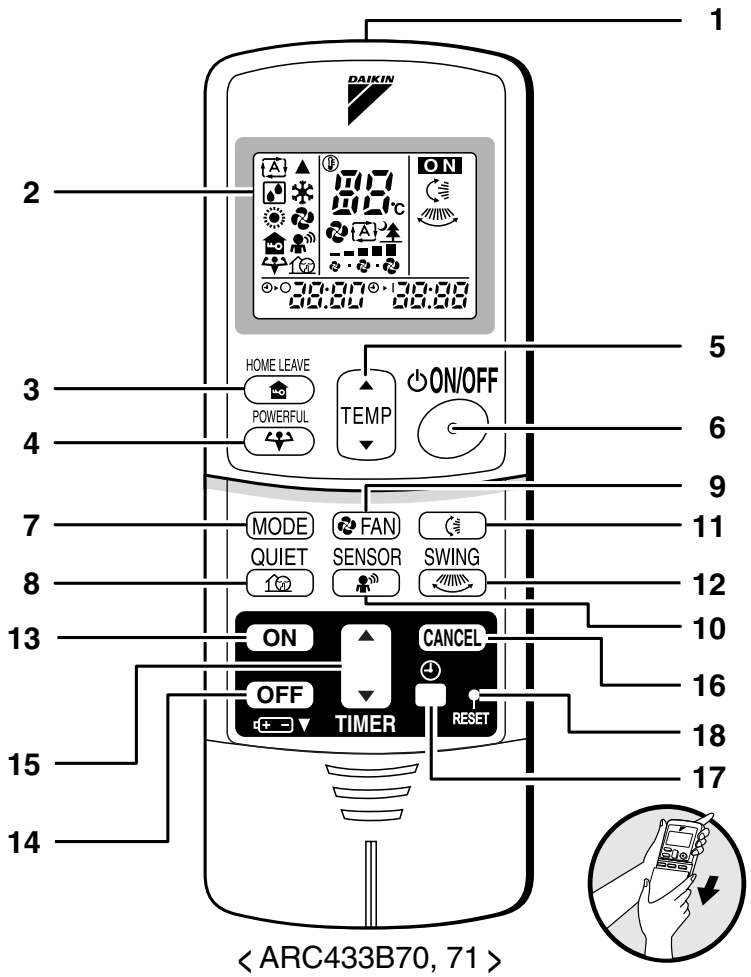
    - This switch is useful when the remote controller is missing.
16. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**
20. **Drain hose**
21. **Earth terminal:**
    - It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



< ARC433B70, 71 >

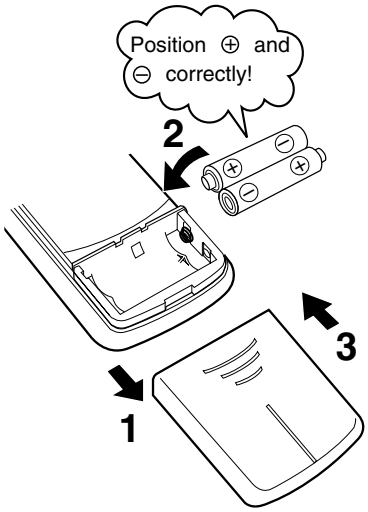
1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:** HOME LEAVE operation (page 16.)
4. **POWERFUL button:** POWERFUL operation (page 14.)
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN) (page 10.)
8. **QUIET button:** OUTDOOR UNIT QUIET operation (page 15.)
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SENSOR button:** INTELLIGENT EYE operation (page 18.)
11. **SWING button:** (page 12.)
    - Flap (Horizontal blade)
12. **SWING button:** (page 12.)
    - Louver (Vertical blades)
13. **ON TIMER button:** (page 21.)
14. **OFF TIMER button:** (page 20.)
15. **TIMER Setting button:**
    - It changes the time setting.
16. **TIMER CANCEL button:**
    - It cancels the timer setting.
17. **CLOCK button:** (page 9.)
18. **RESET button:**
    - Restart the unit if it freezes.
    - Use a thin object to push.

6

Preparation Before Operation

■ To set the batteries

1. **Slide the front cover to take it off.**
2. **Set two dry batteries (AAA).**
3. **Set the front cover as before.**



ATTENTION

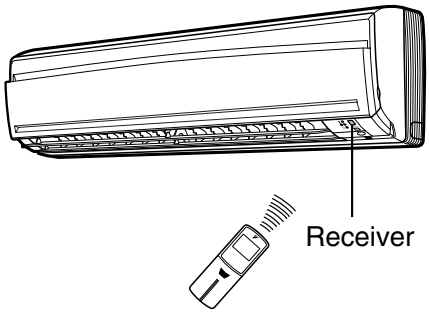
■ **About batteries**

- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out.
- We recommend replacing once a year, although if the remote controller display begins to fade or if reception deteriorates, please replace with new alkali batteries. Using manganese batteries reduces the lifespan.
- The attached batteries are provided for the initial use of the system.
  The usable period of the batteries may be short depending on the manufactured date of the air conditioner.

Preparation Before Operation

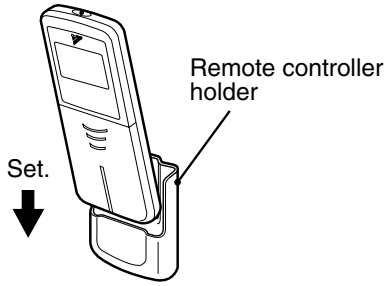
■ To operate the remote controller

- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is about 7m.



■ To fix the remote controller holder on the wall

1. **Choose a place from where the signals reach the unit.**
2. **Fix the holder to a wall, a pillar, etc. with the screws supplied with the holder.**
3. **Place the remote controller in the remote controller holder.**



• To remove, pull it upwards.

ATTENTION

■ **About remote controller**

- Never expose the remote controller to direct sunlight.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult the shop if that is the case.
- If the remote controller signals happen to operate another appliance, move that appliance to somewhere else, or consult the shop.

■ To set the clock

1. **Press “CLOCK button”.**

   0:00 is displayed.

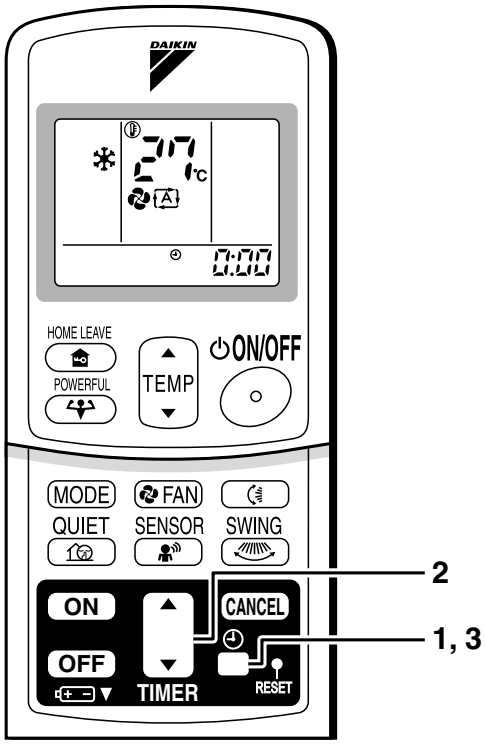
   blinks.

2. **Press “TIMER setting button” to set the clock to the present time.**

   Holding down “▲” or “▼” button rapidly increases or decreases the time display.

3. **Press “CLOCK button”.**

   : blinks.



■ Turn the breaker ON

- Turning ON the breaker opens the flap, then closes it again. (This is a normal procedure.)

NOTE

■ Tips for saving energy

- Be careful not to cool (heat) the room too much.
  Keeping the temperature setting at a moderate level helps save energy.
- Cover windows with a blind or a curtain.
  Blocking sunlight and air from outdoors increases the cooling (heating) effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once in about every two weeks.

Recommended temperature setting
For cooling:26°C – 28°C For heating:20°C – 24°C

■ Please note

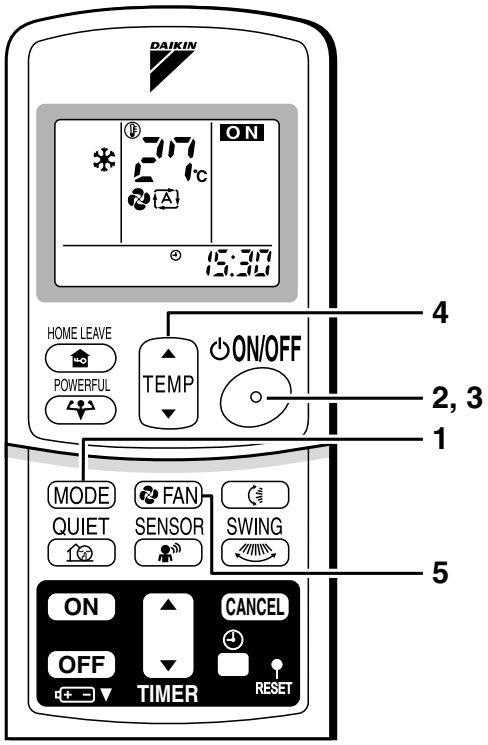
- The air conditioner always consumes 15-35 watts of electricity even while it is not operating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker OFF.
- Use the air conditioner in the following conditions.

Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature:10 to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	• A safety device may work to stop the operation. (In multi system, it may work to stop the operation of the outdoor unit only.) • Condensation may occur on the indoor unit and drip.
HEAT	Outdoor temperature:–15 to 24°C Indoor temperature: 10 to 30°C	• A safety device may work to stop the operation.
DRY	Outdoor temperature:10 to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.

- Operation outside this humidity or temperature range may cause a safety device to disable the system.

AUTO · DRY · COOL · HEAT · FAN Operation

The air conditioner operates with the operation mode of your choice.
From the next time on, the air conditioner will operate with the same operation mode.



■ To start operation

1. Press “MODE selector button” and select a operation mode.

- Each pressing of the button advances the mode setting in sequence.

: AUTO

: DRY

: COOL

: HEAT

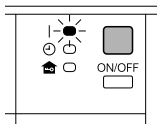
: FAN

<FTKS>

<FTXS>

2. Press “ON/OFF button”.

- The OPERATION lamp lights up.



■ To stop operation

3. Press “ON/OFF button” again.

- Then OPERATION lamp goes off.

■ To change the temperature setting

4. Press “TEMPERATURE adjustment button”.

DRY or FAN mode	AUTO or COOL or HEAT mode
The temperature setting is not variable.	Press “ ▲ ” to raise the temperature and press “ ▼ ” to lower the temperature.
	Set to the temperature you like. 

■ To change the air flow rate setting

5. Press “FAN setting button”.

DRY mode	AUTO or HEAT or COOL or FAN mode
The air flow rate setting is not variable.	Five levels of air flow rate setting from “ ” to “ ” plus “ ” “ ” are available. 

- Indoor unit quiet operation

  When the air flow is set to “ ”, the noise from the indoor unit will become quieter. Use this when making the noise quieter.

  The unit might lose capacity when the air flow rate is set to a weak level.

NOTE

■ **Note on HEAT operation**
- Since this air conditioner heats the room by taking heat from outdoor air to indoors, the heating capacity becomes smaller in lower outdoor temperatures. If the heating effect is insufficient, it is recommended to use another heating appliance in combination with the air conditioner.
- The heat pump system heats the room by circulating hot air around all parts of the room. After the start of heating operation, it takes some time before the room gets warmer.
- In heating operation, frost may occur on the outdoor unit and lower the heating capacity. In that case, the system switches into defrosting operation to take away the frost.
- During defrosting operation, hot air does not flow out of indoor unit.

■ **Note on COOL operation**
- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, performance drops.

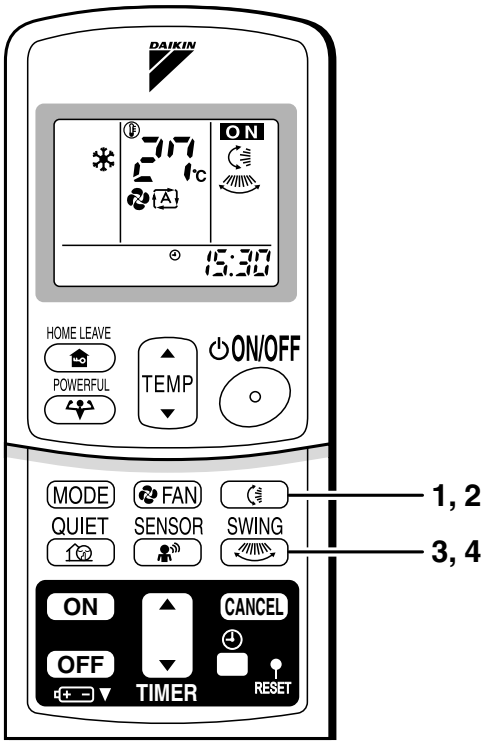
■ **Note on DRY operation**
- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

■ **Note on AUTO operation**
- In AUTO operation, the system selects a temperature setting and an appropriate operation mode (COOL or HEAT) based on the room temperature at the start of the operation.
- The system automatically reselects setting at a regular interval to bring the room temperature to user-setting level.
- If you do not like AUTO operation, you can manually select the operation mode and setting you like.

■ **Note on air flow rate setting**
- At smaller air flow rates, the cooling (heating) effect is also smaller.

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.



■ To adjust the horizontal blade (flap)

1. **Press "SWING button".**
   - "" is displayed on the LCD and the flaps will begin to swing.
2. **When the flap has reached the desired position, press "SWING button" once more.**
   - The flap will stop moving.
   - "" disappears from the LCD.

■ To adjust the vertical blades (louvers)

3. **Press "SWING button".**
   - "" is displayed on the LCD.
4. **When the louvers have reached the desired position, press the "SWING button" once more.**
   - The louvers will stop moving.
   - "" disappears from the LCD.

■ To 3-D Airflow

1. 3. Press the "SWING button" and the "SWING button": the "" and "" display will light up and the flap and louvers will move in turn.

■ To cancel 3-D Airflow

2. 4. Press either the "SWING button" or the "SWING button".

Notes on louvers angles

■ **ATTENTION**

- Always use a remote controller to adjust the louvers angles. In side the air outlet, a fan is rotating at a high speed.

Notes on flap angle

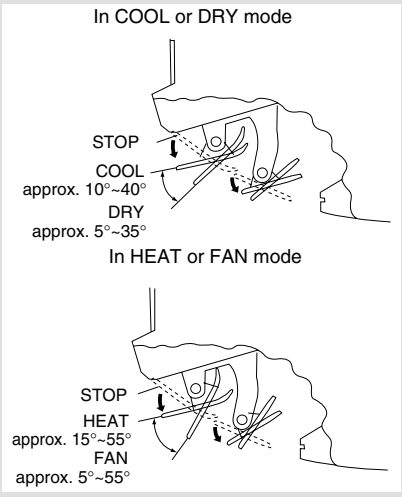
- When "**SWING button**" is selected, the flaps swinging range depends on the operation mode. (See the figure.)

Three-Dimensional (3-D) Airflow

- Using three-dimensional airflow circulates cold air, which tends to collected at the bottom of the room, and hot air, which tends to collect near the ceiling, throughout the room, preventing areas of cold and hot developing.

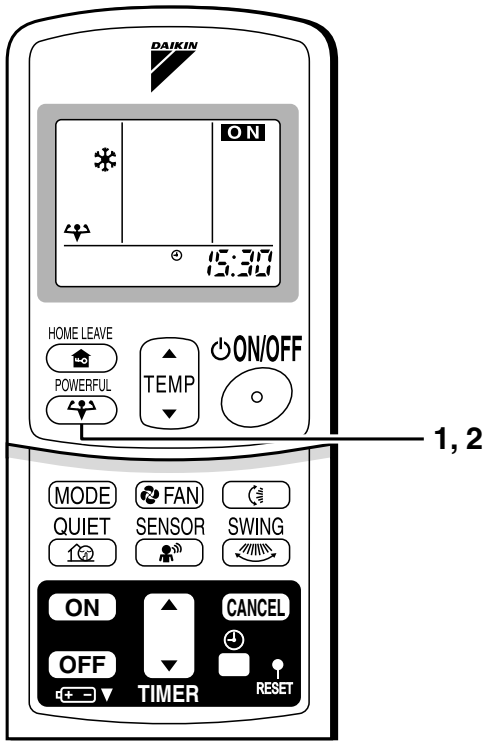
■ **ATTENTION**

- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, fan is rotating at a high speed.



POWERFUL Operation

POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode. You can get the maximum capacity.



■ To start POWERFUL operation

1. **Press "POWERFUL button".**
   - POWERFUL operation ends in 20 minutes. Then the system automatically operates again with the settings which were used before POWERFUL operation.
   - When using Powerful operation, there are some functions which are not available.
   - "" is displayed on the LCD.

■ To cancel POWERFUL operation

2. **Press "POWERFUL button" again.**
   - "" disappears from the LCD.

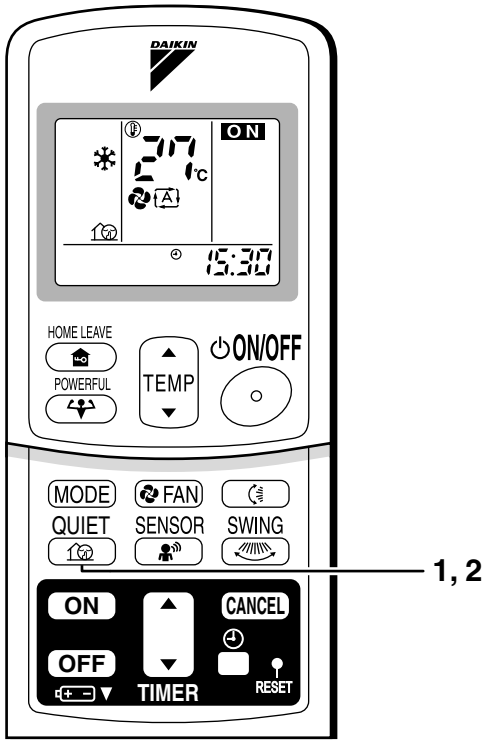
NOTE

■ **Notes on POWERFUL operation**

- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the "" disappears from the LCD. Priority is given to the function of whichever button is pressed last.
- **In COOL and HEAT mode**
  To maximize the cooling (heating) effect, the capacity of outdoor unit must be increased and the air flow rate be fixed to the maximum setting.
  The temperature and air flow settings are not variable.
- **In DRY mode**
  The temperature setting is lowered by 2.5°C and the air flow rate is slightly increased.
- **In FAN mode**
  The air flow rate is fixed to the maximum setting.

