



ED45-974

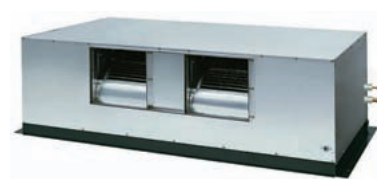
R-410A

Engineering Data

Packaged Air Conditioners
Floor standing type
Duct connection type

FVGR-N, FVPGR-N, FDR-N series

— Cooling only [50Hz] —



DAIKIN INDUSTRIES, LTD.

FVGR-N, FVPGR-N, FDR-N series	1
1. External appearance	2
2. Model name, power supply and nomenclature	3
2.1 Model name and power supply	3
2.2 Nomenclature	3
3. Functions.....	4
3.1 Indoor unit	4
3.2 Outdoor unit.....	4
4. Specifications	5
4.1 FVGR-N.....	5
4.2 FVPGR-N	7
4.3 FDR-N	10
5. Dimensions, assembly and service space	14
5.1 Dimensions.....	14
5.2 Assembly.....	26
5.3 Installation service space	35
6. Piping diagrams	38
7. Wiring diagrams	41
7.1 Indoor unit	41
7.2 Outdoor unit.....	44
7.3 Field wiring	47
8. Electric characteristics	53
8.1 FVGR-N.....	53
8.2 FVPGR-N / FDR-N	54
9. Capacity tables.....	55
9.1 Cooling capacity	55
9.2 Capacity correction factor by the length of refrigerant piping	64
10.Operation limits	65
10.1 Cooling only.....	65
11.Fan performance	66
11.1 FVGR-N / FVPGR-N	66
11.2 FDR-N	69
11.3 Fan motor specifications	74
11.4 How to select motor pulley	74
12.Sound level	75
12.1 Overall sound level.....	75
12.2 Octave band level.....	76
Installation of indoor / outdoor unit	79
1. Centre of gravity.....	80
1.1 Centre of gravity	80
1.2 Foundation of units.....	82
2. Indoor unit	83
2.1 FVGR-N.....	83
2.2 FVPGR-N	89
2.3 FDR-N	95
3. Outdoor unit	108
3.1 RUR05NY1 / RUR06NY1	108

3.2	RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1	124
-----	--	-----

Detail information of options 141

1.	Accessories.....	142
1.1	Indoor unit	142
1.2	Outdoor unit.....	142
2.	Remote controller.....	143
2.1	BRC1NU64 — Wired remote controller.....	143
3.	RUR-N.....	149
3.1	KKPJ5F180 — Central drain plug	149
3.2	KWC26C280 / KWC26C450 — Central drain pan kit.....	150
4.	Details of DTA107A55 (Central control adaptor kit)	154
4.1	Features	154
4.2	Combination of remote controllers with DTA107A55	154
4.3	Functions available by each combination.....	155
4.4	Dimension	156
4.5	Wiring diagram with optional central control adaptor	157
4.6	Installation manual	162
4.7	BRC1C62 — LCD wired remote controller.....	165

FVGR-N, FVPGR-N, FDR-N series

Model series

Class		05	06	08	10	13	15	18	20
Indoor unit	FVGR	05N	06N	08N	10N	—	—	—	—
	FVPGR	—	—	—	10N	13N	15N	18N	20N
	FDR	05N	06N	08N	10N	13N	15N	18N	20N
Outdoor unit	RUR	05N	06N	08N	10N	13N	15N	18N	20N

1. External appearance	2
2. Model name, power supply and nomenclature	3
2.1 Model name and power supply	3
2.2 Nomenclature	3
3. Functions	4
3.1 Indoor unit	4
3.2 Outdoor unit	4
4. Specifications	5
4.1 FVGR-N	5
4.2 FVPGR-N	7
4.3 FDR-N	10
5. Dimensions, assembly and service space	14
5.1 Dimensions	14
5.2 Assembly	26
5.3 Installation service space	35
6. Piping diagrams	38
7. Wiring diagrams	41
7.1 Indoor unit	41
7.2 Outdoor unit	44
7.3 Field wiring	47
8. Electric characteristics	53
8.1 FVGR-N	53
8.2 FVPGR-N / FDR-N	54
9. Capacity tables	55
9.1 Cooling capacity	55
9.2 Capacity correction factor by the length of refrigerant piping	64
10. Operation limits	65
10.1 Cooling only	65
11. Fan performance	66
11.1 FVGR-N / FVPGR-N	66
11.2 FDR-N	69
11.3 Fan motor specifications	74
11.4 How to select motor pulley	74
12. Sound level	75
12.1 Overall sound level	75
12.2 Octave band level	76

1. External appearance

Indoor unit



FVGR-N



FVPGR-N



FDR-N

Wired remote controller



BRC1NU64 (for FDR)

Outdoor unit

RUR05NY1
RUR06NY1

RUR08NY1



RUR10NY1



RUR13NY1

RUR15NY1
RUR18NY1
RUR20NY1

2. Model name, power supply and nomenclature

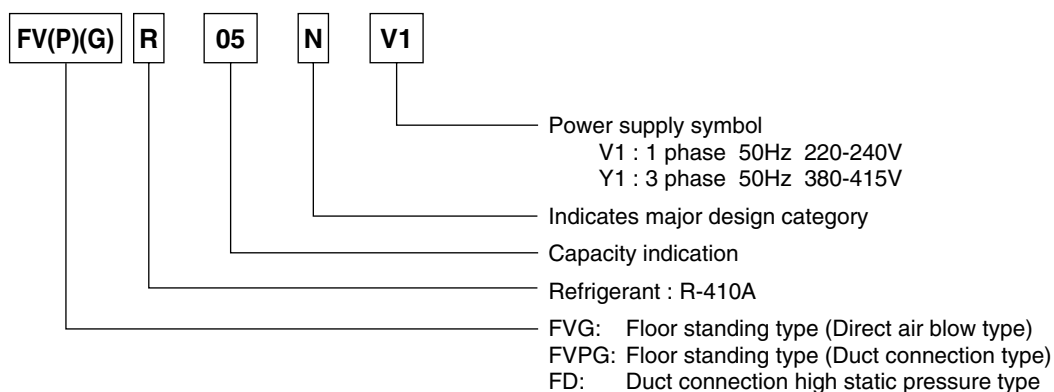
2.1 Model name and power supply

Indoor unit	Outdoor unit	Power supply
FVGR05NV1 *	RUR05NY1 *	3 phase 50Hz 380-415V (4 wires)
FVGR06NV1 *	RUR06NY1 *	
FVGR08NV1 *	RUR08NY1 *	
FVGR10NV1 *	RUR10NY1 *	
FVPGR10NY1 *	RUR10NY1 *	3 phase 50Hz 380-415V (4 wires)
FVPGR13NY1 *	RUR13NY1 *	
FVPGR15NY1 *	RUR15NY1 *	
FVPGR18NY1 *	RUR18NY1 *	
FVPGR20NY1 *	RUR20NY1 *	
FDR05NY1 *	RUR05NY1 *	3 phase 50Hz 380-415V (4 wires)
FDR06NY1 *	RUR06NY1 *	
FDR08NY1 *	RUR08NY1 *	
FDR10NY1 *	RUR10NY1 *	
FDR13NY1 *	RUR13NY1 *	
FDR15NY1 *	RUR15NY1 *	
FDR18NY1 *	RUR18NY1 *	
FDR20NY1 *	RUR20NY1 *	

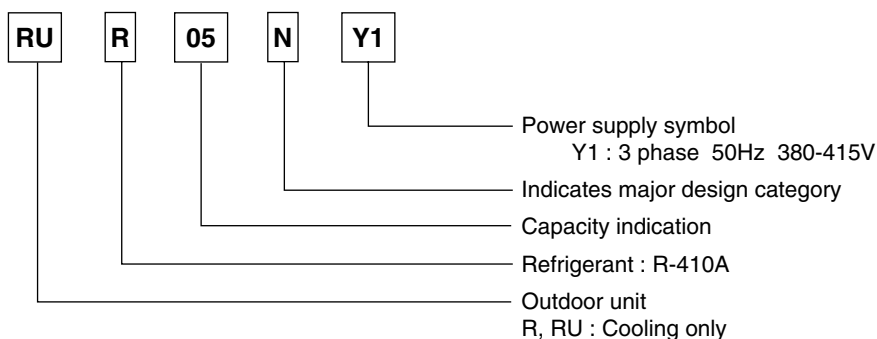
- Note:**
1. * : New model or changed model
 2. Power supply intake : outdoor unit

2.2 Nomenclature

Indoor unit



Outdoor unit



3. Functions

3.1 Indoor unit

Items	Features	FVGR-N	FVPGR-N	FDR-N
Comfort	Switchable fan speed	○	—	—
Work & servicing	Pre-charged for up to 7.5 m	○	○	○
Others	PE fin for outdoor unit	○	○	○
	Adjustable external static pressure	—	○ (Required to change the pulley)	○ (Required to change the pulley)

Note: ○ : Functions exist.

— : No functions

3.2 Outdoor unit

Items	Features		RUR05NY1 / RUR06NY1 RUR08NY1 / RUR10NY1 / RUR13NY1 RUR15NY1 / RUR18NY1 / RUR20NY1
Operation range	Wide operation range	Cooling	21~46°CDB

4. Specifications

4.1 FVGR-N

Floor standing type (Direct air blow type)

Model	Indoor unit		FVGR05NV1		FVGR06NV1	
	Outdoor unit		RUR05NY1		RUR06NY1	
Power supply			3 phase 50Hz 380-415V (4 wires)		3 phase 50Hz 380-415V (4 wires)	
*1. Cooling capacity *2.	Net	kW	14.7		17.6	
		Btu/h	50,000		60,000	
		kcal/h	12,600		15,100	
Power input	Indoor unit	kW	0.5		0.5	
	Outdoor unit	kW	5.0		5.9	
	Total	kW	5.5		6.4	
*1. Cooling capacity *3.	Gross	kW	15.2		18.1	
		Btu/h	51,800		61,800	
		kcal/h	13,100		15,600	
Running current	Indoor unit	A	2.5		2.5	
	Outdoor unit	A	8.2		9.6	
	Total	A	9		10.4	
Starting current		A	72.7		80.9	
Power factor		%	88.2		88.8	
Indoor unit			FVGR05NV1		FVGR06NV1	
Colour			Ivory white		Ivory white	
Dimensions		HxWxD	mm		mm	
			1,870x750x510		1,870x750x510	
Coil	Type		Cross fin coil (Fine louver fins and Hi-XA tubes)		Cross fin coil (Fine louver fins and Hi-XA tubes)	
	RowsxStagesxFin pitch		3x32x1.85		3x32x1.85	
	Face area		m ²		0.409	
Fan	Type		Sirocco fan		Sirocco fan	
	Drive		Direct drive 3 speed		Direct drive 3 speed	
	Motor output		kW		0.245	
	Air flow rate		m ³ /min		42	
			cfm		1,480	
	External static pressure		mmH ₂ O		—	
Air filter			Resin net		Resin net	
Weight		kg	90		90	
Piping connections	Liquid	mm	φ9.5 (Brazing)		φ9.5 (Brazing)	
	Gas	mm	φ19.1 (Brazing)		φ19.1 (Brazing)	
	Drain	mm	PS 1B internal thread		PS 1B internal thread	
Remote controller (option)		Wired	—		—	
		Wireless	—		—	
Outdoor unit			RUR05NY1		RUR06NY1	
Colour			Ivory white		Ivory white	
Dimensions		HxWxD	mm		mm	
			1,345x900x320		1,345x900x320	
Coil	Type		Cross fin coil (Fine louver fins and Hi-XSL tubes)		Cross fin coil (Fine louver fins and Hi-XSL tubes)	
	RowsxStagesxFin pitch		1x60x1.4		2x60x2.0	
	Face area		m ²		1.172	
Compressor	Model	Y1	JT170G-P4Y1@S		ZP72KCE-TFD	
	Type		Hermetically sealed scroll type		Hermetically sealed scroll type	
	Motor output		kW		4.5	
Fan	Model		P47L11Sx2		P47L11Sx2	
	Type		Propeller		Propeller	
	Motor output		W		90+90	
	Air flow rate		m ³ /min		100	
		cfm	3,430		3,530	
Weight		kg	92		105	
Piping connections	Liquid	mm	φ9.5 (Flare)		φ9.5 (Flare)	
	Gas	mm	φ19.1 (Flare)		φ19.1 (Flare)	
	Drain	mm	φ26.0 (Hole)		φ26.0 (Hole)	
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Reverse phase protector. Fuse. Thermo switch (discharge pipe).		Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	
Design pressure		High/Low	MPa		4.17/2.5	
Capacity step		%	100-0		100-0	
Refrigerant control			Capillary tube		Capillary tube	
Refrigerant piping	Standard length		m		5.0	
	Max. length		m		50 (Equivalent length 70m)	
	Max. height difference		m		30	
Refrigerant	Model		R-410A		R-410A	
	Charge		kg		2.5 (Charged for 7.5m)	
Refrigerant oil	Model		Refer to the name plate of compressor.		Refer to the name plate of compressor.	
	Charge		L		1.4	
Drawing No.			C : 4D063644B		C : 4D063645D	

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae
kcal/h=kWx860
Btu/h=kWx3,412
cfm=m ³ /minx35.3

Floor standing type (Direct air blow type)

Model	Indoor unit		FVGR08NV1	FVGR10NV1		
	Outdoor unit	Y1	RUR08NY1	RUR10NY1		
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)		
*1. Cooling capacity *2.	Net	kW	23.5	29.3		
		Btu/h	80,000	100,000		
		kcal/h	20,200	25,200		
Power input	Indoor unit	kW	0.7	0.8		
	Outdoor unit	kW	7.9	10.4		
	Total	kW	8.6	11.2		
*1. Cooling capacity *3.	Gross	kW	24.2	30.1		
		Btu/h	82,600	102,700		
		kcal/h	20,800	25,900		
Running current	Indoor unit	A	3.4	3.9		
	Outdoor unit	A	13.3	17.6		
	Total	A	14.4	18.9		
Starting current		A	118.2	135		
Power factor		%	85.9	85.5		
Indoor unit			FVGR08NV1	FVGR10NV1		
Colour			Ivory white	Ivory white		
Dimensions			HxWxD	mm	1,870x950x510	1,870x1,170x510
Coil	Type		Cross fin coil (Fine louver fins and Hi-XA tubes)		Cross fin coil (Fine louver fins and Hi-XA tubes)	
	RowsxStagesxFin pitch		3x32x1.85		3x32x1.85	
	Face area	m²	0.551		0.707	
Fan	Type		Sirocco fan		Sirocco fan	
	Drive		Direct drive 3 speed		Direct drive 3 speed	
	Motor output	kW	0.375		0.245x2	
	Air flow rate	m³/min	54		80	
		cfm	1,910		2,830	
	External static pressure	mmH₂O	—		—	
Air filter			Resin net		Resin net	
Weight			kg	107	143	
Piping connections	Liquid	mm	φ12.7 (Brazing)		φ12.7 (Brazing)	
	Gas	mm	φ22.2 (Brazing)		φ28.6 (Brazing)	
	Drain	mm	PS 1B internal thread		PS 1B internal thread	
Remote controller (option)		Wired	—		—	
		Wireless	—		—	
Outdoor unit			RUR08NY1	RUR10NY1		
Colour			Ivory white	Ivory white		
Dimensions			HxWxD	mm	1,680x930x765	1,680x930x765
Coil	Type		Cross fin coil (Fine louver fins and Hi-XSL tubes)		Cross fin coil (Fine louver fins and Hi-XSL tubes)	
	RowsxStagesxFin pitch		1x54x1.4		2x54x2.0	
	Face area	m²	2.112		2.112	
Compressor	Model	Y1	ZP103KCE-TFD		ZP137KCE-TFD	
	Type		Hermetically sealed scroll type		Hermetically sealed scroll type	
	Motor output	kW	6.7		9.0	
Fan	Model		P68L11S		P68L11S	
	Type		Propeller		Propeller	
	Motor output	W	500		500	
		Air flow rate	m³/min	190		190
			cfm	6,710		6,710
Weight			kg	203	206	
Piping connections	Liquid	mm	φ12.7 (Flare)		φ12.7 (Flare)	
	Gas	mm	φ22.2 (Brazing)		φ28.6 (Brazing)	
	Drain	mm	—		—	
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.		Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	
Design pressure		High/Low	MPa	4.17/2.5		
Capacity step			%	100-0		
Refrigerant control			Capillary tube			
Refrigerant piping	Standard length		m	5.0		
	Max. length		m	50 (Equivalent length 70m)		
	Max. height difference		m	30		
Refrigerant	Model		R-410A			
	Charge	kg	4.5 (Charged for 7.5m)			
Refrigerant oil	Model		Refer to the name plate of compressor.			
	Charge	L	3.3			
Drawing No.			C : 4D063645D			

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae

kcal/h=kW×860
 Btu/h=kW×3,412
 cfm=m³/min×35.3

4.2 FVPGR-N

Floor standing type (Duct connection type)

Model		Indoor unit		FVPGR10NY1
		Outdoor unit	Y1	RUR10NY1
Power supply				3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity *2.	Net		kW	29.3
			Btu/h	100,000
			kcal/h	25,200
Power input	Indoor unit		kW	1.0
	Outdoor unit		kW	10.4
	Total		kW	11.4
*1. Cooling capacity *3.	Gross		kW	30.3
			Btu/h	103,400
			kcal/h	26,100
Running current	Indoor unit		A	1.6
	Outdoor unit		A	17.6
	Total		A	19.2
Starting current			A	129.5
Power factor			%	85.7
Indoor unit				FVPGR10NY1
Colour				Ivory white
Dimensions	H×W×D		mm	1,740×1,170×510
Coil	Type			Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch			3×32×1.85
	Face area		m ²	0.707
Fan	Type			Sirocco fan
	Drive			Belt drive
	Motor output		kW	1.5
	Air flow rate		m ³ /min	80
			cfm	2,830
	External static pressure		mmH ₂ O	15
Air filter				Resin net
Weight			kg	150
Piping connections	Liquid		mm	φ12.7 (Brazing)
	Gas		mm	φ28.6 (Brazing)
	Drain		mm	PS 1B internal thread
Remote controller (option)	Wired			—
	Wireless			—
Outdoor unit			Y1	RUR10NY1
Colour				Ivory white
Dimensions	H×W×D		mm	1,680×930×765
Coil	Type			Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch			2×54×2.0
	Face area		m ²	2.112
Compressor	Model		Y1	ZP137KCE-TFD
	Type			Hermetically sealed scroll type
	Motor output		kW	9.0
Fan	Model			P68L11S
	Type			Propeller
	Motor output		W	500
	Air flow rate		m ³ /min	190
			cfm	6,710
Weight			kg	206
Piping connections	Liquid		mm	φ12.7 (Flare)
	Gas		mm	φ28.6 (Brazing)
	Drain		mm	—
Safety devices				Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure		High/Low	MPa	4.17/2.5
Capacity step			%	100-0
Refrigerant control				Capillary tube
Refrigerant piping	Standard length		m	5.0
	Max. length		m	50 (Equivalent length 70m)
	Max. height difference		m	30
Refrigerant	Model			R-410A
	Charge		kg	6.0 (Charged for 7.5m)
Refrigerant oil	Model			Refer to the name plate of compressor.
	Charge		L	3.3
Drawing No.				C : 4D063646B

Note:

- *1. Nominal cooling capacities are based on the following conditions :
Return air temperature : 27.0°CDB, 19.5°CWB
Outdoor temperature : 35°CDB
Equivalent refrigerant piping length : 5 m (Horizontal)
- *2. Net capacity includes indoor fan heat.
- *3. Gross capacity does not include indoor fan heat.

Conversion formulae
kcal/h=kW×860 Btu/h=kW×3,412 cfm=m ³ /min×35.3

Floor standing type (Duct connection type)

Model	Indoor unit		FVPGR13NY1	FVPGR15NY1
	Outdoor unit	Y1	RUR13NY1	RUR15NY1
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity *2.	Net	kW	35.2	46.9
		Btu/h	120,000	160,000
		kcal/h	30,200	40,300
Power input	Indoor unit	kW	1.6	1.6
	Outdoor unit	kW	13.3	16.2
	Total	kW	14.9	17.8
*1. Cooling capacity *3.	Gross	kW	36.8	48.5
		Btu/h	125,600	165,500
		kcal/h	31,600	41,700
Running current	Indoor unit	A	2.6	2.6
	Outdoor unit	A	21.7	26.4
	Total	A	24.3	29
Starting current		A	118	130.3
Power factor		%	88.5	88.6
Indoor unit			FVPGR13NY1	FVPGR15NY1
Colour			Ivory white	Ivory white
Dimensions	H×W×D	mm	1,870×1,170×720	1,870×1,170×720
Coil	Type		Cross fin coil (Fine louver fins and Hi-XA tubes)	Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch		3×44×1.3	3×44×1.3
	Face area	m²	0.94	0.94
Fan	Type		Sirocco fan	Sirocco fan
	Drive		Belt drive	Belt drive
	Motor output	kW	2.2	2.2
	Air flow rate	m³/min	120	120
		cfm	4,240	4,240
	External static pressure	mmH₂O	15	15
Air filter		Resin net	Resin net	
Weight		kg	180	180
Piping connections	Liquid	mm	φ12.7 (Brazing)	φ15.9 (Brazing)
	Gas	mm	φ28.6 (Brazing)	φ34.9 (Brazing)
	Drain	mm	PS 1B internal thread	PS 1B internal thread
Remote controller (option)	Wired		—	—
	Wireless		—	—
Outdoor unit		Y1	RUR13NY1	RUR15NY1
Colour			Ivory white	Ivory white
Dimensions	H×W×D	mm	1,680×1,240×765	1,680×1,240×765
Coil	Type		Cross fin coil (Fine louver fins and Hi-XSL tubes)	Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch		1×54×1.4	2×54×1.4
	Face area	m²	2.481	2.481
Compressor	Model	Y1	ZPT166KCE-TFD	ZPT206KCE-TFD
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	5.0+5.0	6.7+6.7
Fan	Model		P54M11S×2	P54M11S×2
	Type		Propeller	Propeller
	Motor output	W	250+250	300+300
	Air flow rate	m³/min	210	230
		cfm	7,420	8,120
Weight		kg	243	319
Piping connections	Liquid	mm	φ12.7 (Flare)	φ15.9 (Flare)
	Gas	mm	φ28.6 (Brazing)	φ34.9 (Brazing)
	Drain	mm	—	—
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure	High/Low	MPa	4.17/2.5	4.17/2.5
Capacity step		%	100-50-0	100-50-0
Refrigerant control			Capillary tube	Capillary tube
Refrigerant piping	Standard length	m	5.0	5.0
	Max. length	m	50 (Equivalent length 70m)	50 (Equivalent length 70m)
	Max. height difference	m	30	30
Refrigerant	Model		R-410A	R-410A
	Charge	kg	4.5 (Charged for 7.5m)	8.0 (Charged for 7.5m)
Refrigerant oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L	5.0	6.5
Drawing No.			C : 3D063647C	C : 3D063647C

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae

kcal/h=kW×860
 Btu/h=kW×3,412
 cfm=m³/min×35.3

Floor standing type (Duct connection type)

Model	Indoor unit		FVPGR18NY1	FVPGR20NY1
	Outdoor unit	Y1	RUR18NY1	RUR20NY1
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity *2.	Net	kW	52.8	58.6
		Btu/h	180,000	200,000
		kcal/h	45,400	50,400
Power input	Indoor unit	kW	1.9	1.9
	Outdoor unit	kW	19.3	22.9
	Total	kW	21.2	24.8
*1. Cooling capacity *3.	Gross	kW	54.7	60.5
		Btu/h	186,600	206,400
		kcal/h	47,000	52,000
Running current	Indoor unit	A	3.1	3.1
	Outdoor unit	A	31.5	37.3
	Total	A	34.6	40.4
Starting current		A	143.4	146.3
Power factor		%	88.4	88.6
Indoor unit			FVPGR18NY1	FVPGR20NY1
Colour			Ivory white	Ivory white
Dimensions			1,870×1,470×720	1,870×1,470×720
Coil	Type		Cross fin coil (Fine louver fins and Hi-XA tubes)	Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch		3×44×1.3	3×44×1.3
	Face area	m²	1.239	1.239
Fan	Type		Sirocco fan	Sirocco fan
	Drive		Belt drive	Belt drive
	Motor output	kW	3.7	3.7
	Air flow rate	m³/min	162	162
		cfm	5,720	5,720
	External static pressure	mmH₂O	15	15
Air filter			Resin net	Resin net
Weight		kg	240	240
Piping connections	Liquid	mm	φ15.9 (Brazing)	φ15.9 (Brazing)
	Gas	mm	φ34.9 (Brazing)	φ34.9 (Brazing)
	Drain	mm	PS 1B internal thread	PS 1B internal thread
Remote controller (option)		Wired	—	—
		Wireless	—	—
Outdoor unit			RUR18NY1	RUR20NY1
Colour			Ivory white	Ivory white
Dimensions			1,680×1,240×765	1,680×1,240×765
Coil	Type		Cross fin coil (Fine louver fins and Hi-XSL tubes)	Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch		2×54×1.4	2×54×1.4
	Face area	m²	2.481	2.481
Compressor	Model	Y1	ZPT240KCE-TFD	ZPT274KCE-TFD
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	7.5+7.5	9.0+9.0
Fan	Model		P54M11S×2	P54M11S×2
	Type		Propeller	Propeller
	Motor output	W	400+400	400+400
	Air flow rate	m³/min	260	260
		cfm	9,180	9,180
Weight		kg	322	329
Piping connections	Liquid	mm	φ15.9 (Flare)	φ15.9 (Flare)
	Gas	mm	φ34.9 (Brazing)	φ34.9 (Brazing)
	Drain	mm	—	—
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure		High/Low MPa	4.17/2.5	4.17/2.5
Capacity step		%	100-50-0	100-50-0
Refrigerant control			Capillary tube	Capillary tube
Refrigerant piping	Standard length	m	5.0	5.0
	Max. length	m	50 (Equivalent length 70m)	50 (Equivalent length 70m)
	Max. height difference	m	30	30
Refrigerant	Model		R-410A	R-410A
	Charge	kg	8.0 (Charged for 7.5m)	8.0 (Charged for 7.5m)
Refrigerant oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L	6.5	6.5
Drawing No.			C : 3D063647C	C : 3D063647C

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae	
kcal/h=kW×860	
Btu/h=kW×3,412	
cfm=m ³ /min×35.3	

4.3 FDR-N

Duct connection high static pressure type

Model	Indoor unit		FDR05NY1	FDR06NY1
	Outdoor unit	Y1	RUR05NY1	RUR06NY1
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity	Net	kW	14.7	17.6
*2.		Btu/h	50,000	60,000
		kcal/h	12,600	15,100
Power input	Indoor unit	kW	0.6	0.6
	Outdoor unit	kW	5.0	5.9
	Total	kW	5.6	6.5
*1. Cooling capacity	Gross	kW	15.3	18.2
*3.		Btu/h	52,200	62,100
		kcal/h	13,200	15,700
Running current	Indoor unit	A	1.0	1.0
	Outdoor unit	A	8.2	9.6
	Total	A	9.2	10.6
Starting current		A	70	78.2
Power factor		%	87.9	88.5
Indoor unit			FDR05NY1	FDR06NY1
Colour			Galvanized steel	Galvanized steel
Dimensions			450×900×850	450×1,130×850
Coil	Type		Cross fin coil (Fine louver fins and Hi-XA tubes)	Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch		2×24×2.0	2×24×2.0
	Face area	m ²	0.370	0.491
Fan	Type		Sirocco fan	Sirocco fan
	Drive		Belt drive	Belt drive
	Motor output	kW	0.75	0.75
	Air flow rate	m ³ /min	46	54
		cfm	1,620	1,910
	External static pressure	mmH ₂ O	9	9
Air filter			—	—
Weight		kg	72	79
Piping connections	Liquid	mm	φ9.5 (Brazing)	φ9.5 (Brazing)
	Gas	mm	φ19.1 (Brazing)	φ19.1 (Brazing)
	Drain	mm	PS 3/4B internal thread	PS 3/4B internal thread
Remote controller (option)	Wired		BRC1NU64	BRC1NU64
	Wireless		—	—
Outdoor unit			RUR05NY1	RUR06NY1
Colour			Ivory white	Ivory white
Dimensions			1,345×900×320	1,345×900×320
Coil	Type		Cross fin coil (Fine louver fins and Hi-XSL tubes)	Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch		1×60×1.4	2×60×2.0
	Face area	m ²	1.172	1.134
Compressor	Model	Y1	JT170G-P4Y1@S	ZP72KCE-TFD
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	4.5	4.5
Fan	Model		P47L11S×2	P47L11S×2
	Type		Propeller	Propeller
	Motor output	W	65+90	90+90
	Air flow rate	m ³ /min	97	100
		cfm	3,430	3,530
Weight		kg	92	105
Piping connections	Liquid	mm	φ9.5 (Flare)	φ9.5 (Flare)
	Gas	mm	φ19.1 (Flare)	φ19.1 (Flare)
	Drain	mm	φ26.0 (Hole)	φ26.0 (Hole)
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Reverse phase protector. Fuse. Thermo switch (discharge pipe).	Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure		MPa	4.17/2.5	4.17/2.5
Capacity step		%	100-0	100-0
Refrigerant control			Capillary tube	Capillary tube
Refrigerant piping	Standard length		5.0	5.0
	Max. length		50 (Equivalent length 70m)	50 (Equivalent length 70m)
	Max. height difference		30	30
Refrigerant	Model		R-410A	R-410A
	Charge	kg	2.5 (Charged for 7.5m)	3.5 (Charged for 7.5m)
Refrigerant oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L	1.4	1.8
Drawing No.			C : 4D063641B	C : 4D063642D

Note:

- *1. Nominal cooling capacities are based on the following conditions :
Return air temperature : 27.0°CDB, 19.5°CWB
Outdoor temperature : 35°CDB
Equivalent refrigerant piping length : 5 m (Horizontal)
- *2. Net capacity includes indoor fan heat.
- *3. Gross capacity does not include indoor fan heat.

Conversion formulae	
kcal/h=kW×860	
Btu/h=kW×3,412	
cfm=m ³ /min×35.3	

Duct connection high static pressure type

Model	Indoor unit		FDR08NY1	FDR10NY1
	Outdoor unit	Y1	RUR08NY1	RUR10NY1
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity *2.	Net	kW	23.5	29.3
		Btu/h	80,000	100,000
		kcal/h	20,200	25,200
Power input	Indoor unit	kW	0.9	1.0
	Outdoor unit	kW	8.1	10.4
	Total	kW	9.0	11.4
*1. Cooling capacity *3.	Gross	kW	24.4	30.3
		Btu/h	83,800	103,400
		kcal/h	21,000	26,100
Running current	Indoor unit	A	1.5	1.6
	Outdoor unit	A	13.7	17.6
	Total	A	15.2	19.2
Starting current		A	115.5	129.5
Power factor		%	85.6	85.7
Indoor unit			FDR08NY1	FDR10NY1
Colour			Galvanized steel	Galvanized steel
Dimensions	H×W×D	mm	500×1,130×850	500×1,330×850
Coil	Type	Cross fin coil (Fine louver fins and Hi-XA tubes)		Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch	3×22×1.5		3×22×1.5
	Face area	m²	0.443	0.540
Fan	Type	Sirocco fan		Sirocco fan
	Drive	Belt drive		Belt drive
	Motor output	kW	1.5	1.5
	Air flow rate	m³/min	68	78
		cfm	2,400	2,750
	External static pressure	mmH₂O	10	10
Air filter		—		
Weight		kg	93	104
Piping connections	Liquid	mm	φ12.7 (Brazing)	φ12.7 (Brazing)
	Gas	mm	φ22.2 (Brazing)	φ28.6 (Brazing)
	Drain	mm	PS 3/4B internal thread	PS 3/4B internal thread
Remote controller (option)		Wired	BRC1NU64	
		Wireless	—	
Outdoor unit			RUR08NY1	RUR10NY1
Colour			Ivory white	Ivory white
Dimensions	H×W×D	mm	1,680×930×765	1,680×930×765
Coil	Type	Cross fin coil (Fine louver fins and Hi-XSL tubes)		Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch	1×54×1.4		2×54×2.0
	Face area	m²	2.112	2.112
Compressor	Model	Y1	ZP103KCE-TFD	ZP137KCE-TFD
	Type	Hermetically sealed scroll type		Hermetically sealed scroll type
	Motor output	kW	6.7	9.0
Fan	Model	P68L11S		P68L11S
	Type	Propeller		Propeller
	Motor output	W	500	500
	Air flow rate	m³/min	190	190
		cfm	6,710	6,710
Weight		kg	203	206
Piping connections	Liquid	mm	φ12.7 (Flare)	φ12.7 (Flare)
	Gas	mm	φ22.2 (Brazing)	φ28.6 (Brazing)
	Drain	mm	—	
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure	High/Low	MPa	4.17/2.5	4.17/2.5
Capacity step		%	100-0	100-0
Refrigerant control			Capillary tube	Capillary tube
Refrigerant piping	Standard length	m	5.0	5.0
	Max. length	m	50 (Equivalent length 70m)	50 (Equivalent length 70m)
	Max. height difference	m	30	30
Refrigerant	Model	R-410A		R-410A
	Charge	kg	4.5 (Charged for 7.5m)	6.0 (Charged for 7.5m)
Refrigerant oil	Model	Refer to the name plate of compressor.		Refer to the name plate of compressor.
	Charge	L	3.3	3.3
Drawing No.			C : 4D063642D	C : 4D063642D

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae

kcal/h=kW×860
 Btu/h=kW×3,412
 cfm=m³/min×35.3

Duct connection high static pressure type

Model	Indoor unit		FDR13NY1	FDR15NY1
	Outdoor unit	Y1	RUR13NY1	RUR15NY1
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity *2.	Net	kW	35.2	46.9
		Btu/h	120,000	160,000
		kcal/h	30,200	40,300
Power input	Indoor unit	kW	1.7	1.7
	Outdoor unit	kW	13.3	16.2
	Total	kW	15.0	17.9
*1. Cooling capacity *3.	Gross	kW	36.9	48.6
		Btu/h	125,900	165,800
		kcal/h	31,700	41,800
Running current	Indoor unit	A	2.8	2.8
	Outdoor unit	A	21.7	26.4
	Total	A	24.5	29.2
Starting current		A	118	130.3
Power factor		%	88.4	88.5
Indoor unit			FDR13NY1	FDR15NY1
Colour			Galvanized steel	Galvanized steel
Dimensions	H×W×D	mm	625×1,620×850	625×1,620×850
Coil	Type	Cross fin coil (Fine louver fins and Hi-XA tubes)		Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch	3×26×1.5		3×26×1.5
	Face area	m²	0.784	0.784
Fan	Type	Sirocco fan		Sirocco fan
	Drive	Belt drive		Belt drive
	Motor output	kW	2.2	2.2
	Air flow rate	m³/min	136	136
		cfm	4,800	4,800
	External static pressure	mmH₂O	15	15
Air filter		—		
Weight		kg	161	161
Piping connections	Liquid	mm	φ12.7 (Brazing)	φ15.9 (Brazing)
	Gas	mm	φ28.6 (Brazing)	φ34.9 (Brazing)
	Drain	mm	PS 1B internal thread	PS 1B internal thread
Remote controller (option)		Wired	BRC1NU64	
		Wireless	—	
Outdoor unit			RUR13NY1	RUR15NY1
Colour			Ivory white	Ivory white
Dimensions	H×W×D	mm	1,680×1,240×765	1,680×1,240×765
Coil	Type	Cross fin coil (Fine louver fins and Hi-XSL tubes)		Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch	1×54×1.4		2×54×1.4
	Face area	m²	2.481	2.481
Compressor	Model	Y1	ZPT166KCE-TFD	ZPT206KCE-TFD
	Type	Hermetically sealed scroll type		Hermetically sealed scroll type
	Motor output	kW	5.0+5.0	6.7+6.7
Fan	Model	P54M11S×2		P54M11S×2
	Type	Propeller		Propeller
	Motor output	W	250+250	300+300
	Air flow rate	m³/min	210	230
		cfm	7,420	8,120
Weight		kg	243	319
Piping connections	Liquid	mm	φ12.7 (Flare)	φ15.9 (Flare)
	Gas	mm	φ28.6 (Brazing)	φ34.9 (Brazing)
	Drain	mm	—	
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure	High/Low	MPa	4.17/2.5	4.17/2.5
Capacity step		%	100-50-0	100-50-0
Refrigerant control			Capillary tube	Capillary tube
Refrigerant piping	Standard length	m	5.0	5.0
	Max. length	m	50 (Equivalent length 70m)	50 (Equivalent length 70m)
	Max. height difference	m	30	30
Refrigerant	Model	R-410A		R-410A
	Charge	kg	4.5 (Charged for 7.5m)	8.0 (Charged for 7.5m)
Refrigerant oil	Model	Refer to the name plate of compressor.		Refer to the name plate of compressor.
	Charge	L	5.0	6.5
Drawing No.			C : 3D063643B	C : 3D063643B

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae

kcal/h=kW×860
 Btu/h=kW×3,412
 cfm=m³/min×35.3

Duct connection high static pressure type

Model	Indoor unit		FDR18NY1	FDR20NY1
	Outdoor unit	Y1	RUR18NY1	RUR20NY1
Power supply			3 phase 50Hz 380-415V (4 wires)	3 phase 50Hz 380-415V (4 wires)
*1. Cooling capacity *2.	Net	kW	52.8	58.6
		Btu/h	180,000	200,000
		kcal/h	45,400	50,400
Power input	Indoor unit	kW	2.2	2.2
	Outdoor unit	kW	19.3	22.9
	Total	kW	21.5	25.1
*1. Cooling capacity *3.	Gross	kW	55.0	60.8
		Btu/h	187,700	207,500
		kcal/h	47,300	52,300
Running current	Indoor unit	A	3.6	3.6
	Outdoor unit	A	31.5	37.3
	Total	A	35.1	40.9
Starting current		A	143.4	146.3
Power factor		%	88.4	88.6
Indoor unit			FDR18NY1	FDR20NY1
Colour			Galvanized steel	Galvanized steel
Dimensions	H×W×D	mm	625×1,980×850	625×1,980×850
Coil	Type	Cross fin coil (Fine louver fins and Hi-XA tubes)		Cross fin coil (Fine louver fins and Hi-XA tubes)
	Rows×Stages×Fin pitch	3×26×1.5		3×26×1.5
	Face area	m²	0.990	0.990
Fan	Type	Sirocco fan		Sirocco fan
	Drive	Belt drive		Belt drive
	Motor output	kW	3.7	3.7
	Air flow rate	m³/min	166	166
		cfm	5,860	5,860
	External static pressure	mmH₂O	15	15
Air filter		—		
Weight		kg	187	187
Piping connections	Liquid	mm	φ15.9 (Brazing)	φ15.9 (Brazing)
	Gas	mm	φ34.9 (Brazing)	φ34.9 (Brazing)
	Drain	mm	PS 1B internal thread	PS 1B internal thread
Remote controller (option)		Wired	BRC1NU64	BRC1NU64
		Wireless	—	—
Outdoor unit			RUR18NY1	RUR20NY1
Colour			Ivory white	Ivory white
Dimensions	H×W×D	mm	1,680×1,240×765	1,680×1,240×765
Coil	Type	Cross fin coil (Fine louver fins and Hi-XSL tubes)		Cross fin coil (Fine louver fins and Hi-XSL tubes)
	Rows×Stages×Fin pitch	2×54×1.4		2×54×1.4
	Face area	m²	2.481	2.481
Compressor	Model	Y1	ZPT240KCE-TFD	ZPT274KCE-TFD
	Type	Hermetically sealed scroll type		Hermetically sealed scroll type
	Motor output	kW	7.5+7.5	9.0+9.0
Fan	Model	P54M11S×2		P54M11S×2
	Type	Propeller		Propeller
	Motor output	W	400+400	400+400
	Air flow rate	m³/min	260	260
		cfm	9,180	9,180
Weight		kg	322	329
Piping connections	Liquid	mm	φ15.9 (Flare)	φ15.9 (Flare)
	Gas	mm	φ34.9 (Brazing)	φ34.9 (Brazing)
	Drain	mm	—	—
Safety devices			Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.	Thermal protector for outdoor fan motor. High pressure switch. Low pressure switch. Internal protector (compressor, indoor fan motor). Fuse.
Design pressure	High/Low	MPa	4.17/2.5	4.17/2.5
Capacity step		%	100-50-0	100-50-0
Refrigerant control			Capillary tube	Capillary tube
Refrigerant piping	Standard length	m	5.0	5.0
	Max. length	m	50 (Equivalent length 70m)	50 (Equivalent length 70m)
	Max. height difference	m	30	30
Refrigerant	Model	R-410A		R-410A
	Charge	kg	8.0 (Charged for 7.5m)	8.0 (Charged for 7.5m)
Refrigerant oil	Model	Refer to the name plate of compressor.		Refer to the name plate of compressor.
	Charge	L	6.5	6.5
Drawing No.			C : 3D063643B	C : 3D063643B

Note: *1. Nominal cooling capacities are based on the following conditions :
 Return air temperature : 27.0°CDB, 19.5°CWB
 Outdoor temperature : 35°CDB
 Equivalent refrigerant piping length : 5 m (Horizontal)
 *2. Net capacity includes indoor fan heat.
 *3. Gross capacity does not include indoor fan heat.