OUTDOOR UNIT QUIET Operation

OUTDOOR UNIT QUIET operation lowers the noise level of the outdoor unit by changing the frequency and fan speed on the outdoor unit. This function is convenient during night.



■ To start OUTDOOR UNIT QUIET operation

1. **Press “QUIET button”.**
   - “ ” is displayed on the LCD.

■ To cancel OUTDOOR UNIT QUIET operation

2. **Press “QUIET button” again.**
   - “ ” disappears from the LCD.

NOTE

■ **Note on OUTDOOR UNIT QUIET operation**

- This function is available in COOL, HEAT, and AUTO modes. (This is not available in FAN and DRY mode.)
- POWERFUL operation and OUTDOOR UNIT QUIET operation cannot be used at the same time. Priority is given to the function of whichever button is pressed last.
- If operation is stopped using the remote controller or the main unit ON/OFF switch when using OUTDOOR UNIT QUIET operation, “ ” will remain on the remote controller display.

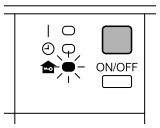
HOME LEAVE Operation

HOME LEAVE operation is a function which allows you to record your preferred temperature and air flow rate settings.

■ To start HOME LEAVE operation

1. Press “HOME LEAVE button”.

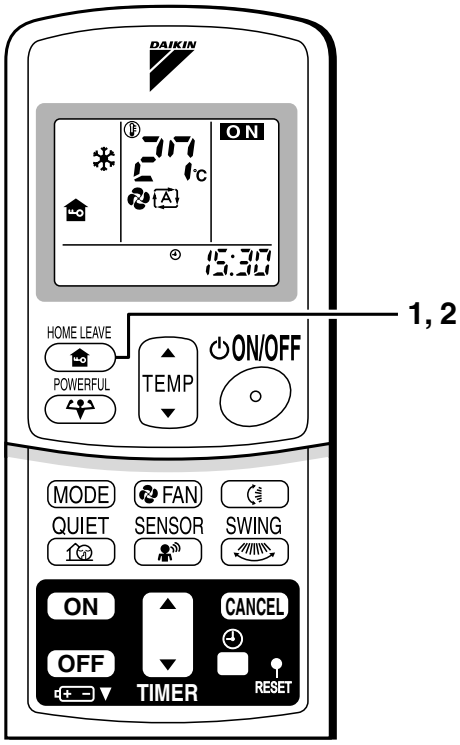
- “ ” is displayed on the LCD.
- The HOME LEAVE lamp lights up.



■ To cancel HOME LEAVE operation

2. Press “HOME LEAVE button” again.

- “ ” disappears from the LCD.
- The HOME LEAVE lamp goes off.



Before using HOME LEAVE operation.

■ **To set the temperature and air flow rate for HOME LEAVE operation**

When using HOME LEAVE operation for the first time, please set the temperature and air flow rate for HOME LEAVE operation. Record your preferred temperature and air flow rate.

	Initial setting		Selectable range	
	temperature	Air flow rate	temperature	Air flow rate
Cooling	25°C	“ A ”	18-32°C	5 step, “ A ” and “ ”
Heating	25°C	“ A ”	10-30°C	5 step, “ A ” and “ ”

1. Press “HOME LEAVE button”. Make sure “ ” is displayed in the remote controller display.

2. Adjust the set temperature with “ ▲ ” or “ ▼ ” as you like.

3. Adjust the air flow rate with “FAN” setting button as you like.

Home leave operation will run with these settings the next time you use the unit. To change the recorded information, repeat steps 1 – 3.

16

■ What's the HOME LEAVE operation?

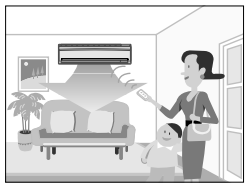
Is there a set temperature and air flow rate which is most comfortable, a set temperature and air flow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and air flow rate. You can start your favorite operation mode simply by pressing the HOME LEAVE button on the remote controller. This function is convenient in the following situations.

■ Useful in these cases

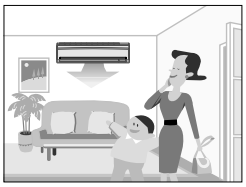
1.Use as an energy-saving mode.

Set the temperature 2-3°C higher (cooling) or lower (heating) than normal. Setting the fan strength to the lowest setting allows the unit to be used in energy-saving mode. Also convenient for use while you are out or sleeping.

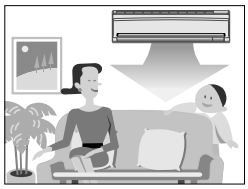
- **Every day before you leave the house...**



When you go out, push the "HOME LEAVE Operation" button, and the air conditioner will adjust capacity to reach the preset temperature for HOME LEAVE Operation.

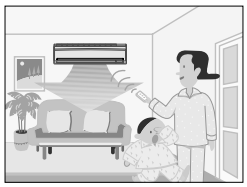


When you return, you will be welcomed by a comfortably air conditioned room.

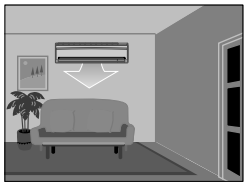


Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

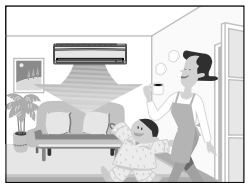
- **Before bed...**



Set the unit to HOME LEAVE Operation before leaving the living room when going to bed.



The unit will maintain the temperature in the room at a comfortable level while you sleep.



When you enter the living room in the morning, the temperature will be just right. Disengaging HOME LEAVE Operation will return the temperature to that set for normal operation. Even the coldest winters will pose no problem!

2.Use as a favorite mode.

Once you record the temperature and air flow rate settings you most often use, you can retrieve them by pressing HOME LEAVE button. You do not have to go through troublesome remote controller operations.

NOTE

- Once the temperature and air flow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL and HEAT mode. Cannot be used in AUTO, DRY, and FAN mode.
- HOME LEAVE operation runs in accordance with the previous operation mode (COOL or HEAT) before using HOME LEAVE operation.
- HOME LEAVE operation and POWERFUL operation cannot be used at the same time. Last button that was pressed has priority.
- The operation mode cannot be changed while HOME LEAVE operation is being used.
- When operation is shut off during HOME LEAVE operation, using the remote controller or the indoor unit ON/OFF switch, " " will remain on the remote controller display.

INTELLIGENT EYE Operation

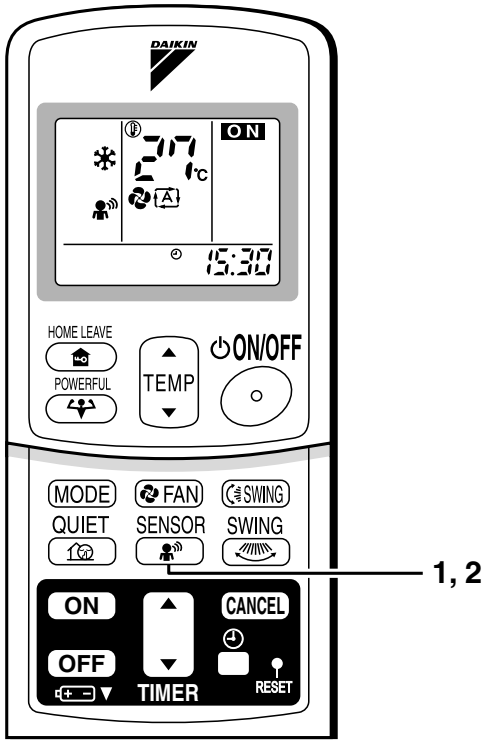
"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

■ To start INTELLIGENT EYE operation

1. **Press "SENSOR button".**
   - "" is displayed on the LCD.

■ To cancel the INTELLIGENT EYE operation

2. **Press "SENSOR button" again.**
   - "" disappears from the LCD.



[EX.]

When somebody in the room
- **Normal operation**

⇩

When nobody in the room
- **20 min. after, start energy saving operation.**

⇩

Somebody back in the room
- **Back to normal operation.**

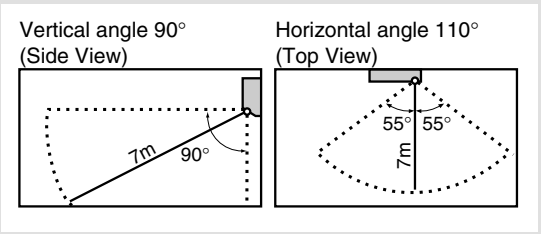
18

“INTELLIGENT EYE” is useful for Energy Saving.

■ **Energy saving operation**
- Change the temperature –2°C in heating / +2°C in cooling / +1°C in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on “INTELLIGENT EYE”

- Application range is as follows.



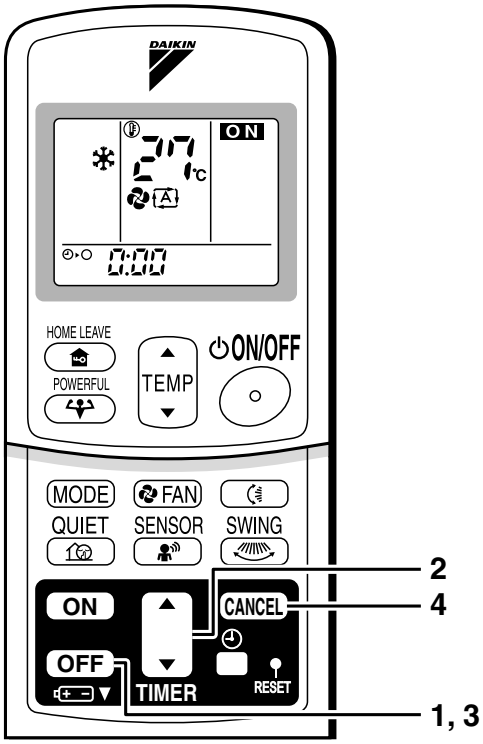
- Sensor may not detect moving objects further than 7m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode (page 20.) will not go on during you use INTELLIGENT EYE operation.

⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect objects it shouldn’t as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

TIMER Operation

Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning. You can also use OFF TIMER and ON TIMER in combination.



■ To use OFF TIMER operation

- Check that the clock is correct. If not, set the clock to the present time. (page 9.)

1. Press “OFF TIMER button”.

0:00 is displayed.

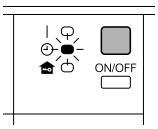
⊙▸○ blinks.

2. Press “TIMER Setting button” until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press “OFF TIMER button” again.

- The TIMER lamp lights up.



■ To cancel the OFF TIMER Operation

4. Press “CANCEL button”.

- The TIMER lamp goes off.

NOTE

- When TIMER is set, the present time is not displayed.
- Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is canceled when remote controller batteries are replaced.)
- When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered by the user. (Maximum approx. 10 minutes)

■ **NIGHT SET MODE**

When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (0.5°C up in COOL, 2.0°C down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

■ To use ON TIMER operation

- Check that the clock is correct. If not, set the clock to the present time (page 9.).

1. Press “ON TIMER button”.

6:00 is displayed.

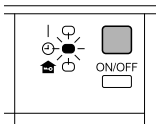
blinks.

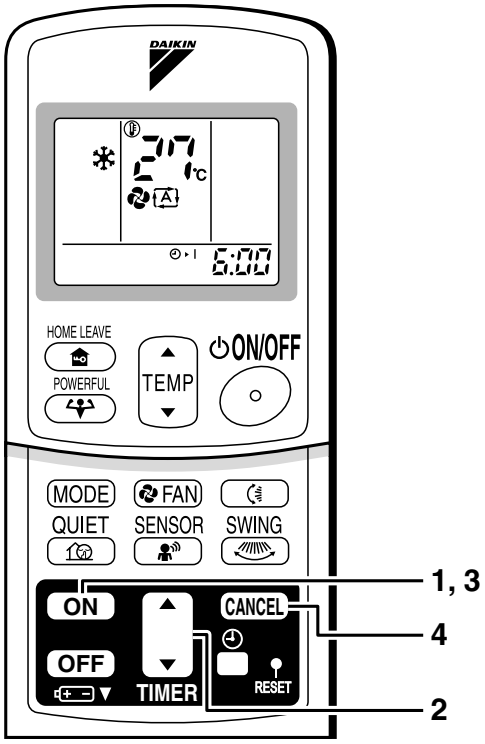
2. Press “TIMER Setting button” until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press “ON TIMER button” again.

- The TIMER lamp lights up.





■ To cancel ON TIMER operation

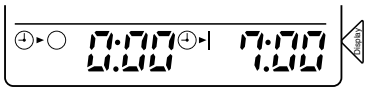
4. Press “CANCEL button”.

- The TIMER lamp goes off.

■ To combine ON TIMER and OFF TIMER

- A sample setting for combining the two timers is shown below.

(Example)
Present time: 11:00 p.m.
(The unit operating)
OFF TIMER at 0:00 a.m.) Combined
ON TIMER at 7:00 a.m.)

➡ 

ATTENTION

■ **In the following cases, set the timer again.**

- After a breaker has turned OFF.
- After a power failure.
- After replacing batteries in the remote controller.

Care and Cleaning

⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

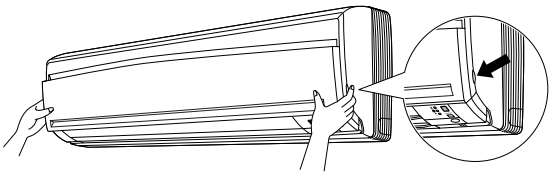
■ Indoor unit, outdoor unit and remote controller

1. Wipe them with dry soft cloth.

■ Front panel

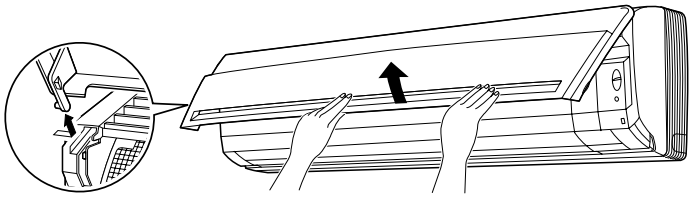
1. Open the front panel.

- Hold the panel by the tabs on the two sides and lift it until it stops with a click.



2. Remove the front panel.

- Open the front panel further while sliding it to either the left or right and pulling it toward you. This will disconnect the rotation dowel on one side. Then disconnect the rotation dowel on the other side in the same manner.

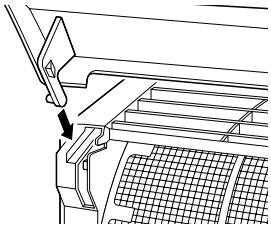


3. Clean the front panel.

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front panel.

- Align the rotation dowels on the left and right of the front panel with the slots, then push them all the way in.
- Close the front panel slowly. (Press the panel at both sides and the center.)

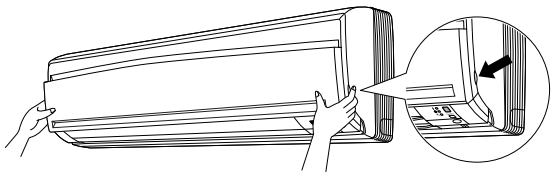


⚠ CAUTION

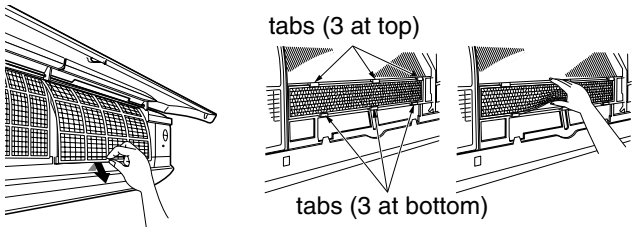
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40°C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

Filters

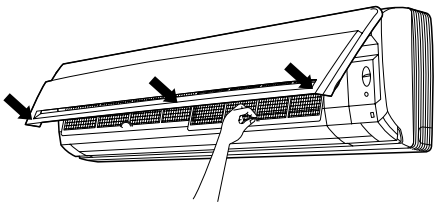
1. **Open the front panel. (page 24.)**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.



3. **Take off the Titanium Apatite Photocatalytic Air-Purifying Filter.**
   - Press the top of the air-cleaning filter onto the tabs (3 at top). Then press the bottom of the filter up slightly, and press it onto the tabs (3 at bottom).

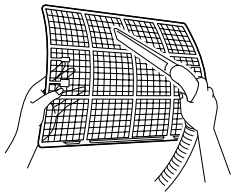


4. **Clean or replace each filter.**
   See figure.
5. **Set the air filter and the Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.**
   - Press the front panel at both sides and the center.



■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Titanium Apatite Photocatalytic Air-purifying Filter

The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **After washing, shake off remaining water and dry in the shade.**
4. **Since the material is made out of polyester, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as non-flammable waste.

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odour.
- To order Titanium Apatite Photocatalytic Air-Purifying Filter contact to the service shop there you bought the air conditioner.
- Dispose of old filters as non-flammable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter. (without frame) 1 set	KAF952B42

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. **Operate the "FAN only" for several hours on a fine day to dry out the inside.**
   - Press "MODE button" and select "FAN" operation.
   - Press "ON/OFF button" and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote controller.**

Trouble Shooting

These cases are not troubles.

The following cases are not air conditioner troubles but have some reasons. You may just continue using it.

Case	Explanation
Operation does not start soon. • When ON/OFF button was pressed soon after operation was stopped. • When the mode was reselected.	• This is to protect the air conditioner. You should wait for about 3 minutes.
Hot air does not flow out soon after the start of heating operation.	• The air conditioner is warming up. You should wait for 1 to 4 minutes. (The system is designed to start discharging air only after it has reached a certain temperature.)
The heating operation stops suddenly and a flowing sound is heard.	• The system is taking away the frost on the outdoor unit. You should wait for about 4 to 12 minutes.
The outdoor unit emits water or steam.	■ In HEAT mode • The frost on the outdoor unit melts into water or steam when the air conditioner is in defrost operation. ■ In COOL or DRY mode • Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mist comes out of the indoor unit.	■ This happens when the air in the room is cooled into mist by the cold air flow during cooling operation. ■ This is because the air in the room is cooled by the heat exchanger and becomes mist during defrost operation.
The indoor unit gives out odour.	■ This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the air flow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult the service shop where you bought the air conditioner.)
The outdoor fan rotates while the air conditioner is not in operation.	■ After operation is stopped: • The outdoor fan continues rotating for another 60 seconds for system protection. ■ While the air conditioner is not in operation: • When the outdoor temperature is very high, the outdoor fan starts rotating for system protection.
The operation stopped suddenly. (OPERATION lamp is on.)	■ For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.