Conversion formulae

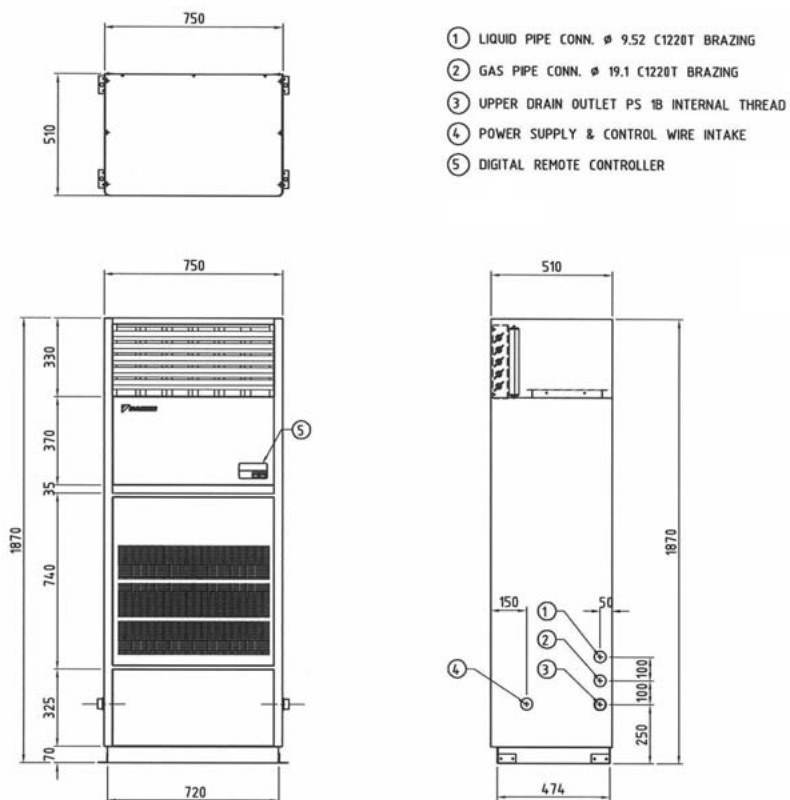
kcal/h=kW×860
 Btu/h=kW×3,412
 cfm=m³/min×35.3

5. Dimensions, assembly and service space

5.1 Dimensions

5.1.1 Indoor unit

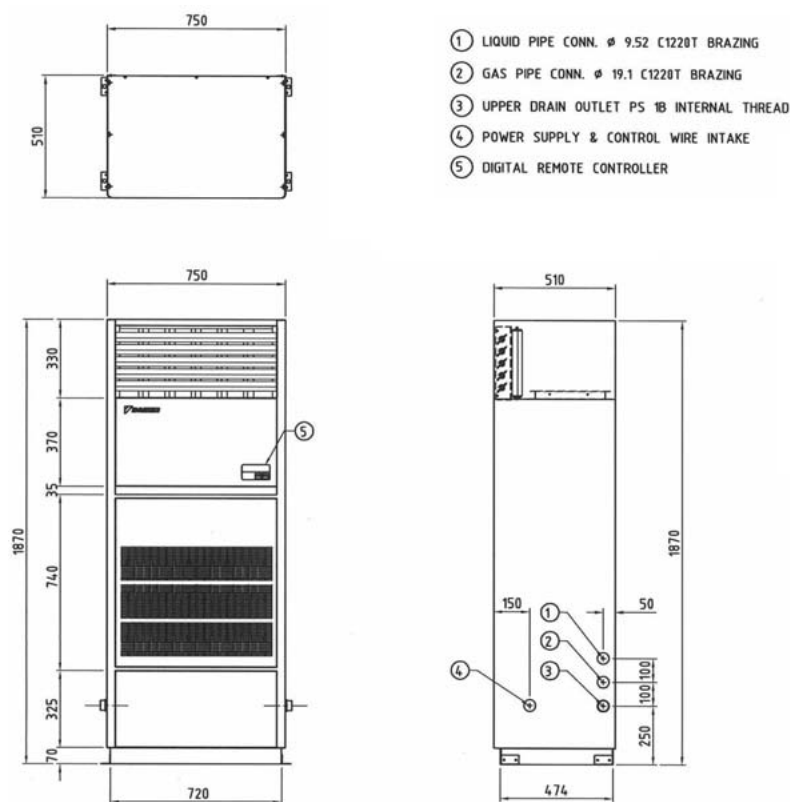
FVGR05NV1



Unit (mm)

SDR3150151C

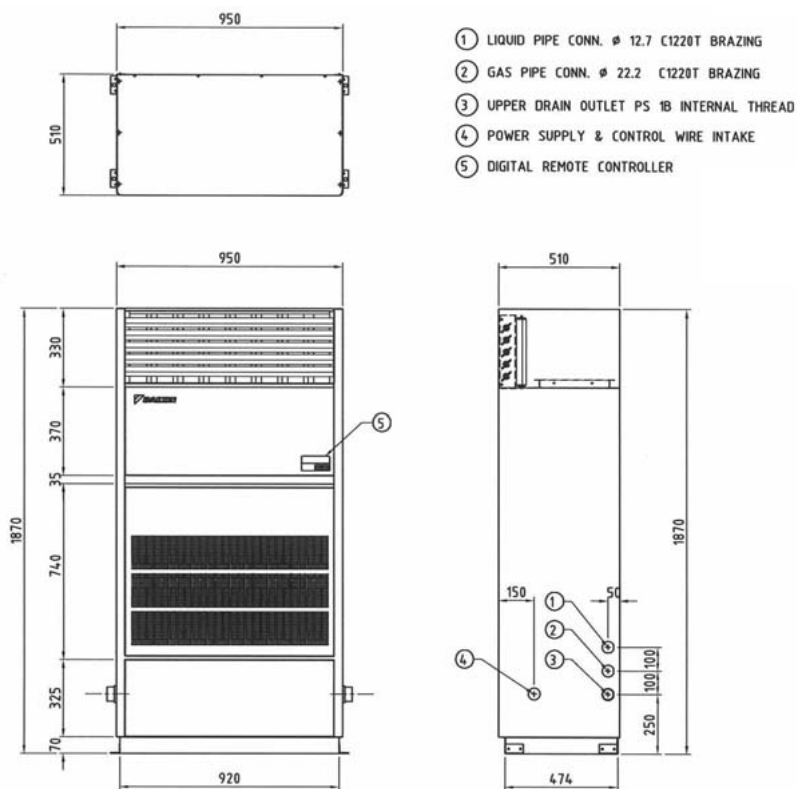
FVGR06NV1



Unit (mm)

SDR3150152B

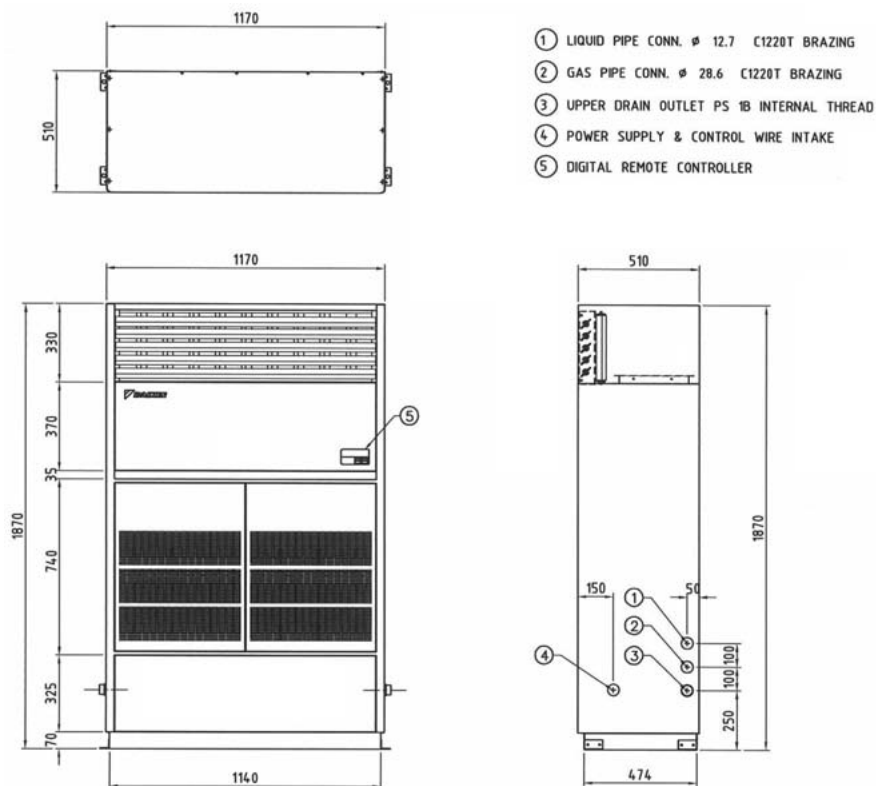
FVGR08NV1



Unit (mm)

SDR3150153C

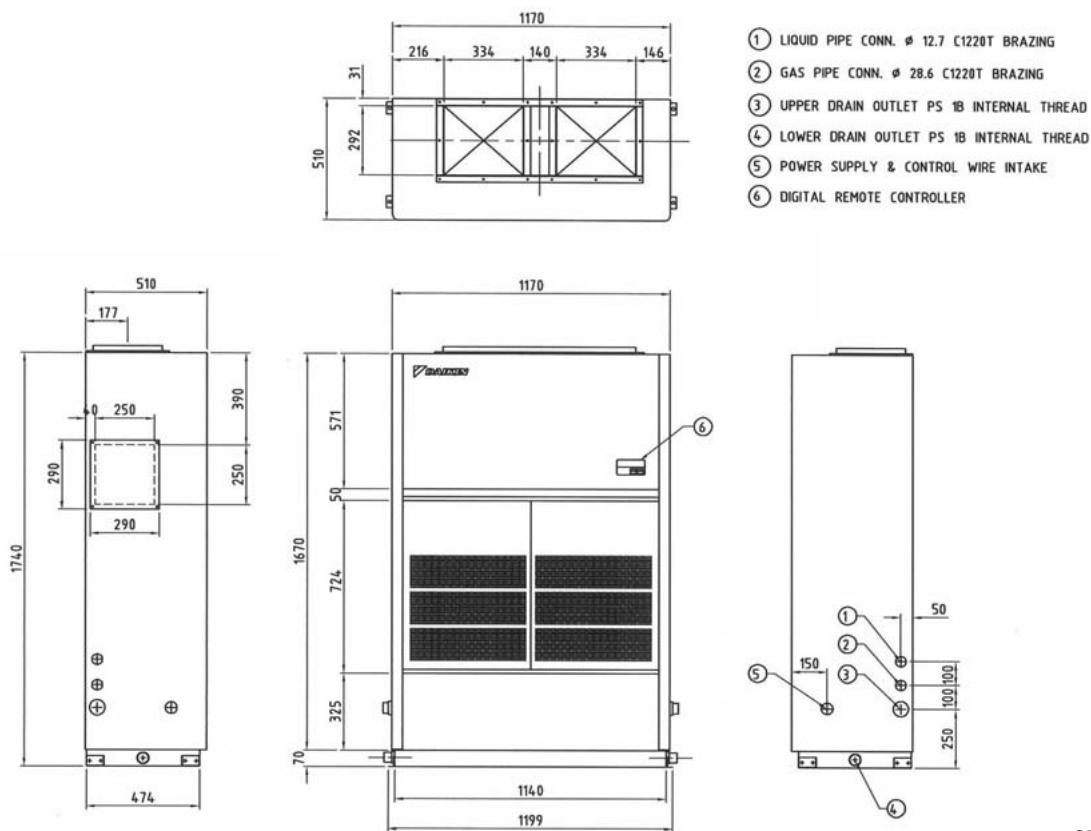
FVGR10NV1



Unit (mm)

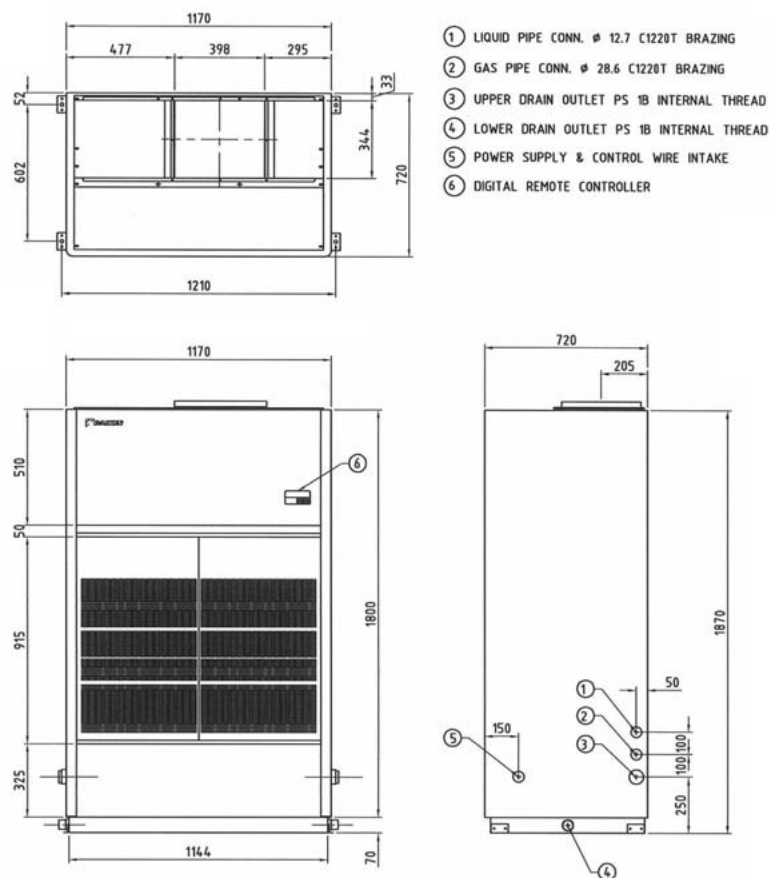
SDR3150154C

FVPGR10NY1



SDR3150155B

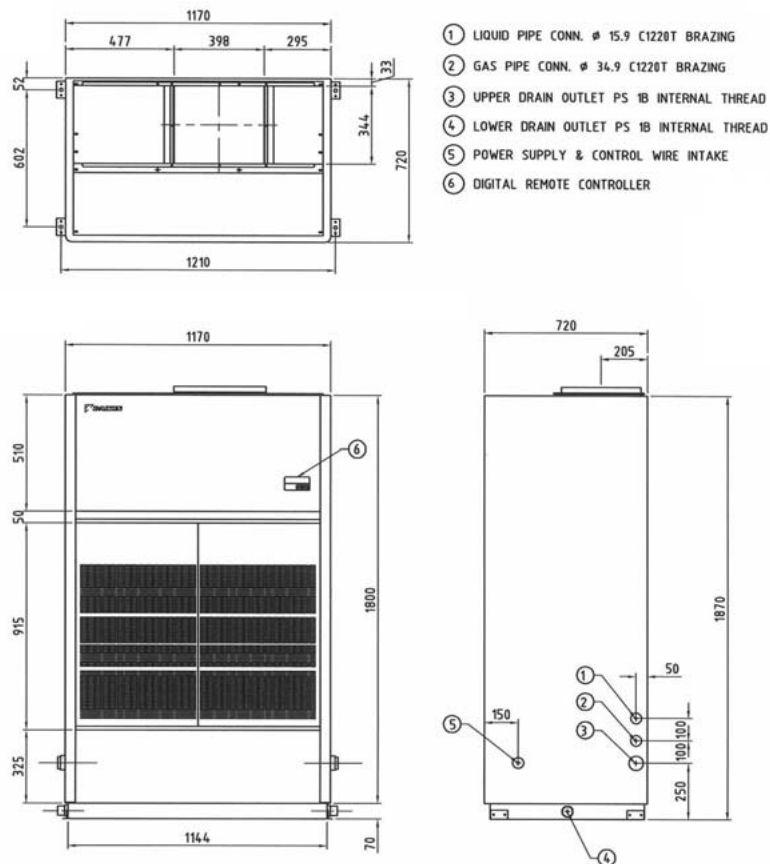
FVPGR13NY1



SDR3150156B

FVPGR15NY1

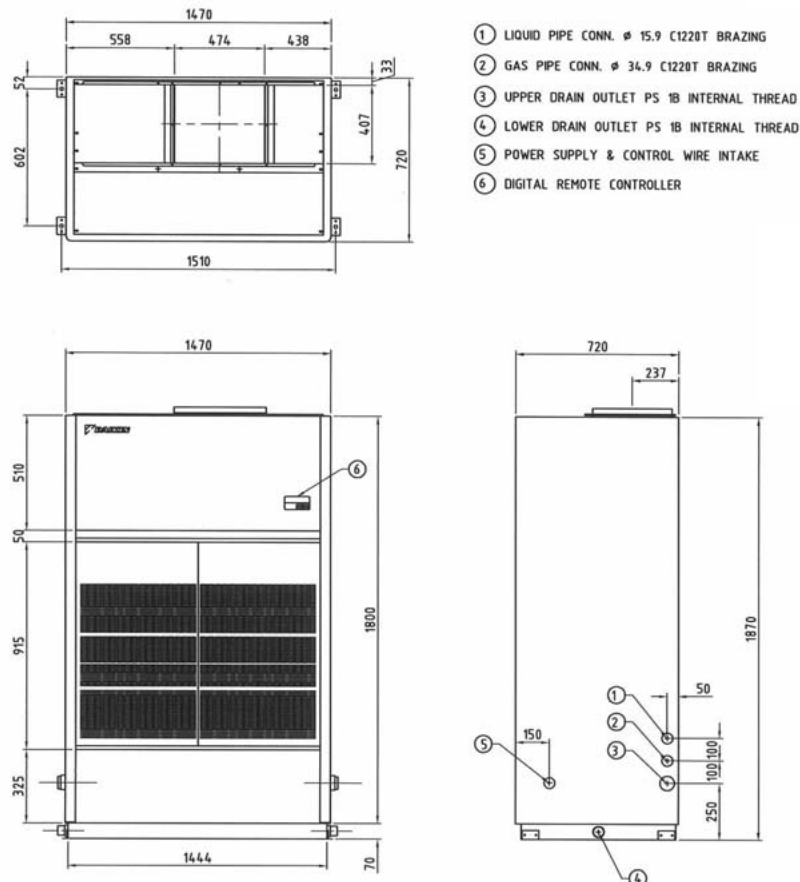
Unit (mm)



SDR3150157B

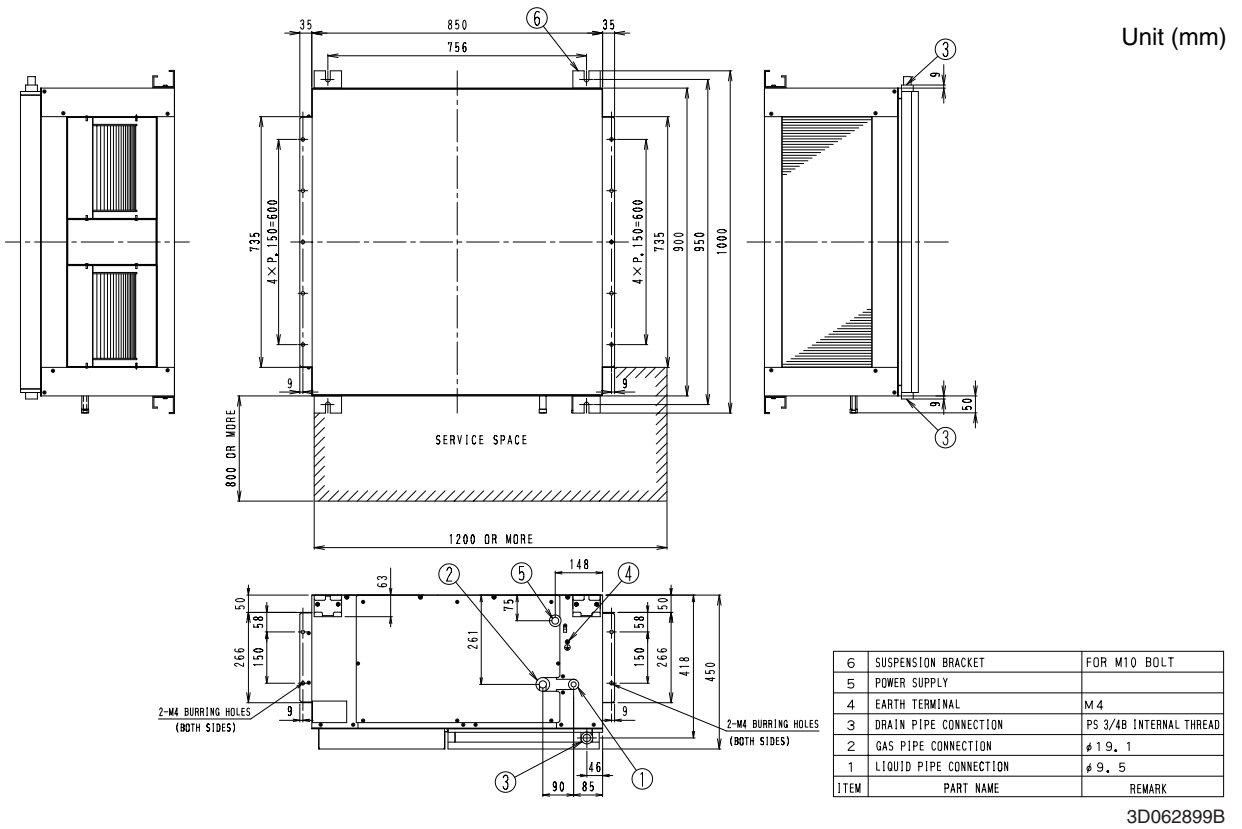
FVPGR18NY1 / FVPGR20NY1

Unit (mm)