Check again.

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off.)	• Hasn't a breaker turned OFF or a fuse blown? • Isn't it a power failure? • Are batteries set in the remote controller? • Is the timer setting correct?
Cooling (Heating) effect is poor.	• Are the air filters clean? • Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? • Is the temperature setting appropriate? • Are the windows and doors closed? • Are the air flow rate and the air direction set appropriately?
Operation stops suddenly. (OPERATION lamp flashes.)	• Are the air filters clean? • Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? Clean the air filters or take all obstacles away and turn the breaker OFF. Then turn it ON again and try operating the air conditioner with the remote controller. If the lamp still blinks, call the service shop where you bought the air conditioner.
An abnormal functioning happens during operation.	• The air conditioner may malfunction with lightning or radio waves. Turn the breaker OFF, turn it ON again and try operating the air conditioner with the remote controller.

Call the service shop immediately.

⚠ WARNING

- When an abnormality (such as a burning smell) occurs, stop operation and turn the breaker OFF.
  Continued operation in an abnormal condition may result in troubles, electric shocks or fire.
  Consult the service shop where you bought the air conditioner.
- Do not attempt to repair or modify the air conditioner by yourself.
  Incorrect work may result in electric shocks or fire.
  Consult the service shop where you bought the air conditioner.

If one of the following symptoms takes place, call the service shop immediately.

■ **The power cord is abnormally hot or damaged.** ■ **An abnormal sound is heard during operation.** ■ **The safety breaker, a fuse, or the earth leakage breaker cuts off the operation frequently.** ■ **A switch or a button often fails to work properly.** ■ **There is a burning smell.** ■ **Water leaks from the indoor unit.**	▶ Turn the breaker OFF and call the service shop.

■ After a power failure The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.	■ Lightning If lightning may strike the neighboring area, stop operation and turn the breaker OFF for system protection.

Disposal requirements

Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.

We recommend periodical maintenance.

In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact the service shop where you bought the air conditioner.
The maintenance cost must be born by the user.

14. Optional Accessories

14.1 Option List

	Option Name	Kit Name	Applicable Model
1	Centralized Control Board-Up to 5 Rooms ★1	KRC72	Indoor Unit
2	Wiring Adaptor for Time Clock / Remote Control ★2 (Normal Open Pulse Contact / Normal Open Contact)	KRP413A1S	Indoor Unit
3	Central Remote Controller ★1	DCS302C61	Indoor Unit
4	Unified ON/OFF Controller ★1	DCS301B61	Indoor Unit
5	Schedule Timer Controller ★1	DST301B61	Indoor Unit
6	Interface Adaptor for Room Air Conditioner	KRP928B2S	Indoor Unit
7	Titanium Apatite Photocatalytic Air-Purifying Filter	KAF952B42	Indoor Unit
8	The Remote Controller Loss Prevention with the Chain	KKF917A4	Indoor Unit
10	Drain Plug	KKP937A4	Outdoor Unit
11	Air Direction Adjustment Grille	KPW945A4	Outdoor Unit

Note: ★1 Wiring adaptor is also required for each indoor unit.
★2 Time clock and other devices ; obtained locally.

14.2 Installation Manual

14.2.1 KRP413A1S

Safety Precautions

- Read these safety precautions carefully before installing the unit, and be sure to install the unit properly.
- This manual classifies precautions to the user into the following two categories. These warnings and cautions are for your safety. Follow them.

⚠ WARNING	Faulty installation can result in death or serious injury
⚠ CAUTION	Faulty installation can result in serious injury or other serious consequences.

- Below is a key to symbols used in this manual.

❗	Be sure to follow instructions.
⏚	Be sure to perform grounding work.
⊘	Never attempt.

- After installation is complete, test the unit to confirm that it is working properly, and instruct the owner its proper use.

⚠ WARNING

- Installation should be left to the dealer from whom you purchased the unit, or another qualified professionals.
- Install the unit securely according to the installation manual. Faulty installation may lead to electric shock or fire.
- Be sure to use the supplied or specified parts. Using other parts may lead to electric shock or fire.
- Install the unit securely in a location that will support its weight. If installed in a poor location or improperly installed, the unit may not work as intended.
- For electrical work, follow local electric standards and the installation manual. Faulty installation may lead to fire or electric shock.
- Do not bundle the power cord, or attempt to extend it by splicing it with another cord or by using an extension cord. Do not place any other load on the power circuit used for the unit. Improper wiring may lead to electric shock, heat generation or fire.
- Use dedicated wiring for all electrical connections, and be sure to arrange the wiring so that force applied to the wiring will not damage the terminals. Poor wiring or installation may cause electric shock, heat generation or fire.

⚠ CAUTION

- Before installation, unplug the air conditioner to ensure safety. Failure to do so may cause electric shock.
- Static electricity may damage electric components. Before connecting cables and communication lines, and operating the switches, be sure to discharge any electrical charge from your body (by, for example, touching the earth line)
- Do not install the unit in a location where it may be exposed to flammable gases. If gas leaks and build up around the unit, it may catch fire.
- Do not place the wiring close to the power cord, inter-unit cable, or pipes which generate noise. Treat the wiring with care.

1. Functions and Features

- On/Off setting
- Switching between Instantaneous Contact/Normal Contact
- Connection with five-room central controller (KRC72 for oversea model)
- Connection with fan coil remote controller
- Automatic reset after power failure
- Output of normal operation signals/malfunction signals

2. Field Wiring

For interconnecting wiring, use Daikin KDC100A12 cable (not supplied) or other similar cable. The cable should have the specifications shown below.

■ Optional cable KDC100A12 (without connectors)

Specifications: 0.2 mm² × 4 core (sheathed)
Outer diameter: ϕ5.3
Length: 100 m
Colour: Grey

■ Other cable (commercially available)

Item	Outer dia.	Remarks
Cable for instrumentation (IPVV) 0.3 mm² × 4-core	7.2 mm	Hard sheath
Microphone cord (MVVS) 0.3 mm² × 4-core	8.0 mm	Shielded
Microphone cord (MVVS) 0.2 mm² × 4-core	6.5 mm	
Microphone cord (MVVS) 0.15 mm² × 4-core	4.8 mm	
Intercom cable 0.65 mm² dia. × 4-core		
PVC jumper wire (TJVC) (from 0.5 mm dia. × 4 pcs.)	—	Not sheathed

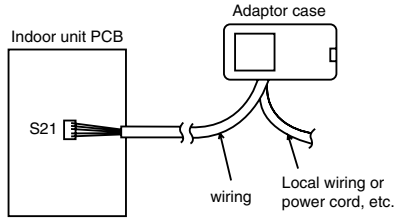
Note 1: Keep any wiring for the control unit away from the power cord to prevent electrical noise.
Note 2: Do not use cables shown above for power cord, inter-unit cord/cable or power cord for lamps.

Installation

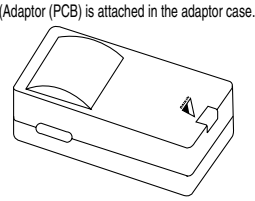
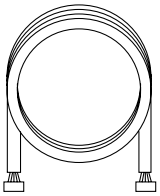
This product is available in two types. The **KRP413A1S · KRP413AA1S** is for installation in a case independent of the indoor unit, and the **KRP413A1** is for installation within the indoor unit.

1. KRP413A1S · KRP413AA1S

1 Installation diagram



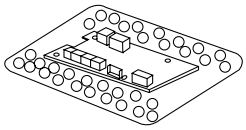
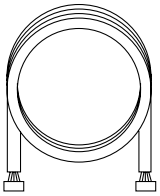
2 Components

① Adaptor case assy (Adaptor (PCB) is attached in the adaptor case.)	② Wiring (approx. 0.8 m)
	
③ Accessories • Binding band (4 pcs.) • Securing tape for attaching to the indoor unit (2 sets) • Screws for attaching the adaptor case (4 pcs.) • Screws for attaching to the wall (3 pcs.)	
④ Installation manual	

2. KRP413A1

For this type, install the adaptor PCB within the indoor unit. The method of installation and connection vary depending on the model of the air conditioner. See your air conditioner installation manual for details.

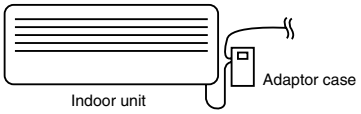
1 Components

① Adaptor PCB	② Wiring (approx. 0.25 m)
	
③ Installation manual	

3. Attaching Adaptor Case Assy (for KRP413A1S · KRP413AA1S)

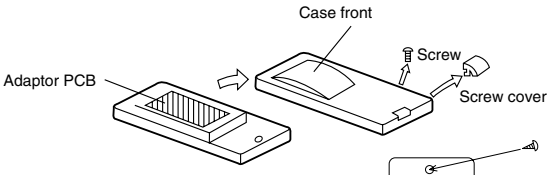
1 Using the screws (to mount on a wall, etc.)

● Use the 3 supplied screws to attach the case assy .



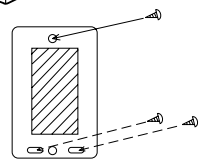
Install the adaptor case assy as close to the indoor unit as possible.

① Removing case front

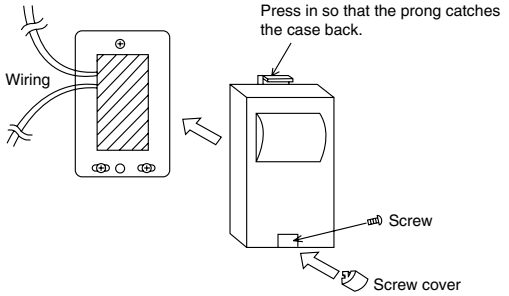


Remove the screw cover, one of the screws and then the case front.

② Attach the case back to the surface by tightening the screws through the screw holes (one round hole, two long holes).



③ After connecting the cables (refer to the following sections), replace the case front. Be careful not to damage the wiring in the case.



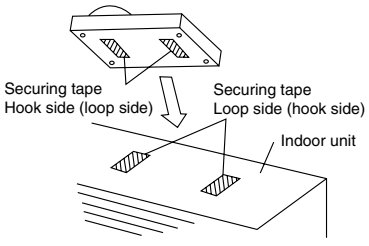
2 Using securing tape (to attach on the indoor unit)

● Attach the adaptor case with the supplied securing tape.

① Remove the case front (as for mounting on a wall).

② After connecting the cables (see the following sections), replace the case front. It can be screwed to the case back from the rear with the four supplied screws.
Be careful not to damage the wiring in the case.

③ Attach the hook side (loop side) of the included securing tape to the rear surface of the HA case, then attach the loop side (hook side) to the top of the air conditioner unit spaced at the same intervals.



To prevent the adaptor case assy from falling, do not use the securing tape for attaching it to a wall or other surface.

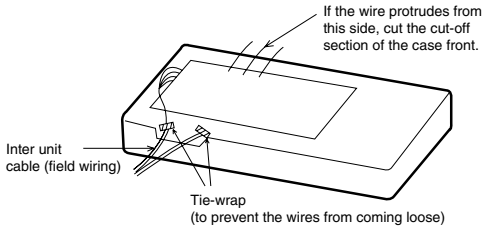
Wiring

1. Wiring

① Connect one end of the wiring to connector S21 of the PCB in the indoor unit.
② Connect the other end of the wiring to connector S6 of the adaptor PCB.
③ Connect field wiring according to the functions assigned to each connection terminal of the adaptor PCB.
④ Secure all wires.

1 Securing wires in the adaptor case assy (for KRP413A1S · KRP413AA1S)

- Fasten with a tie-wrap so that wires will not come loose even if pulled.



2 Securing wires in the indoor unit (for KRP413A1)

- The method for securing wire varies depending on the model of the air conditioner. See your air conditioner installation manual for details.

2. Automatic Reset After Power Failure

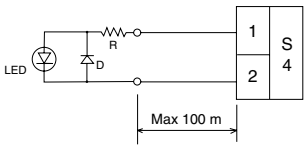
- This PCB stores the following data in the event of a power failure (common features).

① On/Off (see Note 1) ② Operation modes ③ Temperature setting
④ Air flow rate ⑤ On/Off status of remote controller
(Note 1 When SW1-2 is in Off mode, the unit will not be activated.)

3. Monitor Signal Output (normal operation and malfunction)

- Maximum length of the wiring is 100 m.

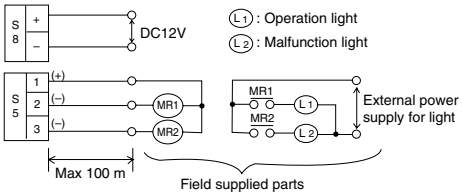
1 Monitor signal output for LED



■ **Locally procured parts**

Item	Manufacturer	Type
LED	Toshiba	TLG208 (green) TLR208 (red)
D	Rohm	1S2473
R		510 ohm 1/4W

2 Monitor signal output (normal operation and malfunction)using external relay contacts



■ **Field procured parts (Recommended external relay contacts)**

Manufacturer	Type	Coil rated voltage	Coil resistance
Omron	MY relay	12 V DC	160 ohm ± 10%
Matsushita	HC relay	12 V DC	160 ohm ± 10%

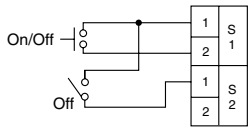
4. Connection with Remote Controller

Example connections with three kinds of remote controllers are shown bellow.
Note: These connections cannot be used in combination.

1 Generic remote controller

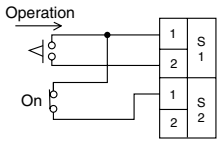
- Set SW1-1 to Off and select Operation Mode 1.

<Instantaneous Contact>



- The remote controller most recently used (local or air conditioner) takes precedence.
- Use a remote controller with a pulse width of 100 msec or more.

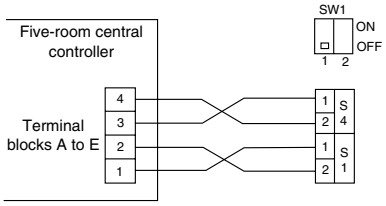
<Normal Contact>



- Power On/Off cannot be controlled from the unit's remote controller.
- When power is restored after a power failure in this mode, On or Off is determined according to the current settings of the remote controller.

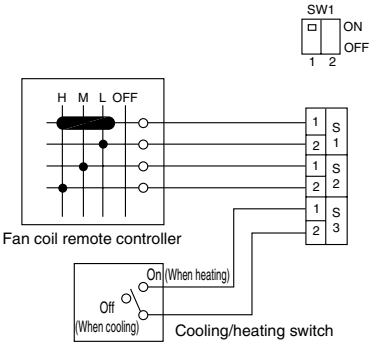
2 Five-room central controller (KRC72)

- Set SW1-1 to Off and select Operation Mode 1.
- The remote controller most recently used takes precedence.



3 Fan coil remote controller

- Set SW1-1 to On and select Operation Mode 2.
- Most settings (power On/Off, air flow rate, mode change) cannot be made using the air conditioner's remote controller.
- When power is restored after a power failure in this mode, On or Off is determined according to the current settings of the remote controller.
- When the Cooling /Heating mode is changed, use the air conditioner's remote controller to adjust the temperature.

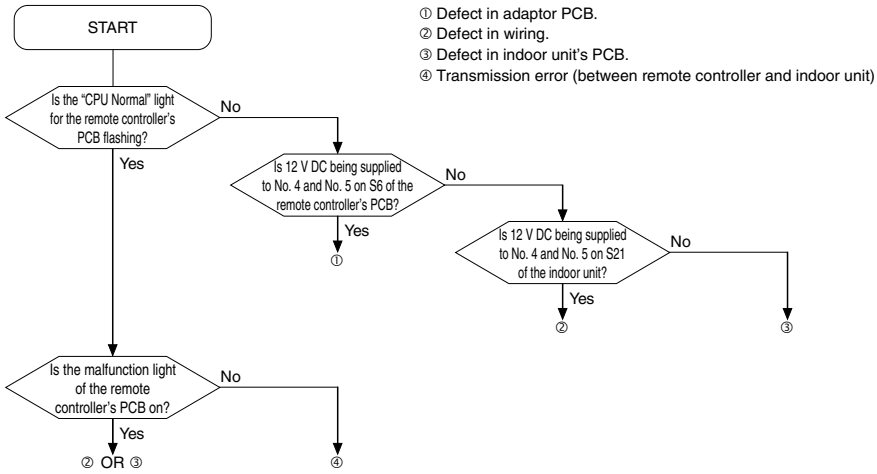


Test Operation and Confirmation

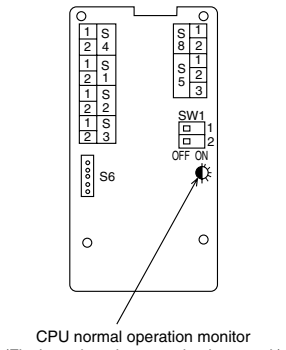
1. When the System is Not Working

☐ Is the air conditioner working properly?
☐ Are the connectors of the wiring properly connected?
☐ Are the remote controller and field wiring properly connected?
☐ Are all switch settings correct?
☐ If there is nothing apparently wrong, conduct a diagnostic check using the following procedure.

■ Diagnostic check



2. Switch Settings and Connection Terminals



CPU normal operation monitor
(Flashes when the operation is normal.)

SW1-1	Selecting the operation mode	OFF	Operation mode 1 (Used with the exception of fan coil remote controller settings)	
		ON	Operation mode 2 (Used with fan coil remote controller settings)	
SW1-2	Selecting On/Off when power is restored after a power failure	OFF	Always Off	
		ON	Off if operation was in Off mode before power failure; On if operation was in On mode before power failure	
S1 S2 S3	SW1-1: OFF (Operation mode 1)		Instantaneous contact	Normal contact
		S1 (1) - S2 (1)	OPEN	CLOSE
		S1 (1) - S1 (2)	Pulse input On/Off switching	OPEN, Not activated
				CLOSE, Activated
		S2 (2), S3	Not used	
	SW1-1: ON (Operation mode 2)	S1, S2 OPEN	Not activated	
		S1 (1) - S1 (2) CLOSE	On, airflow: L tap	
		S1 (1) - S2 (1) CLOSE	On, airflow: M tap	
		S1 (1) - S2 (2) CLOSE	On, airflow: H tap	
		S3 (With the remote controller only)	OPEN, Cooling	
			CLOSE, Heating	
S4	(1) - (2)	Voltage on (DC12 V), normal operation light output		
S5	(1) - (2)	Normal operation light output (power for light required)		
	(1) - (3)	Malfunction light output (power for light required)		
S6 connector		Connect with connector S21 on the PCB of the indoor unit		
S8	(+) - (–)	Relay DC 12 V power supply terminal (Field supplied parts)		

2P031616-1B

14.2.2 KRP928B2S

Safety Precautions

●Read these Safety Precautions carefully to ensure correct installation.
This manual classifies precautions into WARNING and CAUTION.