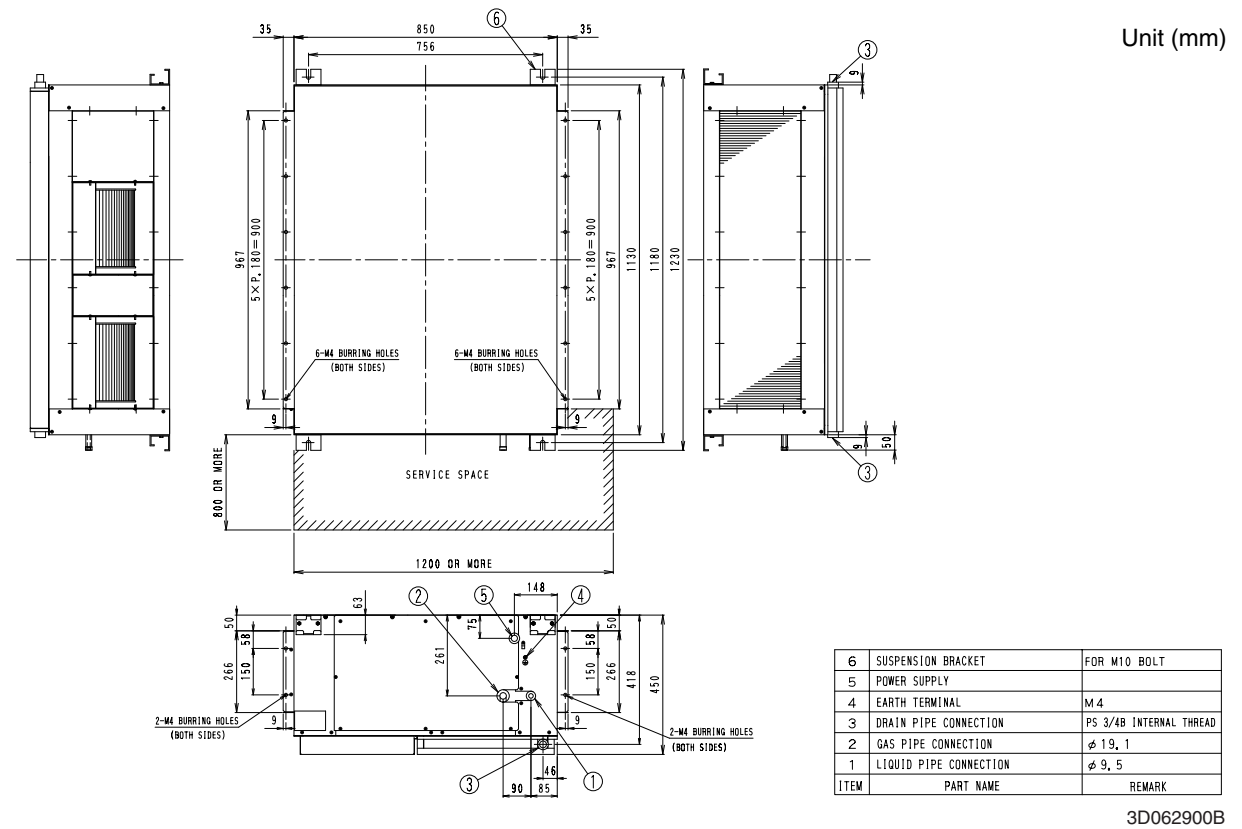


SDR3150158B

FDR05NY1

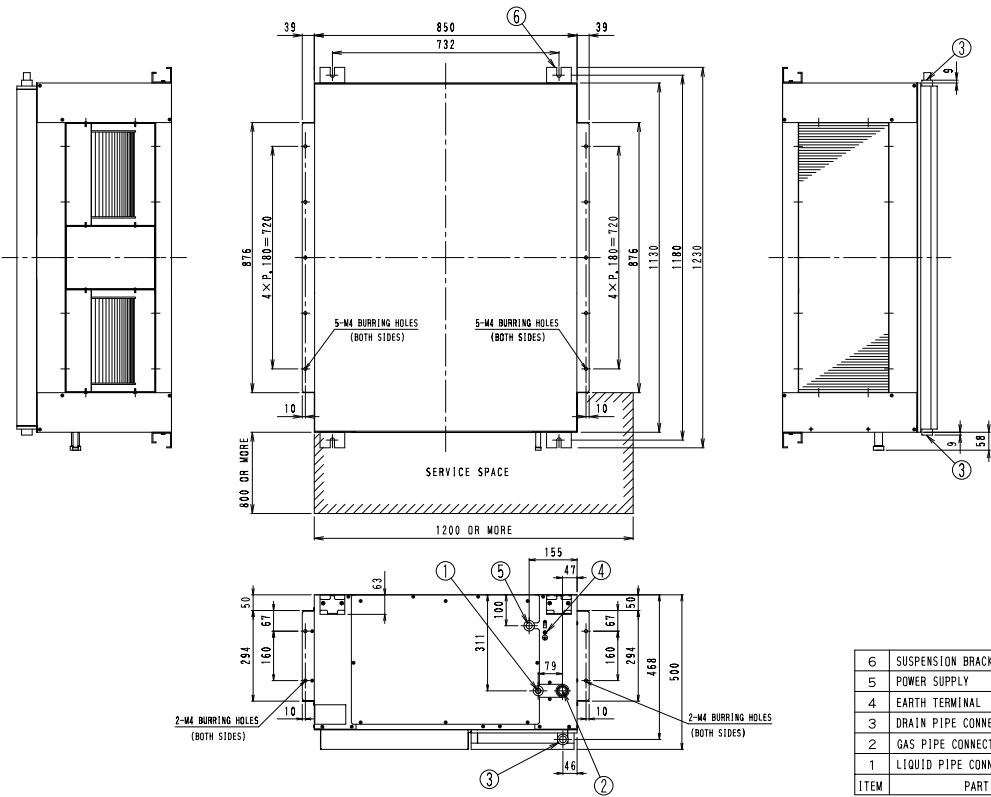


FDR06NY1



FDR08NY1

Unit (mm)

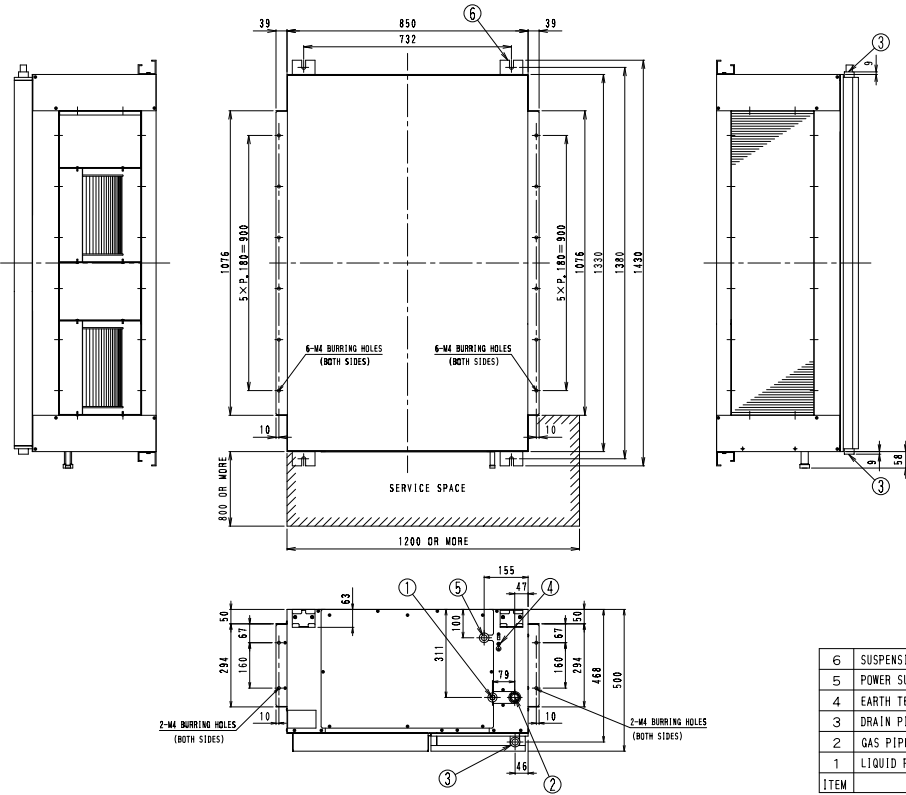


6	SUSPENSION BRACKET	FOR M10 BOLT
5	POWER SUPPLY	
4	EARTH TERMINAL	M4
3	DRAIN PIPE CONNECTION	PS 3/4B INTERNAL THREAD
2	GAS PIPE CONNECTION	φ 22, 2
1	LIQUID PIPE CONNECTION	φ 12, 7
ITEM	PART NAME	REMARK

3D062901B

FDR10NY1

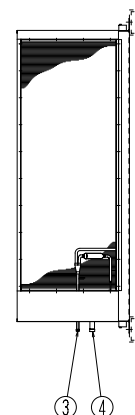
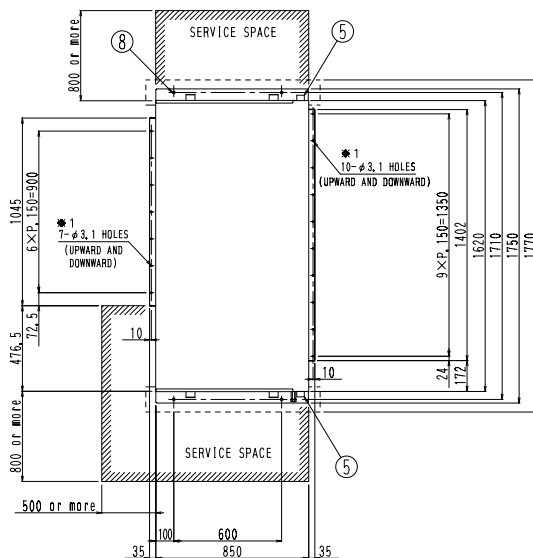
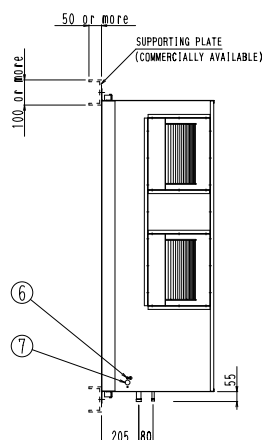
Unit (mm)



6	SUSPENSION BRACKET	FOR M10 BOLT
5	POWER SUPPLY	
4	EARTH TERMINAL	M4
3	DRAIN PIPE CONNECTION	PS 3/4B INTERNAL THREAD
2	GAS PIPE CONNECTION	φ 28, 6
1	LIQUID PIPE CONNECTION	φ 12, 7
ITEM	PART NAME	REMARK

3D062902B

FDR13NY1



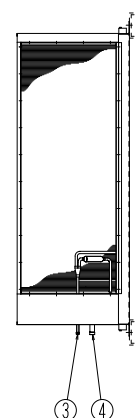
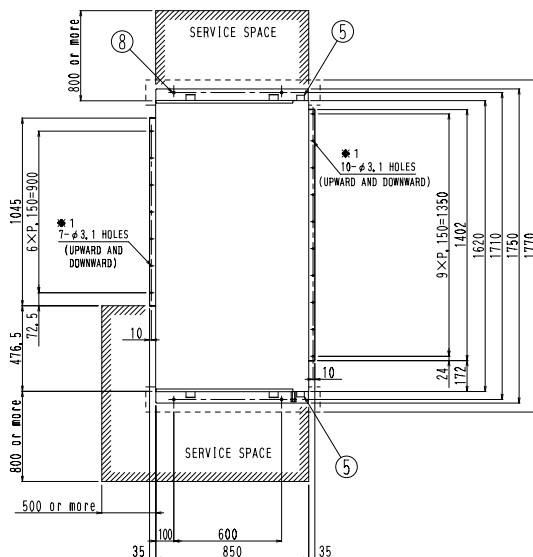
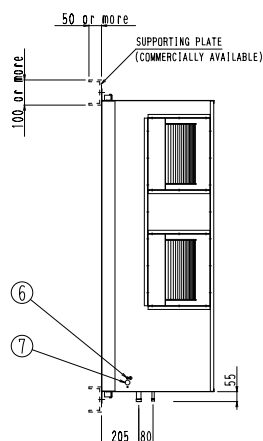
Unit (mm)

NOTE)1, * 1: PREPARED HOLES FOR M4 TAPPING SCREW.

8	THE HOLES FOR ANCHOR BOLTS	4- ϕ 15 HOLES (FOR M12)
7	POWER SUPPLY INTAKE	ϕ 27 HOLE
6	EARTH TERMINAL	M5
5	DRAIN PIPE CONNECTION	PS 1B INTERNAL THREAD
4	GAS PIPE CONNECTION	ϕ 28, 6
3	LIQUID PIPE CONNECTION	ϕ 12, 7
2	EVAPORATOR AIR OUTLET CONNECTION	FOR SUPPLY DUCT
1	EVAPORATOR AIR INLET CONNECTION	FOR RETURN DUCT
ITEM	PART NAME	REMARK

3D062912B

FDR15NY1



Unit (mm)

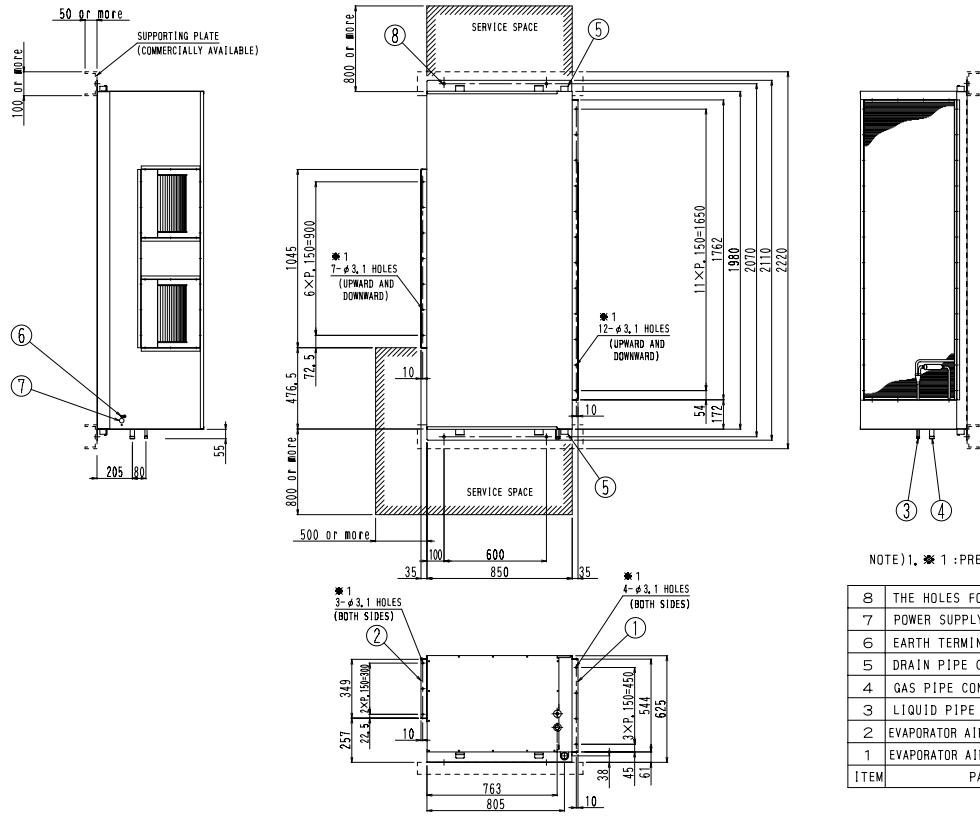
NOTE)1, * 1: PREPARED HOLES FOR M4 TAPPING SCREW.

8	THE HOLES FOR ANCHOR BOLTS	4- ϕ 15 HOLES (FOR M12)
7	POWER SUPPLY INTAKE	ϕ 27 HOLE
6	EARTH TERMINAL	M5
5	DRAIN PIPE CONNECTION	PS 1B INTERNAL THREAD
4	GAS PIPE CONNECTION	ϕ 34, 9
3	LIQUID PIPE CONNECTION	ϕ 15, 9
2	EVAPORATOR AIR OUTLET CONNECTION	FOR SUPPLY DUCT
1	EVAPORATOR AIR INLET CONNECTION	FOR RETURN DUCT
ITEM	PART NAME	REMARK

3D062913B

FDR18NY1 / FDR20NY1

Unit (mm)



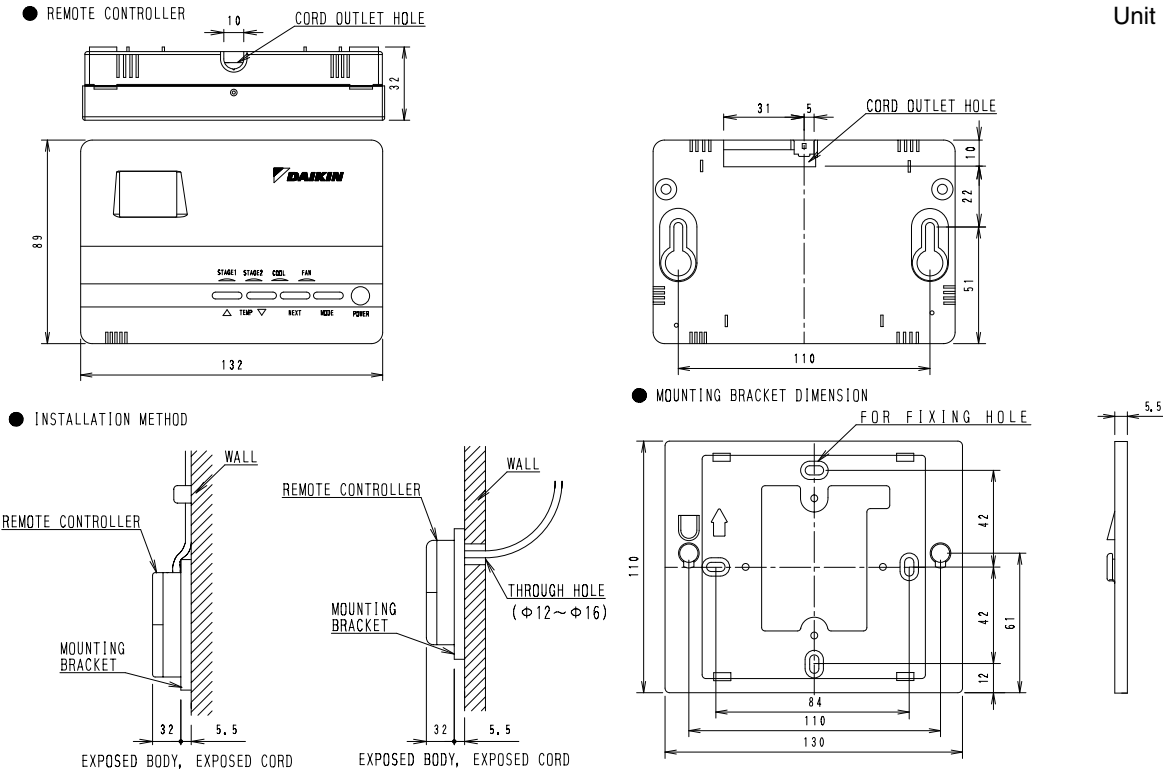
8	THE HOLES FOR ANCHOR BOLTS	4- ϕ 15 HOLES (FOR M12)
7	POWER SUPPLY INTAKE	ϕ 27 HOLE
6	EARTH TERMINAL	M5
5	DRAIN PIPE CONNECTION	PS 1B INTERNAL THREAD
4	GAS PIPE CONNECTION	ϕ 34.9
3	LIQUID PIPE CONNECTION	ϕ 15.9
2	EVAPORATOR AIR OUTLET CONNECTION	FOR SUPPLY DUCT
1	EVAPORATOR AIR INLET CONNECTION	FOR RETURN DUCT
ITEM	PART NAME	REMARK

3D062914B

5.1.2 Wired remote controller

BRC1NU64 (for FDR)

Unit (mm)