⚠**WARNING :** Failure to follow WARNING is very likely to result in such grave consequences as death or serious injury.

⚠**CAUTION :** Failure to follow CAUTION may result in serious injury or property damage, and in certain circumstances, may result in a grave consequence.

Be sure to follow all the precautions below ; they are all important for ensuring safety.

⚠ WARNING

- **Installation should be left to the dealer or another qualified professional.**
  Improper installation by yourself may cause malfunction, electrical shock, or fire.
- **Install the set according to the instructions given in this manual.**
  Incomplete or improper installation may cause malfunction, electrical shock, or fire.
- **Be sure to use the standard attachments or the genuine parts.**
  Use of other parts may cause malfunction, electrical shock, or fire.
- **Disconnect power to the connected equipment before starting installation.**
  Failure to do so may cause malfunction, electrical shock, or fire.

⚠ CAUTION

- **An earth leakage circuit breaker should be installed.**
  If the breaker is not installed, electrical shock may occur.
- **Do not install the set in a location where there is danger of exposure to inflammable gas.**
  Gas accumulated around the unit at the worst may cause fire.
- **To prevent damage due to electrostatic discharge, touch your hand to a nearby metal object (doorknob, aluminum sash, etc.) to discharge static electricity from your body before touching this kit.**
  Static electricity can damage this kit.
- **Lay this cable separately from other power cables to avoid external electrical noises.**

●After installation is complete, test the operation of the PCB set to check for problems, and explain how to use the set to the end-user.

1.Overview, Features and Compatible Models

This kit is the interface required when connecting the central controller and a Daikin Room Air Conditioner. Use of the central controller makes it possible to perform the following monitoring and operations. It is compatible with room air conditioners which have an HA connector S21.

1.Run / stop for the central controller and wired remote controller, operating mode selection, and temperature can be set.
2.The operating status, any errors, and the content of those errors can be monitored from the central controller and wired remote controller.
3.Run / stop for the central controller and wireless remote controller, operating mode selection, and the temperature setting can be limited by the central controller.
4.Zone control can be performed from the central controller.
5.The unit can remember the operating status of the air conditioner before a power outage and then start operating in the same status when the power comes back on.
6.Card keys, operating control panels, and other constant / instantaneous connection-compatible equipment can be connected.
7.The Operating / error signals can be read.
8.HA JEM-A-compatible equipment can be connected.
9.The indoor temperature can be monitored from the Ve-up controller.

Precaution
1.When reading the Operating / error signals, a separate external power source (DC 12V) is needed.
2.A separate timer power source (DC 16V) is needed when using the schedule timer independently, and not in conjunction with other central controllers.
3.The range of temperatures that can be set from the central controller is 18°C to 32°C in cooling and 14°C to 28°C in heating.
4.Fan operation cannot be selected from the central controller or wired remote controller.
5.Group control (i.e., control of multiple indoor units with a single remote controller) is not available.
6.Monitoring is not available of the thermo status, compressor operating status, indoor fan operating status, electric heater, or humidifier operating status.
7.Forced thermo off, filter sign display and reset, fan direction and speed settings, air conditioning fee management, energy savings instructions, low-noise instructions, and demand instructions cannot be made.

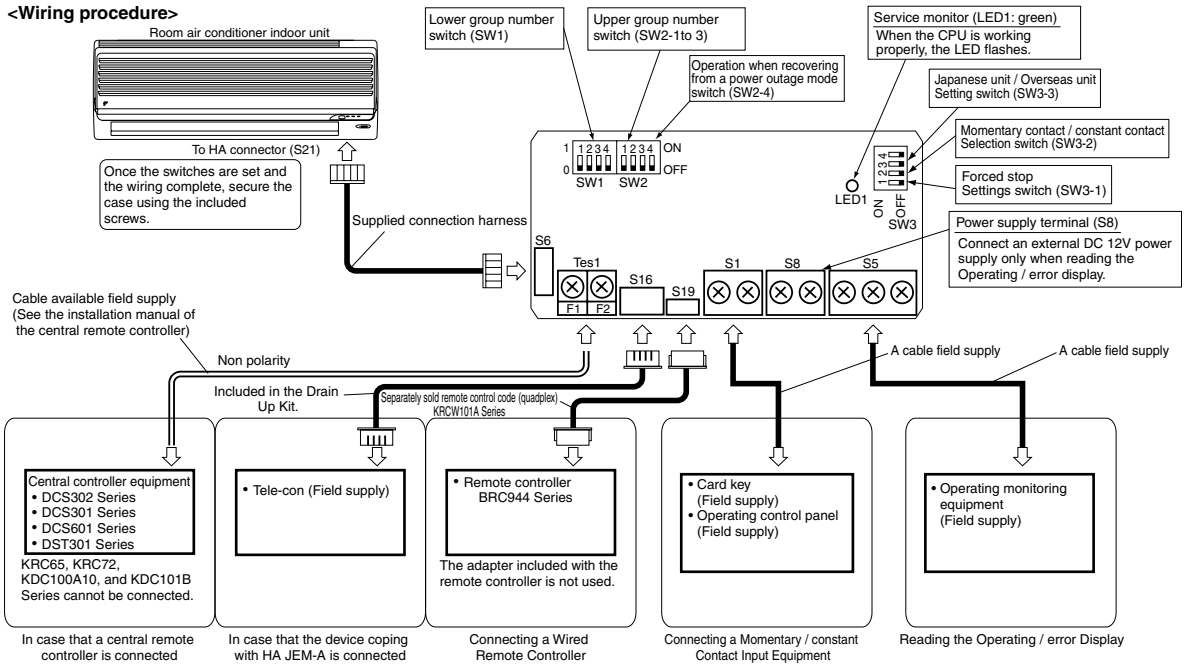
2.Component Parts and Separately-Sold Parts which are Required

This kit includes the following components. Check to ensure that none of these are missing.

Parts	Q'ty	Parts	Q'ty
Kit assy PCB is in the housing.  Screw cover	1	Connection harness (about 1.6m)	1set
		Mounting screws	3pcs.
		Binding band	1pc.
		Installation manual	1set

3.Names of Parts and Electric Wiring

<Wiring procedure>



4.Switch Settings

NOTE Turn the power on after all the switches have been set.
Settings made while the power is on are invalid.

Open the Kit's case and set the switches on the circuit board.

(1) For Overseas / Japanese unit setting (SW3-3)
Room air conditioners, different methods are used for setting the temperature in automatic mode, so this switch needs to be set.

Destination	SW3-3 setting	What Happens
Japan	OFF (Factory setting)	• "Automatic" operation is not available from the central controller. When using "automatic" operation using the wireless remote controller, the central controller displays automatic cooling (heating) and 25°C. Even if the temperature is changed, it will return to 25°C after a while.
Overseas	ON	• "Automatic" operation is available from the central controller.

(2) Group number settings (SW1 and SW2-1 to SW2-3)
Set these when using the central controller. (Set to the ■ side.) Do not set more than one unit to the same number.

However, these settings do not need to be made when using the schedule timer independently.
(The settings are needed when used in conjunction with another DCS Series central controller.)
In this case, the schedule timer performs an auto address after the power is turned on, so new group numbers are automatically set. Settings made using the switches will be overwritten.

SW2 setting	Upper group NO.	SW1 setting	Lower group NO.	SW1 setting	Lower group NO.
1 2 3	1—	1 2 3 4	0 0	1 2 3 4	0 8
1 2 3	2—	1 2 3 4	0 1	1 2 3 4	0 9
1 2 3	3—	1 2 3 4	0 2	1 2 3 4	1 0
1 2 3	4—	1 2 3 4	0 3	1 2 3 4	1 1
1 2 3	5—	1 2 3 4	0 4	1 2 3 4	1 2
1 2 3	6—	1 2 3 4	0 5	1 2 3 4	1 3
1 2 3	7—	1 2 3 4	0 6	1 2 3 4	1 4
1 2 3	8—	1 2 3 4	0 7	1 2 3 4	1 5

NOTE also that a separate timer power source is needed when using the schedule timer independently.
Power source specs: DC 16V, +10%, -15%, 200mA.
Recommended power source: Omron S82J-01015A. (Should be used with the output voltage adjusted to the center, DC 16V.)

(3) Settings when recovering from a power outage (SW2-4)
This selects whether to restart operation when the power comes back on after a power outage occurred during operation. This setting is given priority in cases where the indoor unit has an auto start ON / OFF jumper. Note also that regardless of whether switch SW2-4 is on or off, the operating mode, set temperature, fan direction and speed settings, and remote control prohibition status are stored.

SW2-4 setting	What Happens
OFF (Factory setting)	Stops after recovering from a power outage
ON	Stops if the unit was stopped before the power outage and runs if it was running.