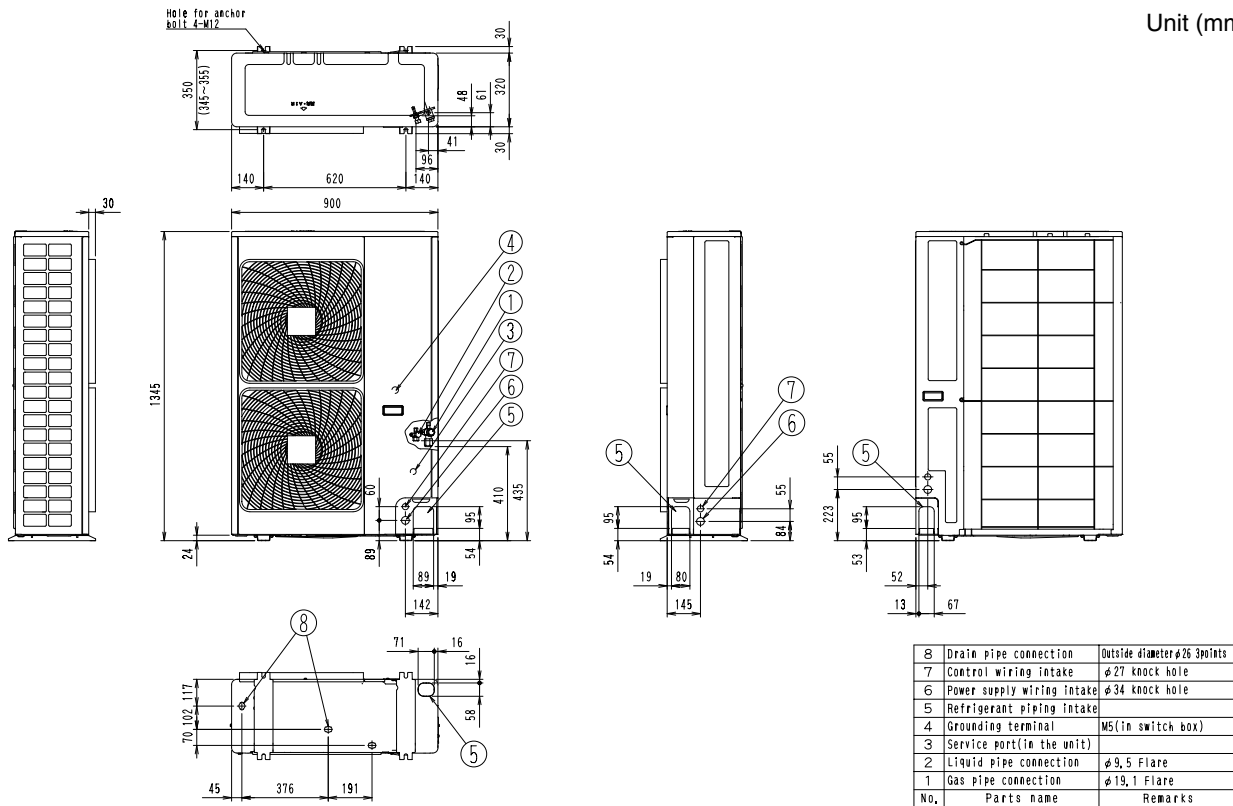
3D063005

5.1.3 Outdoor unit

RUR05NY1 / RUR06NY1

1

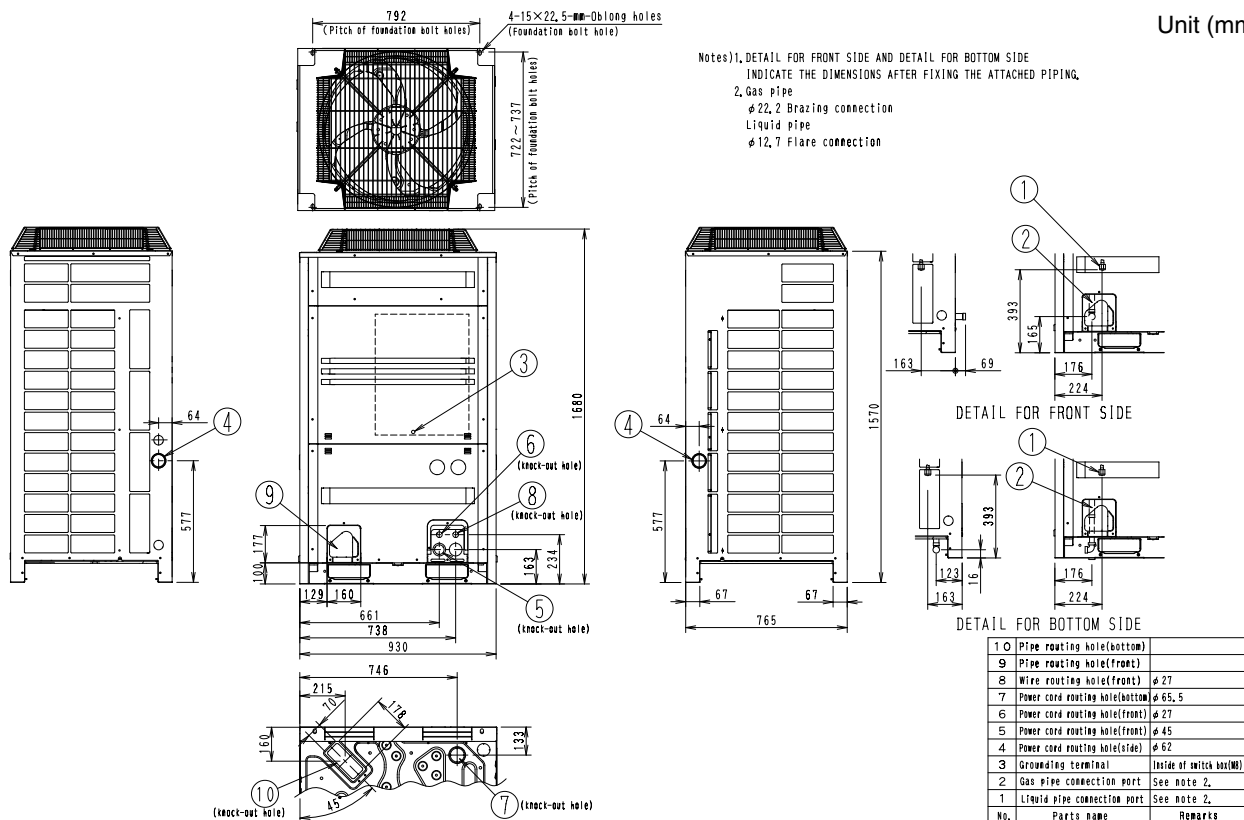
Unit (mm)



3D063042

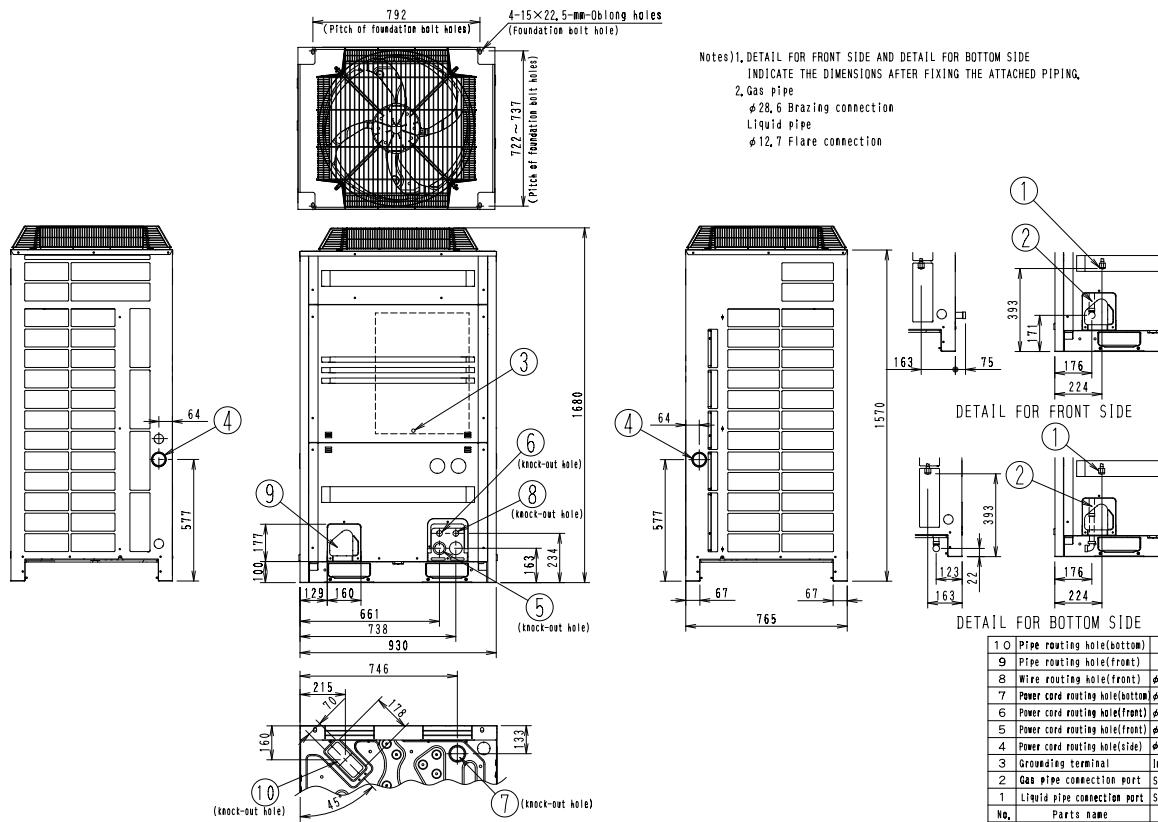
RUR08NY1

Unit (mm)



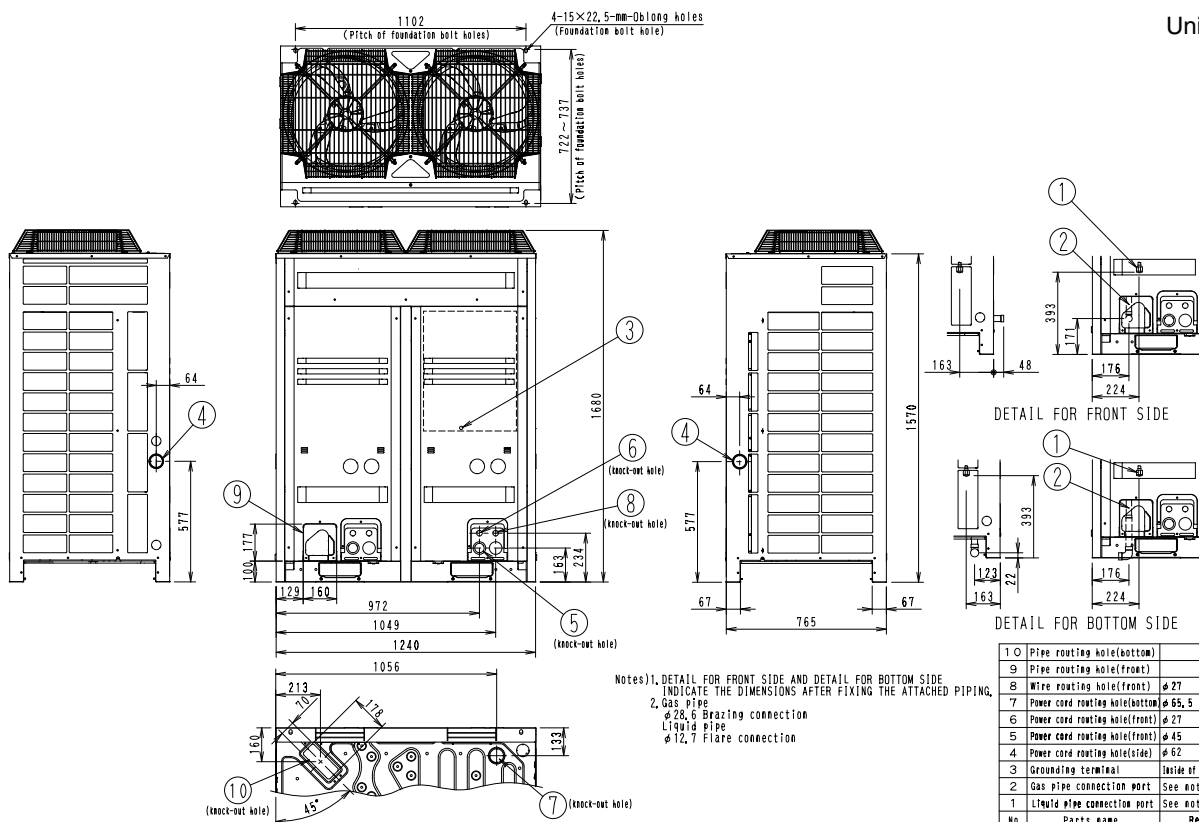
3D062886A

RUR10NY1



3D062887A

RUR13NY1

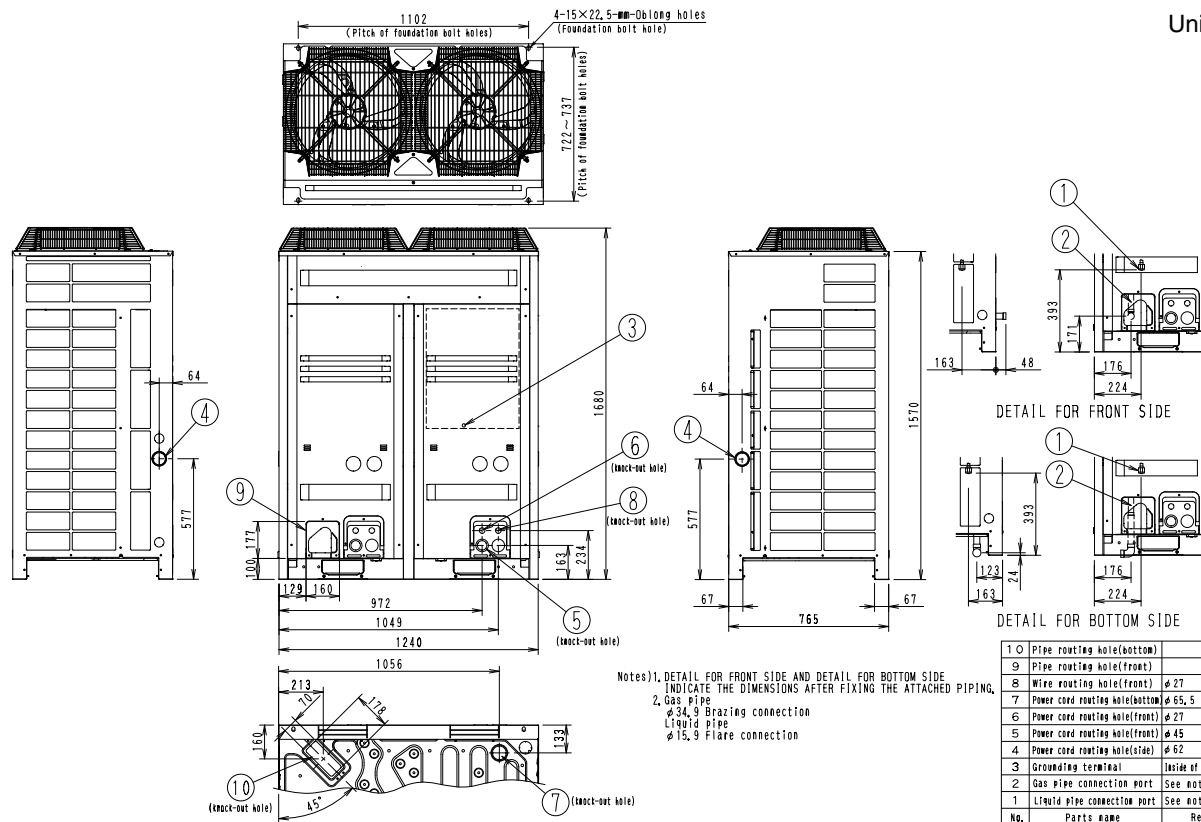


3D062890A

RUR15NY1 / RUR18NY1 / RUR20NY1

Unit (mm)

1

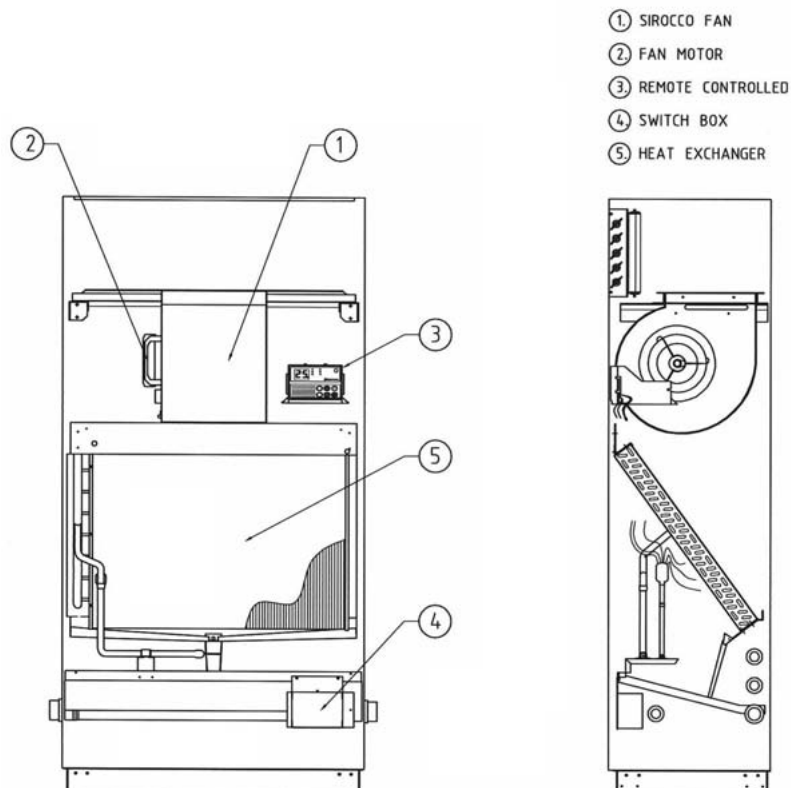


3D062891A

5.2 Assembly

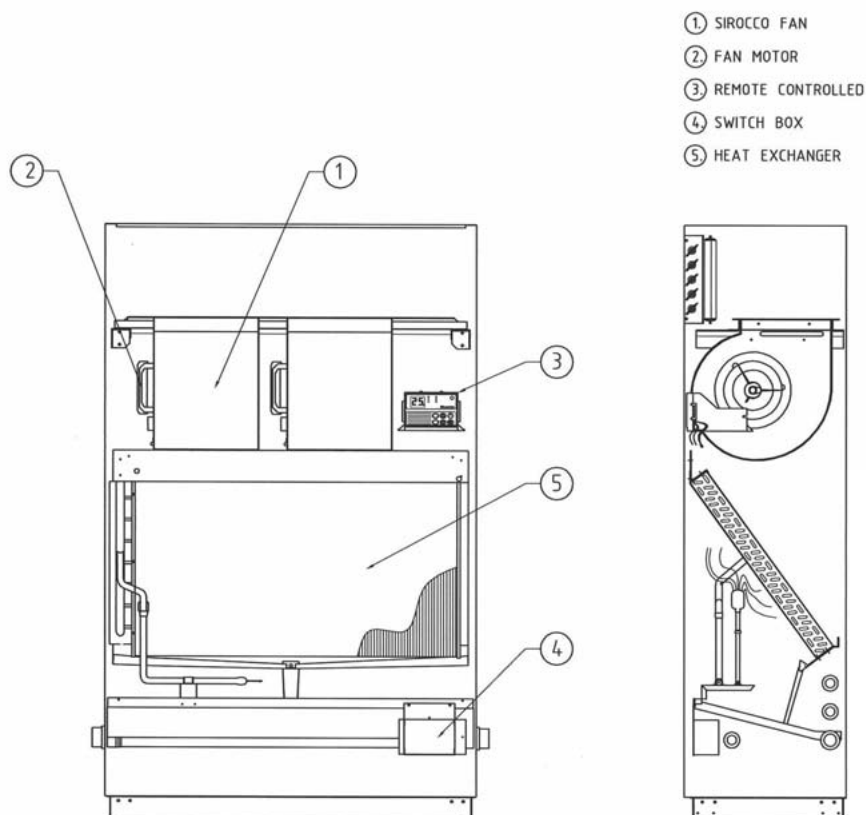
5.2.1 Indoor unit

FVGR05NV1 / FVGR06NV1 / FVGR08NV1



SDR3140064

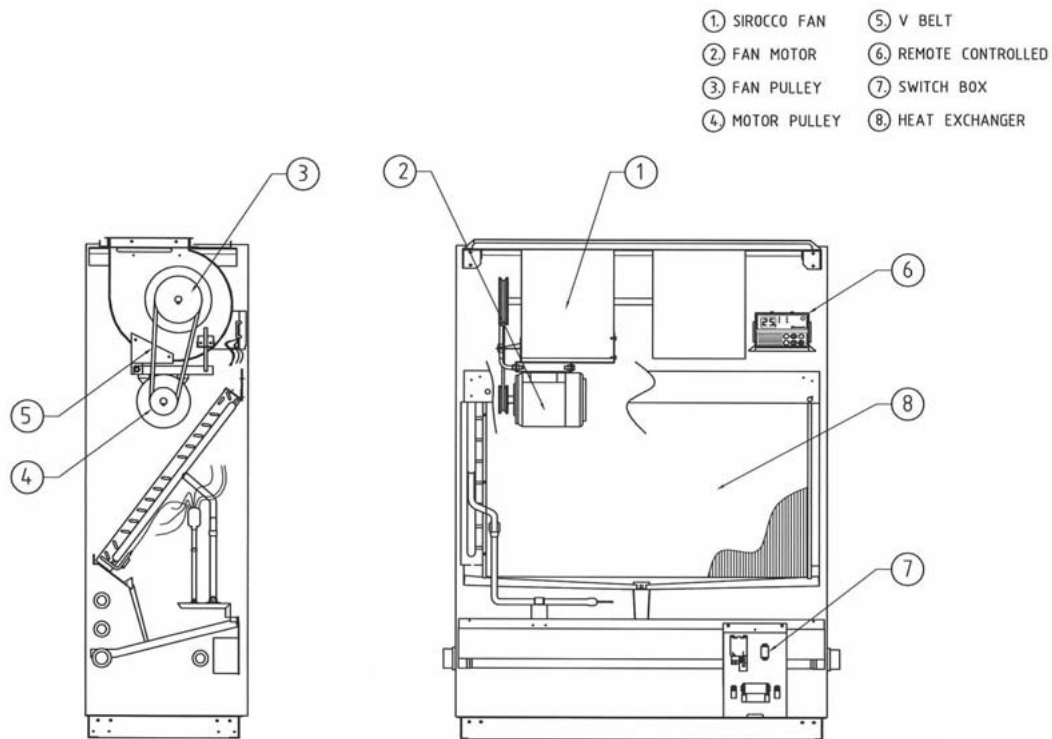
FVGR10NV1



SDR3140065

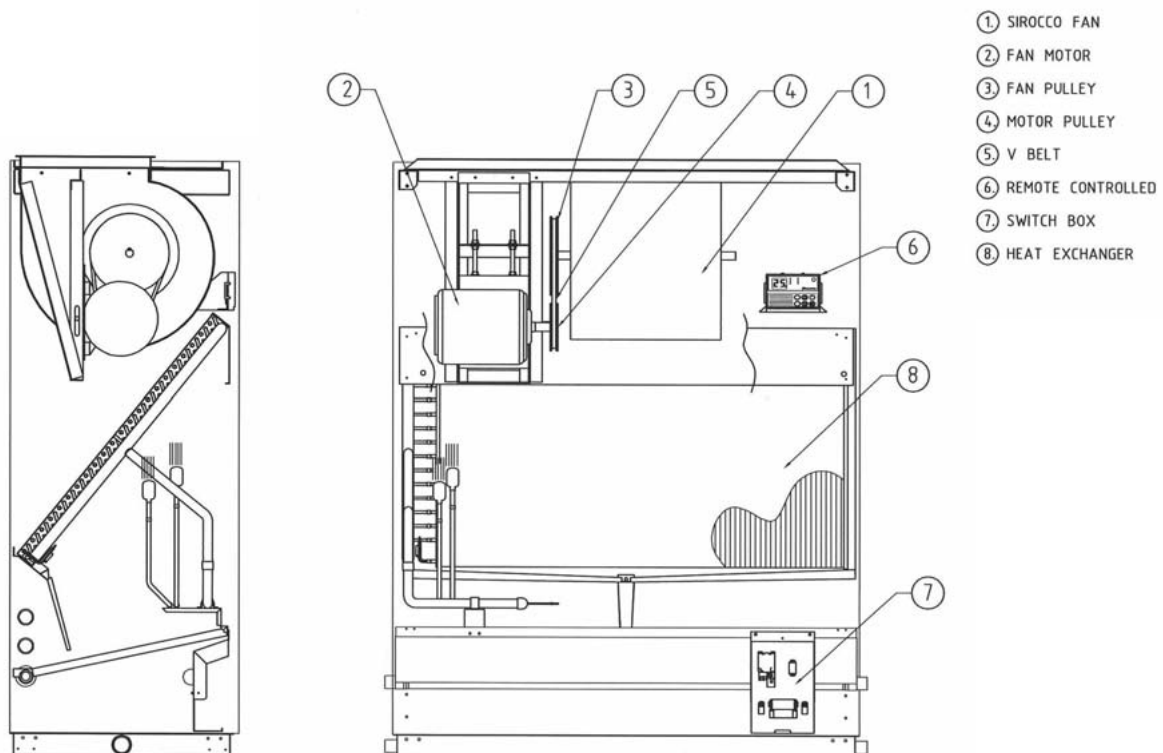
FVPGR10NY1

1



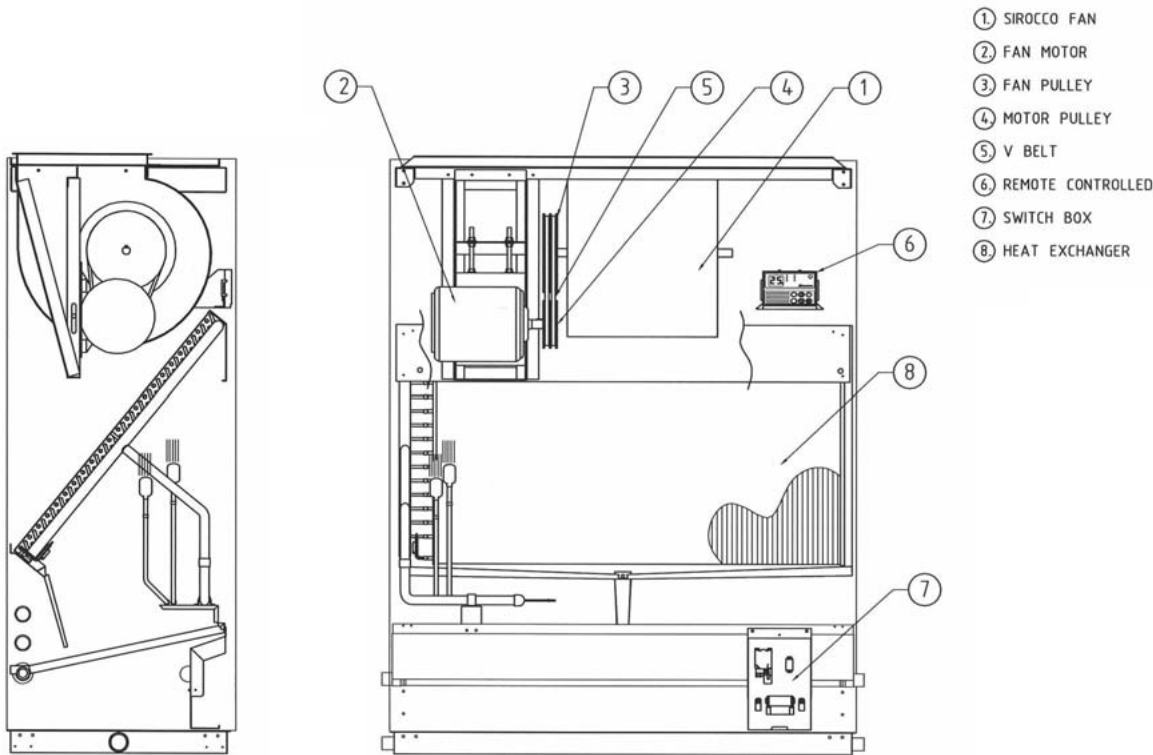
SDR3140066

FVPGR13NY1 / FVPGR15NY1



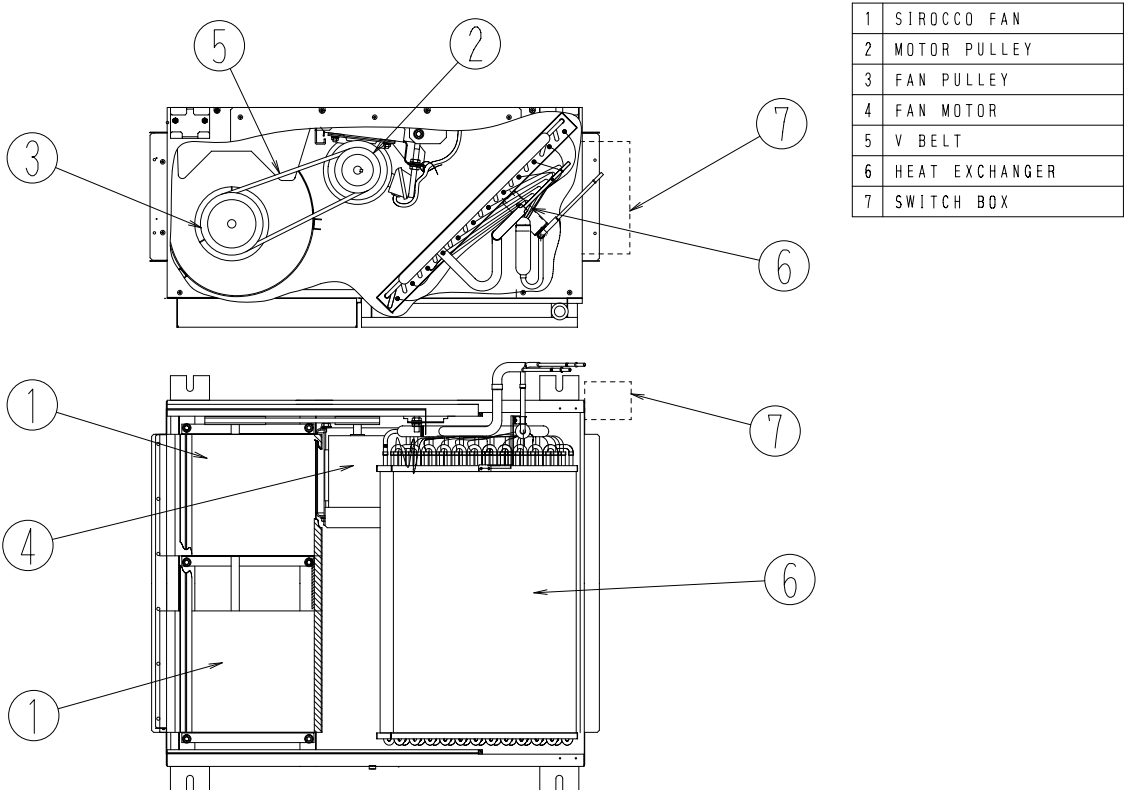
SDR3140067

FVPGR18NY1 / FVPGR20NY1



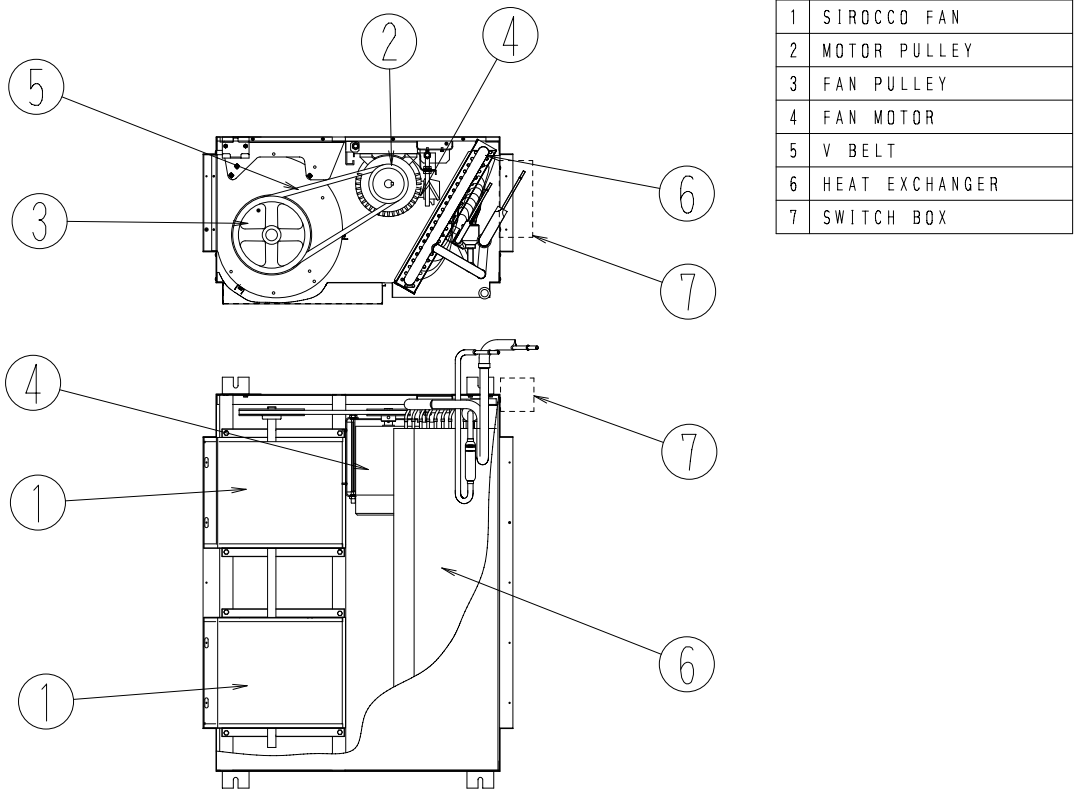
SDR3140068

FDR05NY1 / FDR06NY1



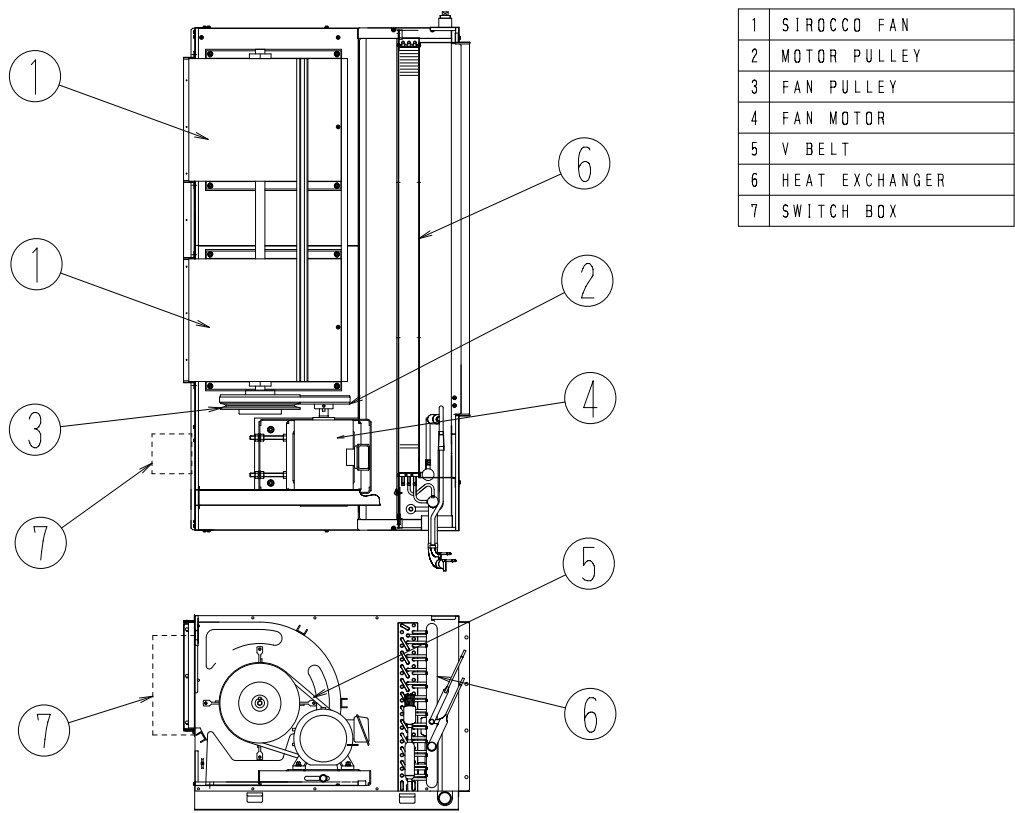
3D064233

FDR08NY1 / FDR10NY1



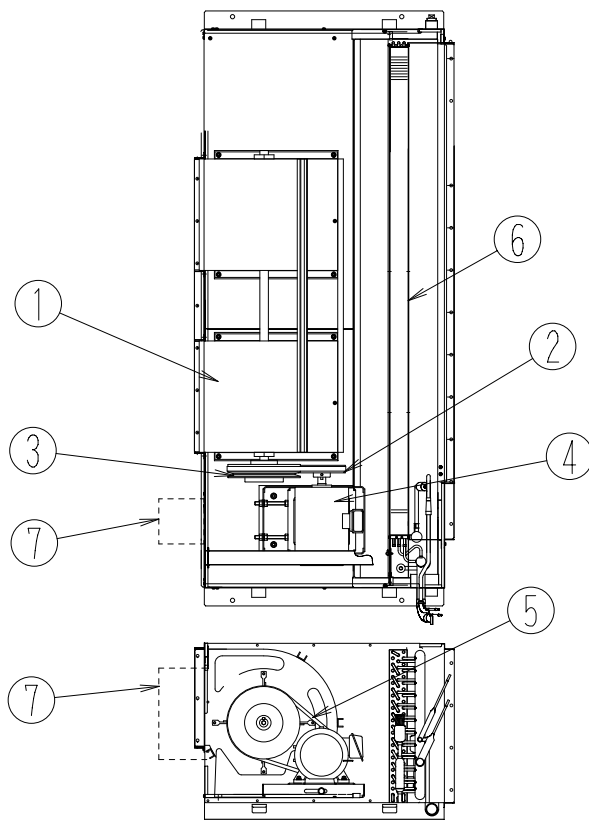
3D064263

FDR13NY1 / FDR15NY1



3D064234

FDR18NY1 / FDR20NY1



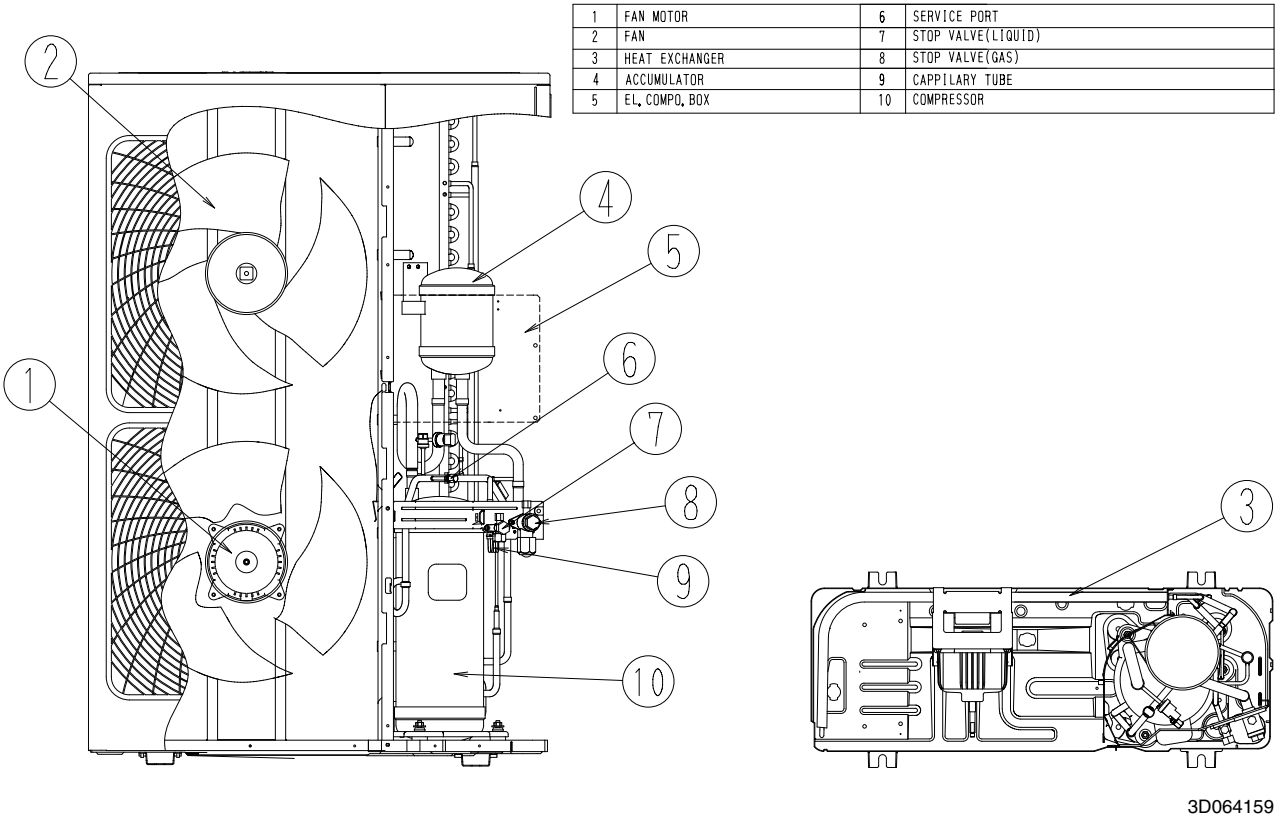
1	SIROCCO FAN
2	MOTOR PULLEY
3	FAN PULLEY
4	FAN MOTOR
5	V BELT
6	HEAT EXCHANGER
7	SWITCH BOX