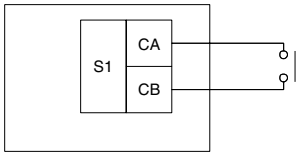
(4) Contact input function settings (SW3-1 to SW3-2)
When using contact input (S1), choose one of the following functions.

S1 operating mode	SW3-1 setting	SW3-2 setting	What Happens	Control mode
Instantaneous contact input (factory setting)	OFF	OFF	The operating status of the air conditioner is reversed by an instantaneous input of 100 msec or more.	Last command priority
Constant contact input		ON	Contact - Open to close: air condition runs. Close to open: air conditioner is stopped (NOTE 1).	ON / OFF control is rejected (operate / stop / timer prohibition) (NOTE 2).
Forced stop or remote controller permission input	ON	Invalid	Contact - Open to close: air condition stops (forced stop). Close to open: no change in operating status.	During a forced stop, all remote controller actions are prohibited.

NOTE1: Since central equipment and HA JEM-A-compatible equipment both use last command priority, the contact status and operating status of the air conditioner might not match sometimes.
Example: If the unit is run from the central controller while the air conditioner is stopped with an open contact, the contact will be open and the unit will be running.

NOTE2: Operating mode and fan direction and speed settings can be changed.

KRP928B2S



Run / stop Input
Contact specs
No-voltage minute electric current contact
(Minimum applicable load DC 12V, 1mA or lower)

Total wire length max: 100m

5.Control Codes

When using a central remote controller, the operating codes can be used to limit operation from wireless remote controllers.
○ : permitted; × : prohibited

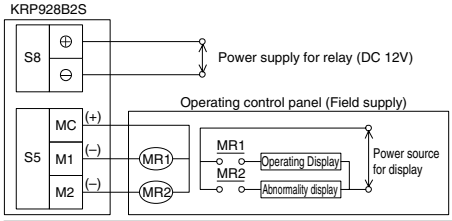
S1 operating mode	Control mode	Control code	Operations from the remote controller: "Run" control from the central controller: Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	"Stop" control from the central controller: Run / timer	Stop	Operating mode temperaturet	Fan direction and fan speed	Operations from central controller, contact input and HA JEM-A input
Instantaneous contact mode	ON / OFF control is rejected	0,1,3	×	×	○	○	×	×	○	○	○
		10,11	×	×	×		×	×	×		
	Only OFF control is accepted	2 12–19	×	○	×		×	○	×		
	Central priority	4	○	○	○		×	○	×		
		5	○	○	○		×	×	○		
	Last command priority	6,7	○	○	○		○	○	○		
	Timer operation is accepted by remote controller	8	○	○	○		×	○	×		
		9	(Only during timer operation) ○	○	○		(Only during timer operation) ×	×	○		
Constant contact mode			×	×	○		×	×	○		
Forced stop			×	×	×	×	×	×	×	×	

The remote controller permission / prohibition settings using the Ve-up controller are as follows.
○ : permitted; × : prohibited

S1 pin operating mode	Ve-up controller settings: Start / stop	Change operating mode	Change set temperature	Operations from the remote controller: Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	Operations from central controller, contact input and HA JEM-A input
Instantaneous contact mode • Constant contact mode	ON / OFF control is rejected	permitted	permitted	×	×	○	○	○
			prohibited	×	×	○		
		prohibited	permitted	×	×	×		
			prohibited	×	×	×		
	Only OFF control is accepted	permitted	permitted	×	○	○		
			prohibited	×	○	×		
		prohibited	permitted	×	○	×		
			prohibited	×	○	×		
Instantaneous contact mode	Last command priority	permitted	permitted	○	○	○		
			prohibited	○	○	○		
		prohibited	permitted	×	○	×		
			prohibited	×	○	×		
Constant contact mode		permitted	permitted	×	×	○		
			prohibited	×	×	○		
		prohibited	permitted	×	×	×		
			prohibited	×	×	×		
Forced stop	Does not affect settings			×	×	×	×	

6.Read Operating / Error Display Signal

The Operating / error signals can be read from the contact output (S5).
Output specs
M1: Turn MR 1 ON when the air conditioner is running.
M2: Turn MR 2 when a communication error has occurred between the KRP928B2S and the air conditioner, or MR 1 is ON and the unit has stopped after an error.
MR 2 is not turned ON during a warning.



Relay specs (MR1 and MR2)
Coil voltage: DC 12V
Coil resistance: 160Ω ± 10%
(Matsushita Electric HC Relay, Omron MY Relay)
Wiring length
Max: 100m

7.Combining Equipment

The central controller can be combined with the following devices.

	Central Remote Controller	ON / OFF controller	Schedule timer	D-BIPS	Forced stop contact input	Constant contact input	Instantaneous contact input	HA JEM-A-compatible equipment	Wired Remote Controller	Wireless Remote Controller
Central Remote Controller	○	○	○	○	○	○	○	○	○	○
ON / OFF controller	○	○	○	○	○	○	○	○	○	○
Schedule timer	○	○	×	×	○	○	○	○	○	○
D-BIPS	○	○	×	×	○	○	○	○	○	○
Forced stop contact input	○	○	○	○	×	×	×	○	○	○
Constant contact input	○	○	○	○	×	×	×	○	○	○
Instantaneous contact input	○	○	○	○	×	×	×	○	○	○
HA JEM-A-compatible equipment	○	○	○	○	○	○	○	×	○	○
Wired Remote Controller	○	○	○	○	○	○	○	○	×	×
Wireless Remote Controller	○	○	○	○	○	○	○	○	×	○

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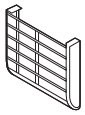
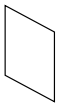
14.2.3 KPW945A4

■ Before installation

Check the following parts

Name	Louver	Truss tapping screw	Installation manual
Shape			
Quantity	1piece	M4x4screws(max.7.5kW class) M5x4screws(8.0/9.0kW class)	1piece

■ Installation Procedure

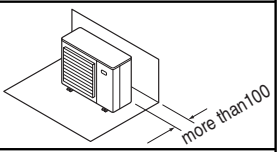
Selection of Installation Location

Use when installing in a location that meets the following conditions.

- When installing near the border to a neighbor's house
- If exhaust blows directly on passers-by because outdoor unit is installed facing a road.
- If exhaust blows directly on vegetation

Space Needed for Installation

- **A minimum of 100㎜ is needed between the back of the outdoor unit and any obstructions (walls, etc.)**



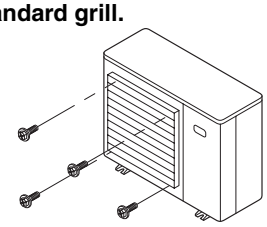
Installation of Louvers

⚠ Caution

Attach the louvers overlapping the standard grill.
Installing the louvers without the grill would allow hands to enter the fan area, which is dangerous, so be sure to install the standard grill.

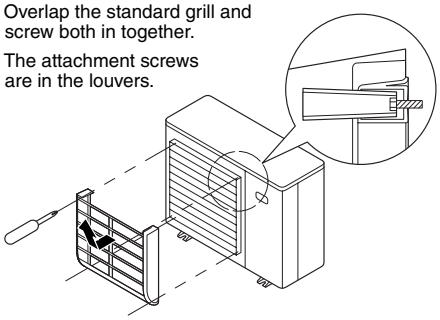
When pointing up

(1) Remove the 4 attachment screws from the standard grill.

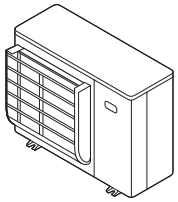


(2) Install the louver pointed up.

- Overlap the standard grill and screw both in together.
- The attachment screws are in the louvers.

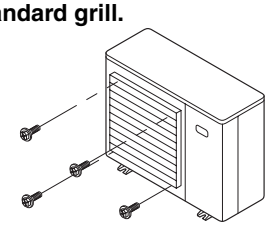


(3) Installation complete



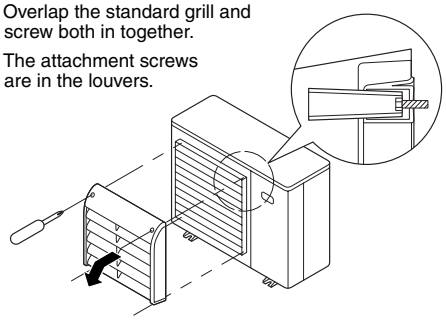
When pointing down

(1) Remove the 4 attachment screws from the standard grill.

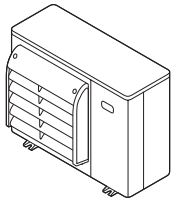


(2) Install the louver pointed down.

- Overlap the standard grill and screw both in together.
- The attachment screws are in the louvers.



(3) Installation complete



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Warning

- Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

JMI-0107

JQA-1452

About ISO 9001

ISO 9001 is a plant certification system defined by the International Organization for Standardization (ISO) relating to quality assurance. ISO 9001 certification covers quality assurance aspects related to the "design, development, manufacture, installation, and supplementary service" of products manufactured at the plant.

EC99J2044

About ISO 14001

ISO 14001 is the standard defined by the International Organization for Standardization (ISO) relating to environmental management systems. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities to meet the requirements of ISO 14001.

Dealer

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● Specifications, designs and other content appearing in this brochure are current as of January 2007 but subject to change without notice.

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