3D064236

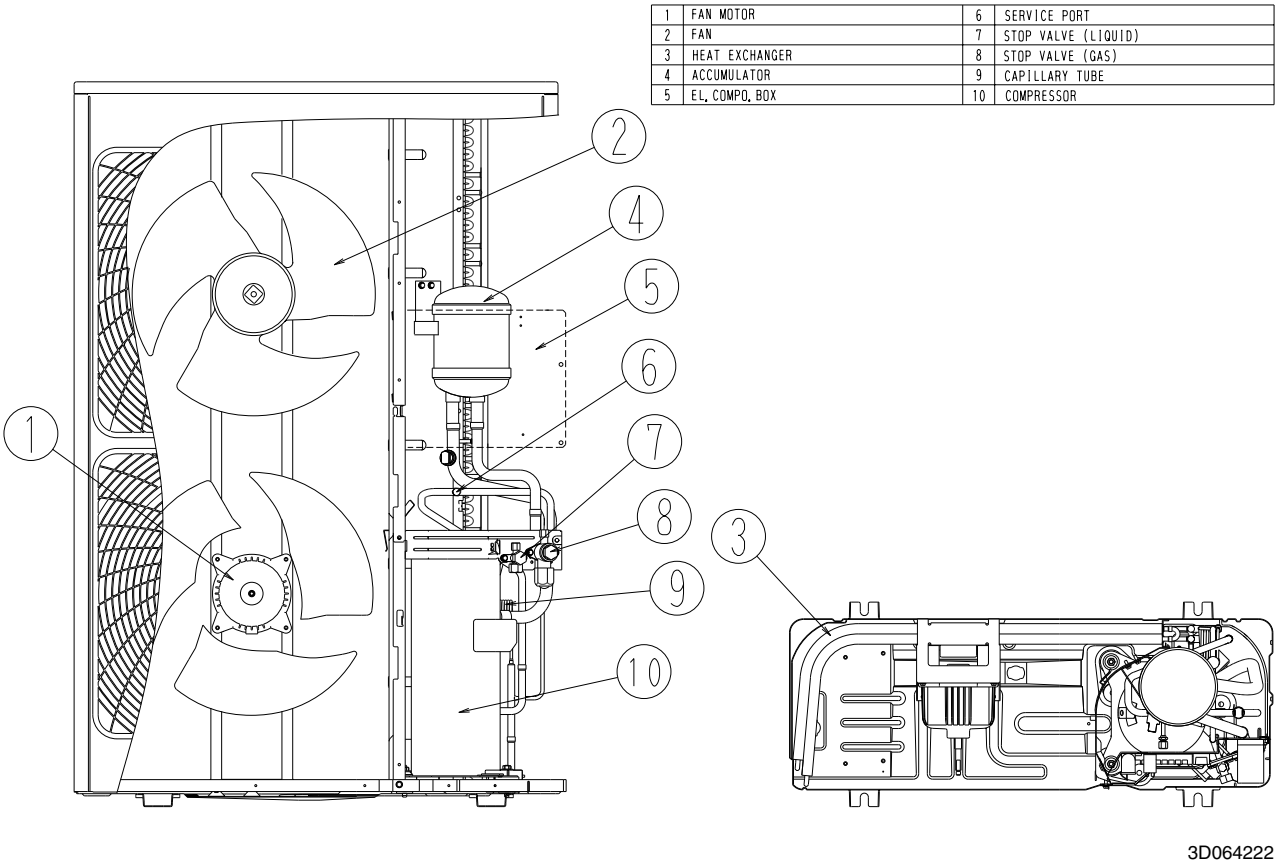
5.2.2 Outdoor unit

RUR05NY1

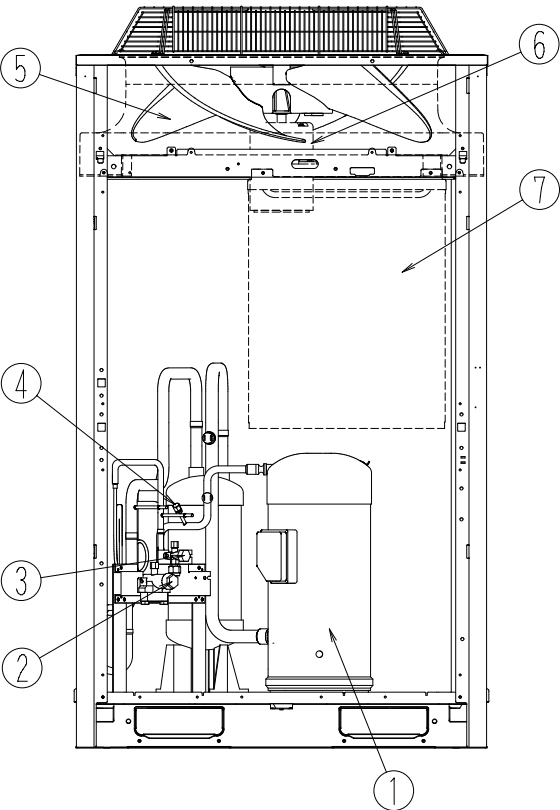
1



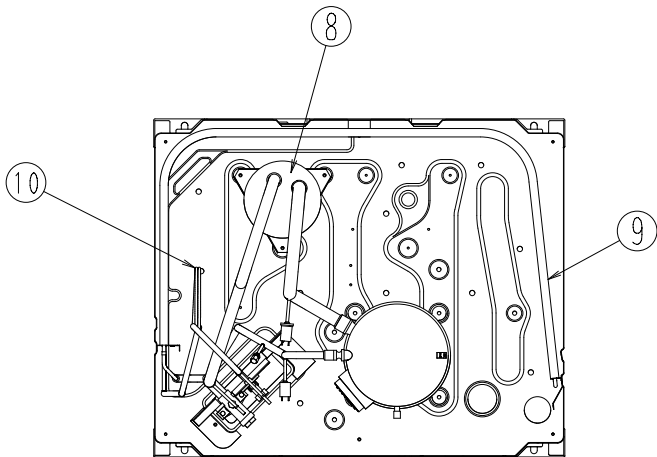
RUR06NY1



RUR08NY1

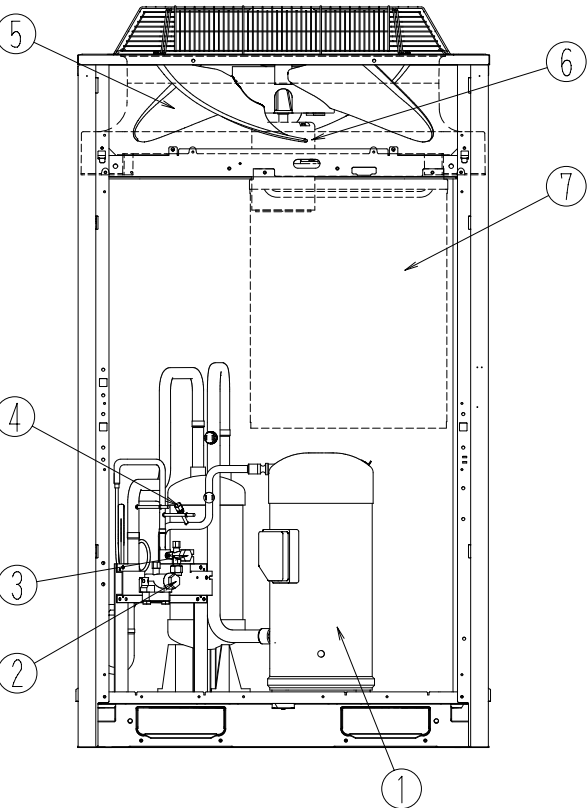


1	COMPRESSOR	7	EL. COMPO. BOX
2	STOP VALVE(GAS)	8	ACCUMULATOR
3	STOP VALVE(LIQUID)	9	HEAT EXCHANGER
4	SERVICE PORT	10	CAPILLARY TUBE
5	FAN		
6	FAN MOTOR		

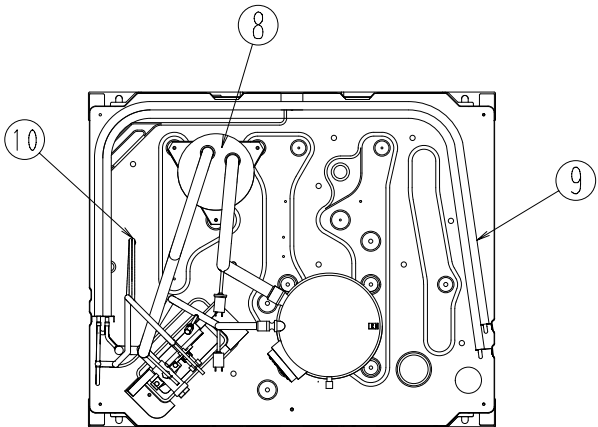


3D064134

RUR10NY1



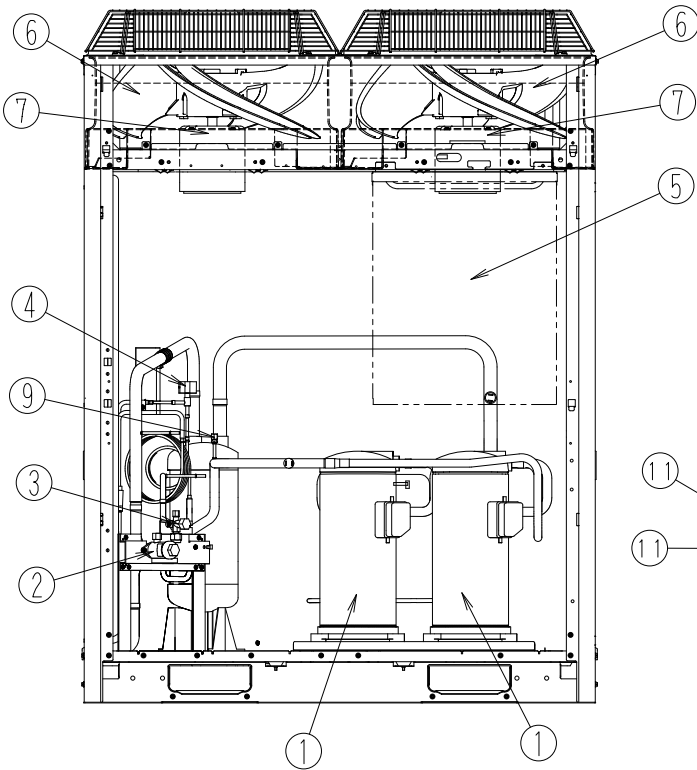
1	COMPRESSOR	6	FAN MOTOR
2	STOP VALVE(GAS)	7	EL. COMPO. BOX
3	STOP VALVE(LIQUID)	8	ACCUMULATOR
4	SERVICE PORT	9	HEAT EXCHANGER
5	FAN	10	CAPILLARY TUBE



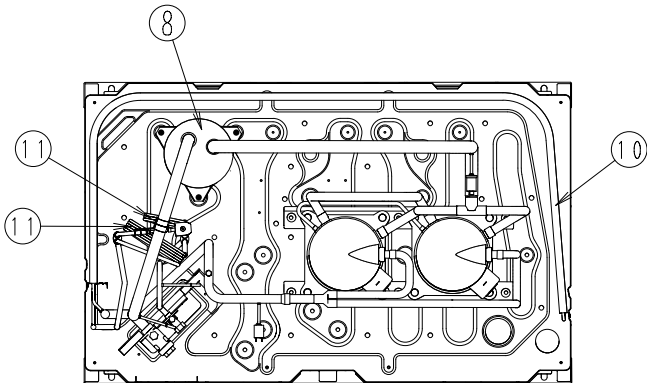
3D064145

RUR13NY1

1

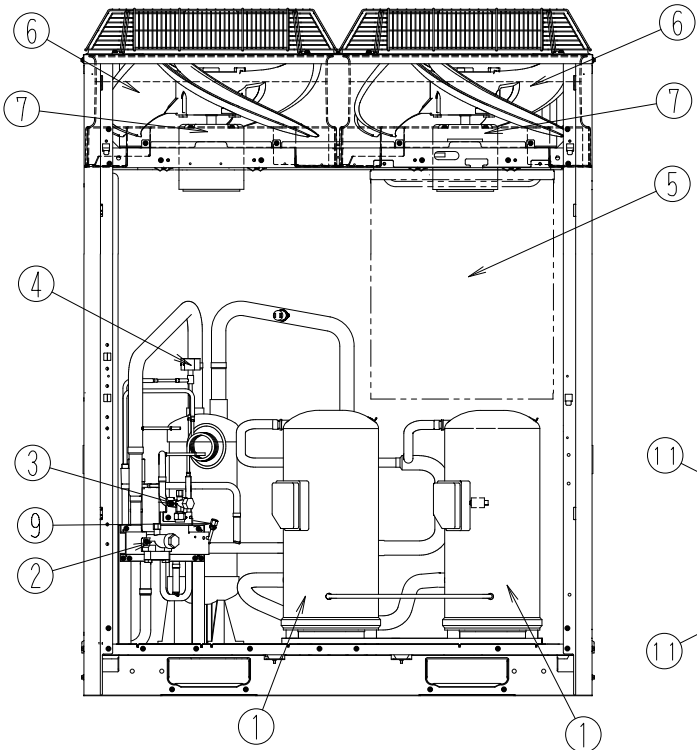


1	COMPRESSOR	7	FAN MOTOR
2	STOP VALVE (GAS)	8	ACCUMULATOR
3	STOP VALVE (LIQUID)	9	SERVICE PORT
4	SOLENOID VALVE	10	HEAT EXCHANGER
5	EL, COMP. BOX	11	CAPILLARY TUBE
6	FAN		

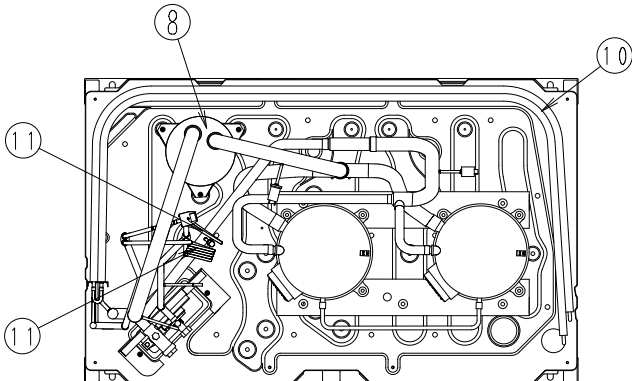


3D064147

RUR15NY1

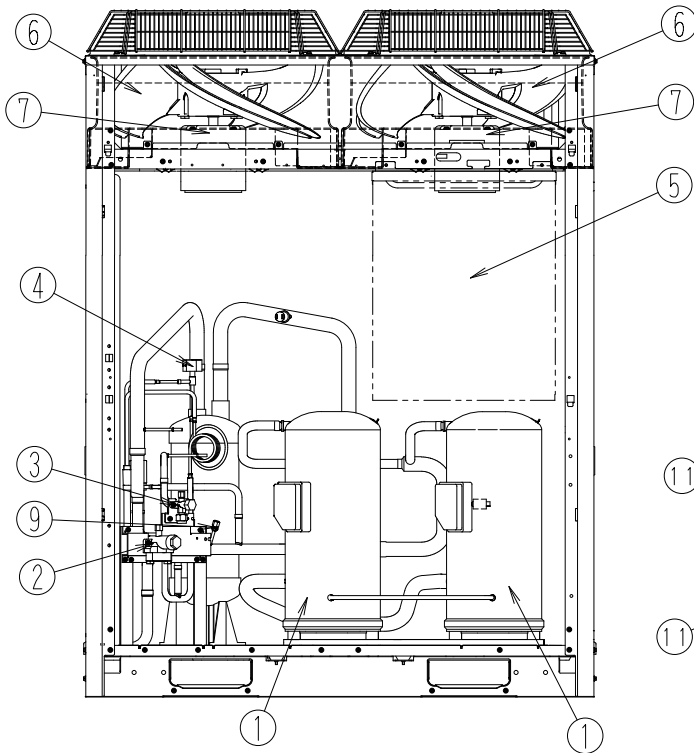


1	COMPRESSOR	7	FAN MOTOR
2	STOP VALVE (GAS)	8	ACCUMULATOR
3	STOP VALVE (LIQUID)	9	SERVICE PORT
4	SOLENOID VALVE	10	HEAT EXCHANGER
5	EL, COMP. BOX	11	CAPILLARY TUBE
6	FAN		

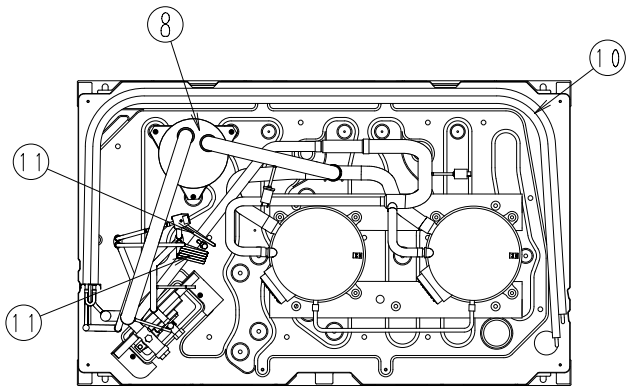


3D064158

RUR18NY1

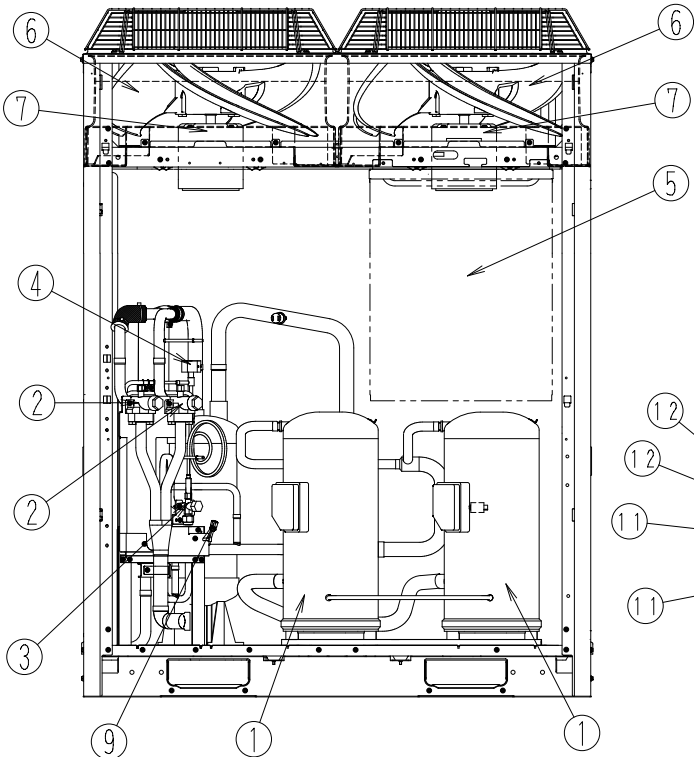


1	COMPRESSOR	7	FAN MOTOR
2	STOP VALVE (GAS)	8	ACCUMULATOR
3	STOP VALVE (LIQUID)	9	SERVICE PORT
4	SOLENOID VALVE	10	HEAT EXCHANGER
5	EL. COMP. BOX	11	CAPILLARY TUBE
6	FAN		

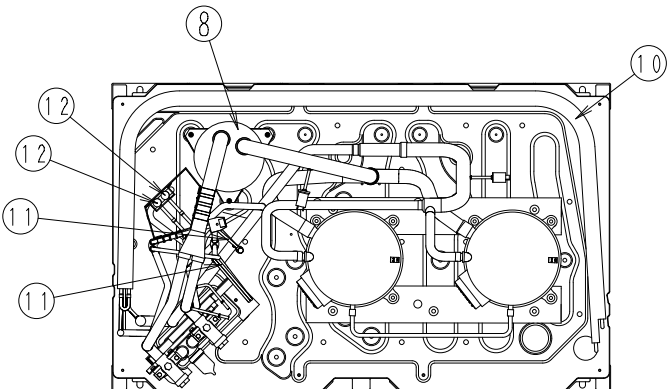


3D064162

RUR20NY1



1	COMPRESSOR	7	FAN MOTOR
2	STOP VALVE (GAS)	8	ACCUMULATOR
3	STOP VALVE (LIQUID)	9	SERVICE PORT
4	SOLENOID VALVE	10	HEAT EXCHANGER
5	EL. COMP. BOX	11	CAPILLARY TUBE
6	FAN	12	HIGH PRESSURE CONTROL VALVE



3D064163A

5.3 Installation service space

1

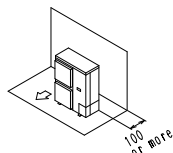
RUR05NY1 / RUR06NY1

INSTALLATION SERVICE SPACE

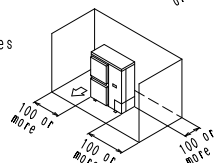
1. Where there is an obstacle on the suction side:

(a) No obstacle above

- (1) Stand-alone installation
• Obstacle on the suction side only

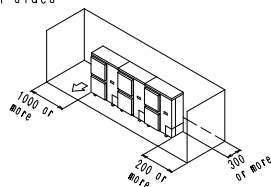


• Obstacle on both sides



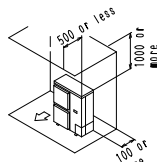
(2) Series installation
(2 or more)

• Obstacle on both sides

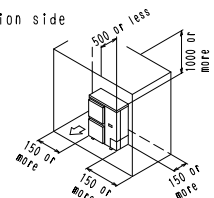


(b) Obstacle above, too

- (1) Stand-alone installation
• Obstacle on the suction side, too

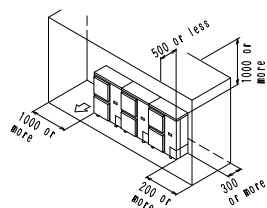


• Obstacle on the suction side and both sides



(2) Series installation
(2 or more)

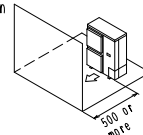
• Obstacle on the suction side and both sides



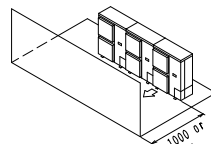
2. Where there is an obstacle on the discharge side:

(a) No obstacle above

- (1) Stand-alone installation

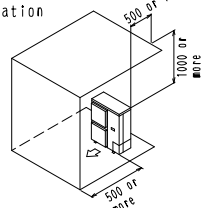


(2) Series installation
(2 or more)

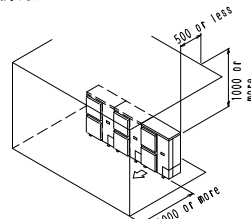


(b) Obstacle above, too

- (1) Stand-alone installation



(2) Series installation
(2 or more)



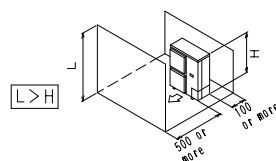
3. Where there are obstacles on both suction and discharge sides:

Pattern 1

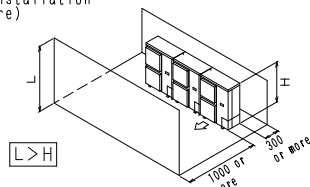
Where the obstacles on the discharge side is higher than the unit:
(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

- (1) Stand-alone installation



(2) Series installation
(2 or more)



3D063043A

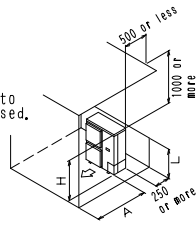
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	750
	$1/2 H < L \leq H$	1000
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.



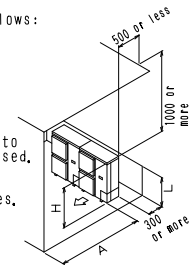
(2) Series installation
(2 or more)

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	1000
	$1/2 H < L \leq H$	1250
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

Only two units can be installed for this series.



Pattern 2

Where the obstacles on the discharge side is lower than the unit:

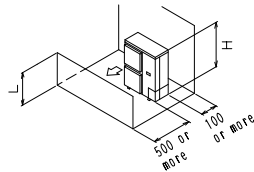
(There is no height limit for obstructions) on the intake side.

(a) No obstacle above

(1) Stand-alone installation

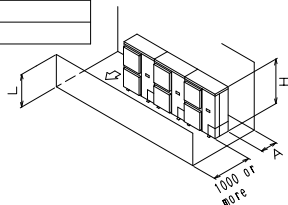
$$L \leq H$$

(2) Series installation
(2 or more)



The relations between H, A and L are as follows:

L	A
$0 < L \leq 1/2 H$	250
$1/2 H < L \leq H$	300



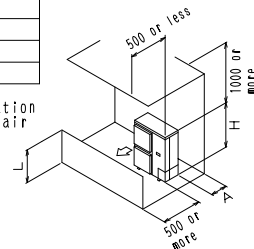
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	100
	$1/2 H < L \leq H$	200
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.



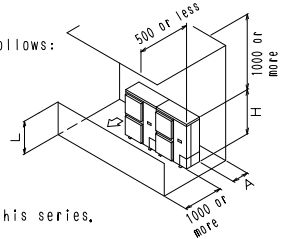
(2) Series installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2 H$	250
	$1/2 H < L \leq H$	300
$H < L$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

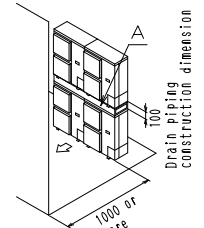
Only two units can be installed for this series.



4. Double-decker installation

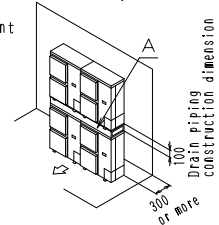
(a) Obstacle on the discharge side
Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two unit.



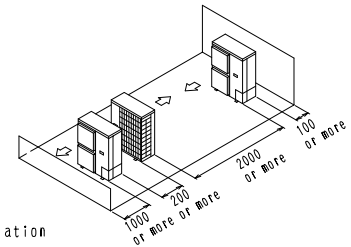
(b) Obstacle on the suction side
Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two unit.



5. Multiple rows of series installation
(on the rooftop, etc.)

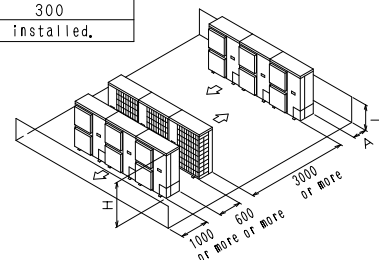
(a) One row of stand-alone installation



(b) Rows of series installation
(2 or more)

The relations between H, A and L are as follows:

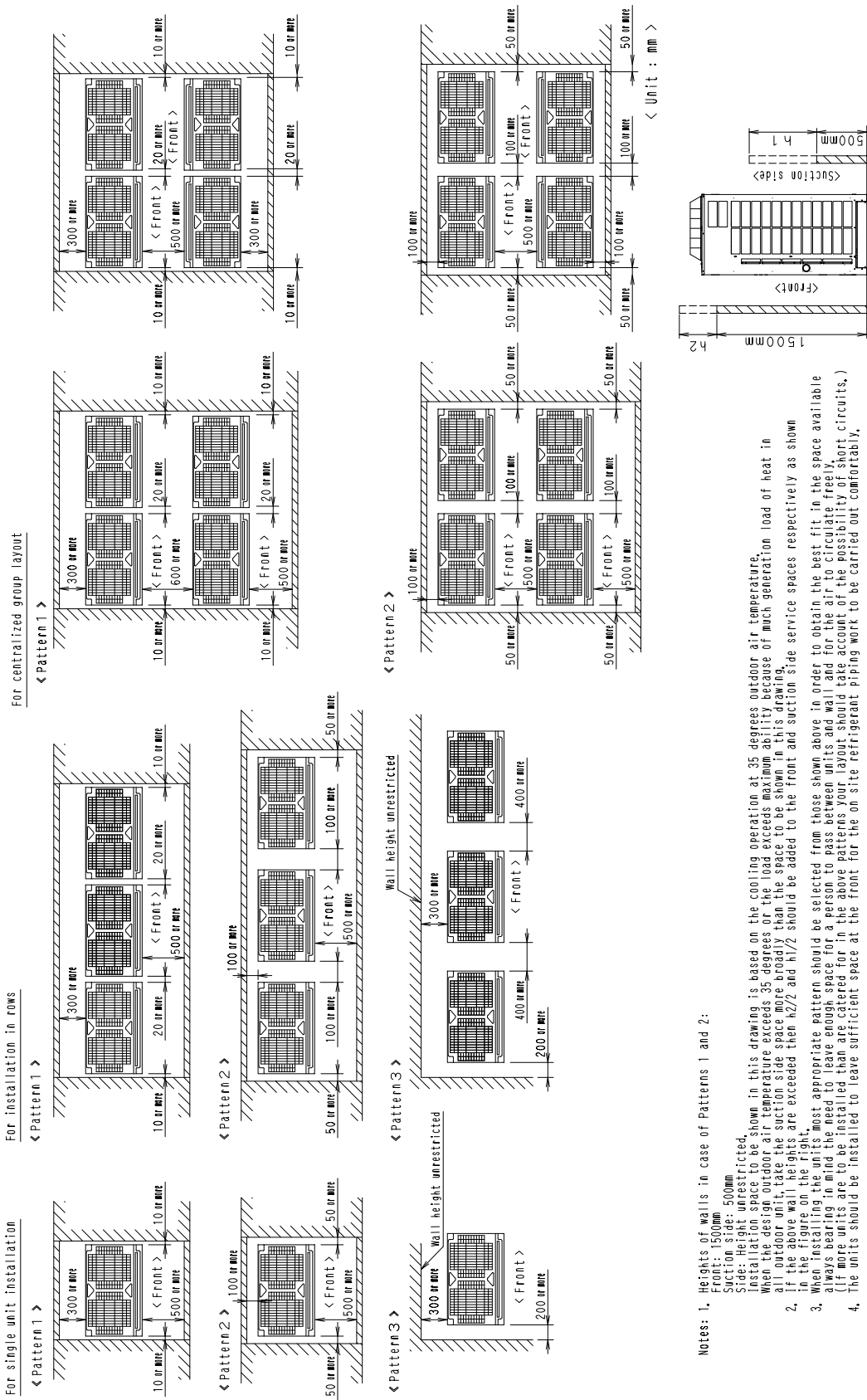
	L	A
$L \leq H$	$0 < L \leq 1/2 H$	200
	$1/2 H < L \leq H$	300
$H < L$	Cannot be installed.	



3D063043A

RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1

1




3D062893

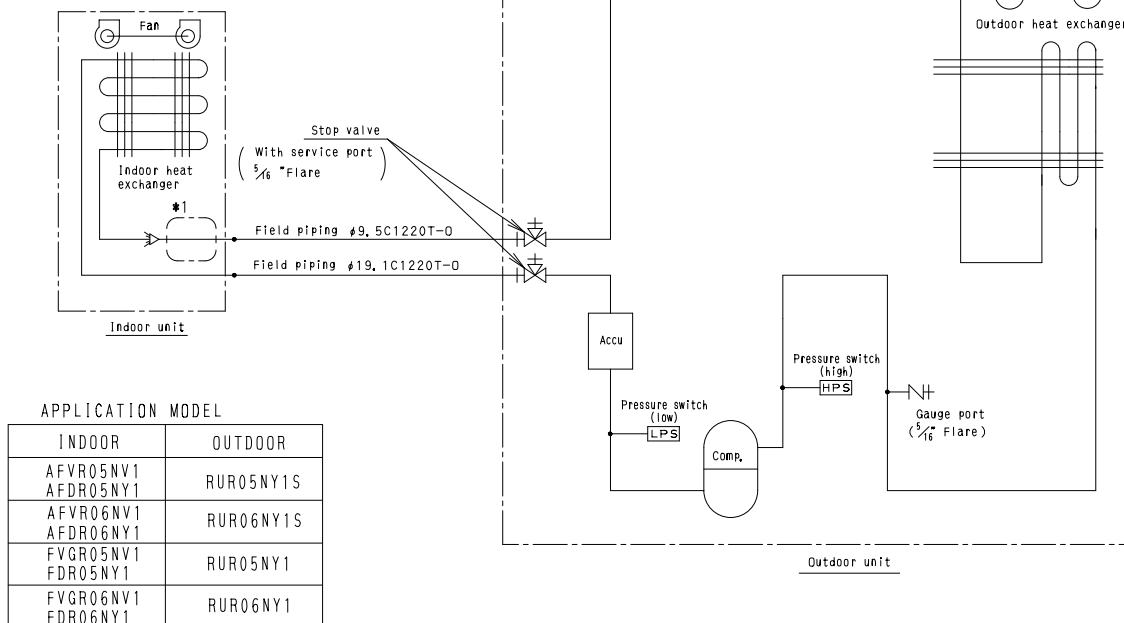
6. Piping diagrams

FVGR05NV1 / FDR05NY1 + RUR05NY1

FVGR06NV1 / FDR06NY1 + RUR06NY1

*1 In case of AFDR~, FDR~model

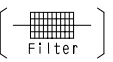

 (For AFVR~, FVGR~ No Filter)

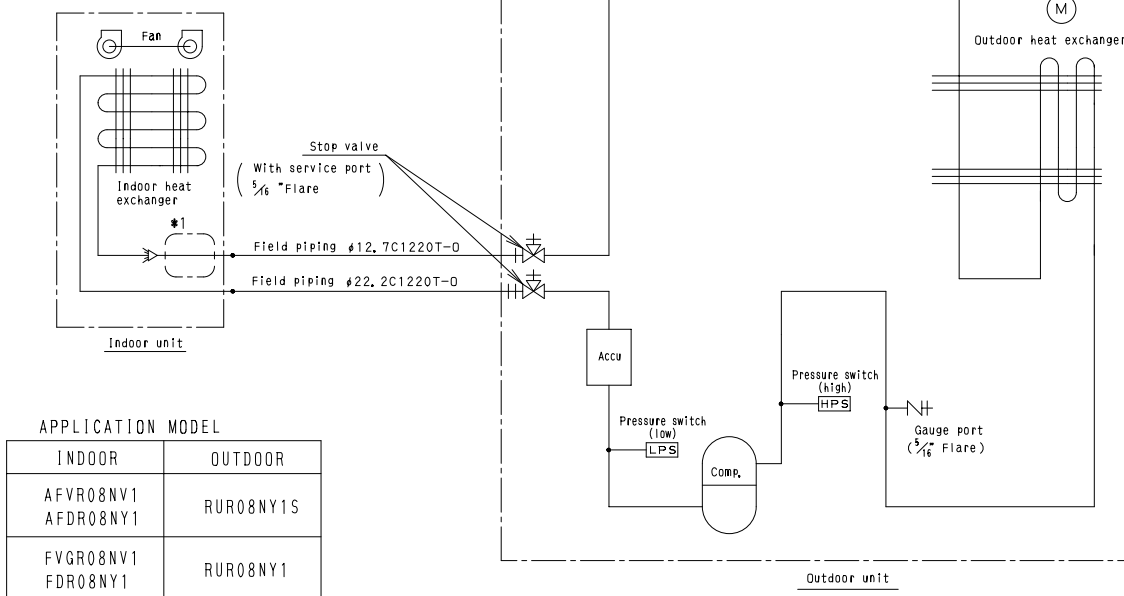


3D063700

FVGR08NV1 / FDR08NY1 + RUR08NY1

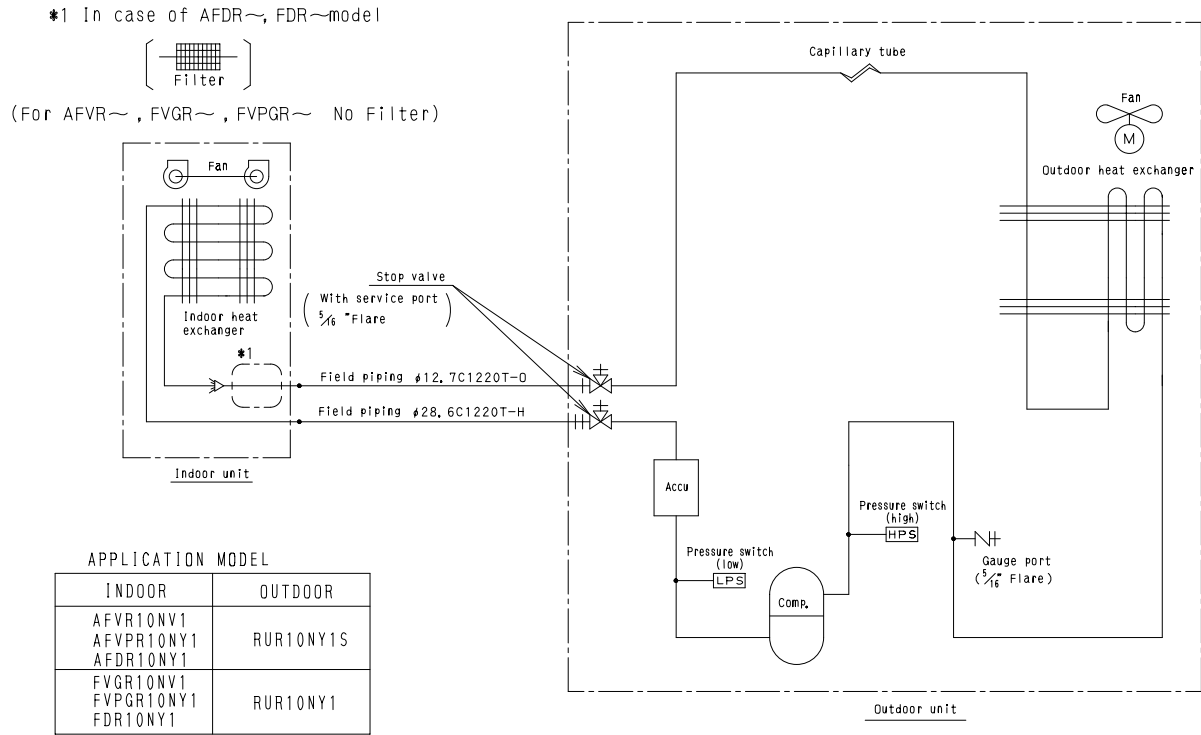
*1 In case of AFDR~, FDR~model


 (For AFVR~, FVGR~ No Filter)



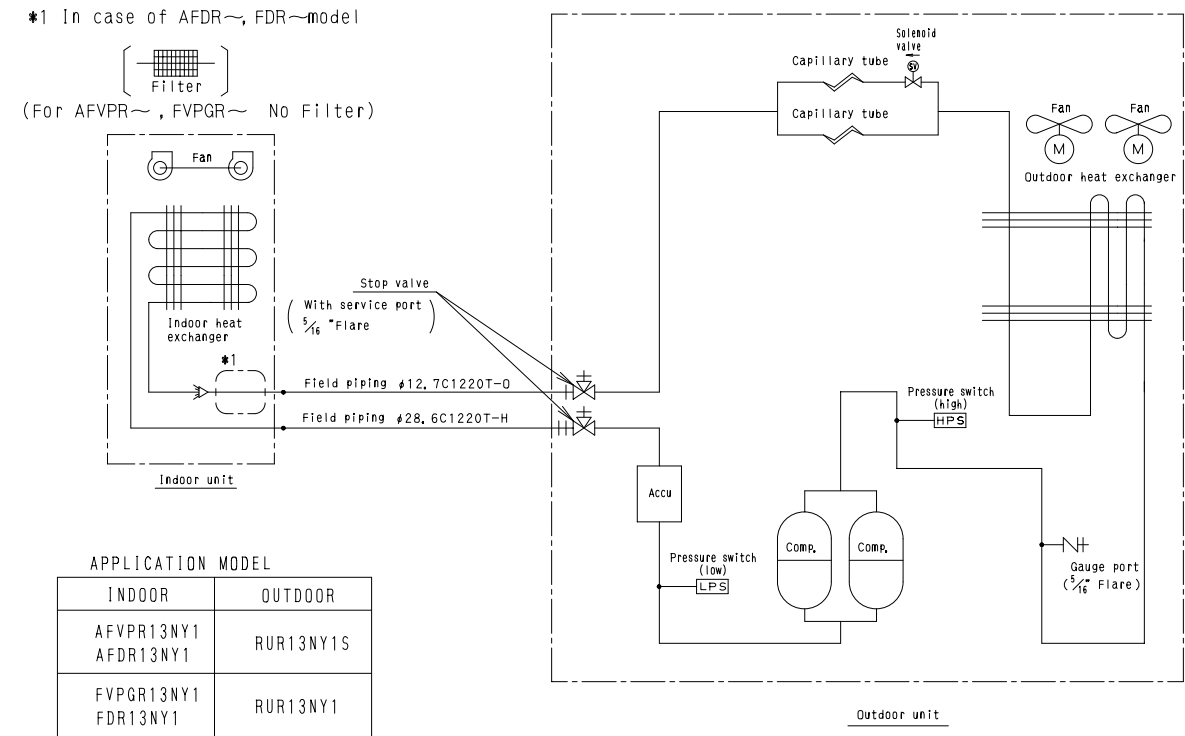
3D063701

FVGR10NV1 / FVPGR10NY1 / FDR10NY1 + RUR10NY1



3D063702

FVPGR13NY1 / FDR13NY1 + RUR13NY1

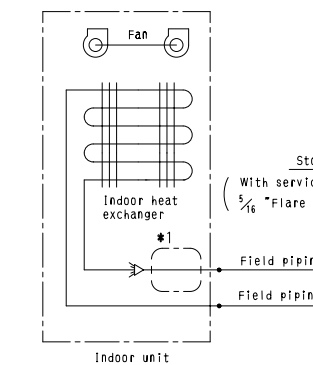


3D063703

FVPGR15NY1 / FDR15NY1 + RUR15NY1
FVPGR18NY1 / FDR18NY1 + RUR18NY1

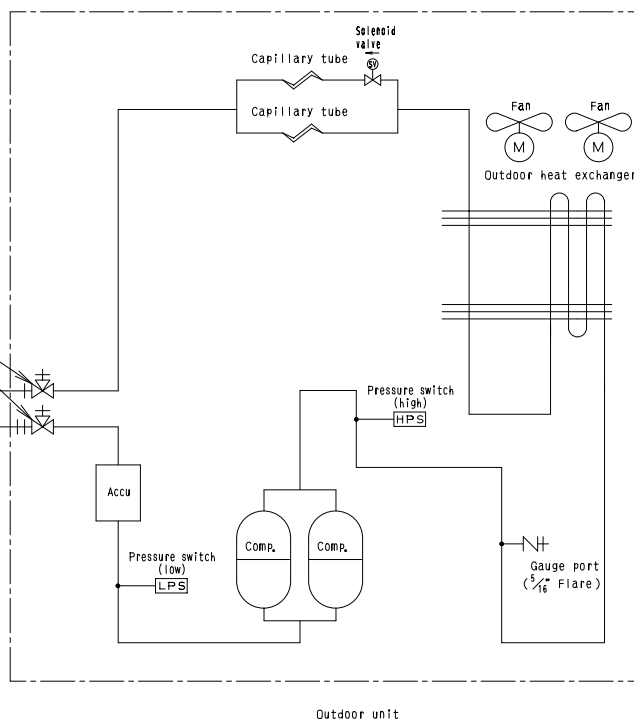
*1 In case of AFDR~, FDR~model

(For AFVPR~, FVPGR~ No Filter)



APPLICATION MODEL

INDOOR	OUTDOOR
AFVPR15NY1 AFDR15NY1	RUR15NY1S
FVPGR15NY1 FDR15NY1	RUR15NY1
AFVPR18NY1 AFDR18NY1	RUR18NY1S
FVPGR18NY1 FDR18NY1	RUR18NY1

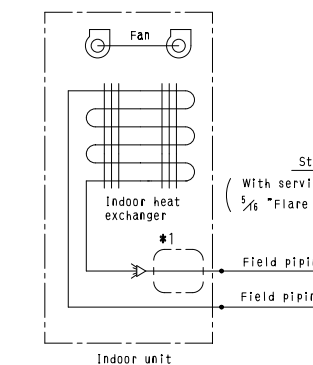


3D063704

FVPGR20NY1 / FDR20NY1 + RUR20NY1

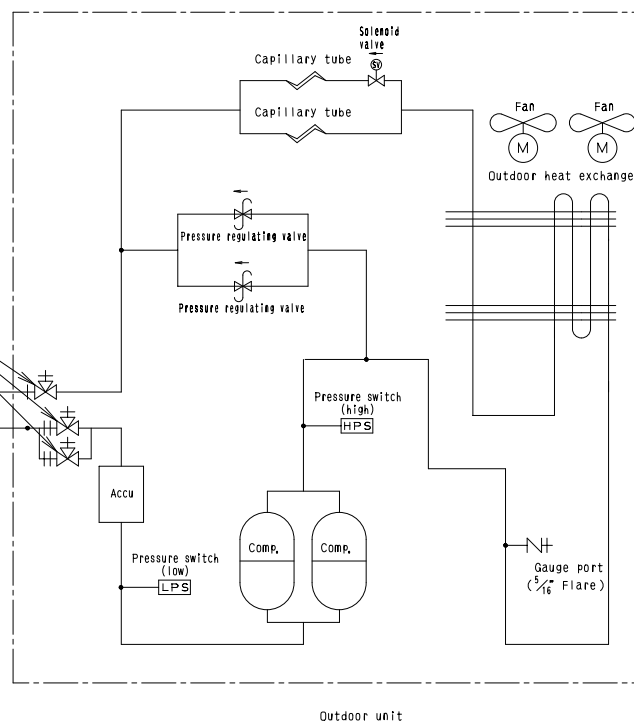
*1 In case of AFDR~, FDR~model

(For AFVPR~, FVPGR~ No Filter)



APPLICATION MODEL

INDOOR	OUTDOOR
AFVPR20NY1 AFDR20NY1	RUR20NY1S
FVPGR20NY1 FDR20NY1	RUR20NY1



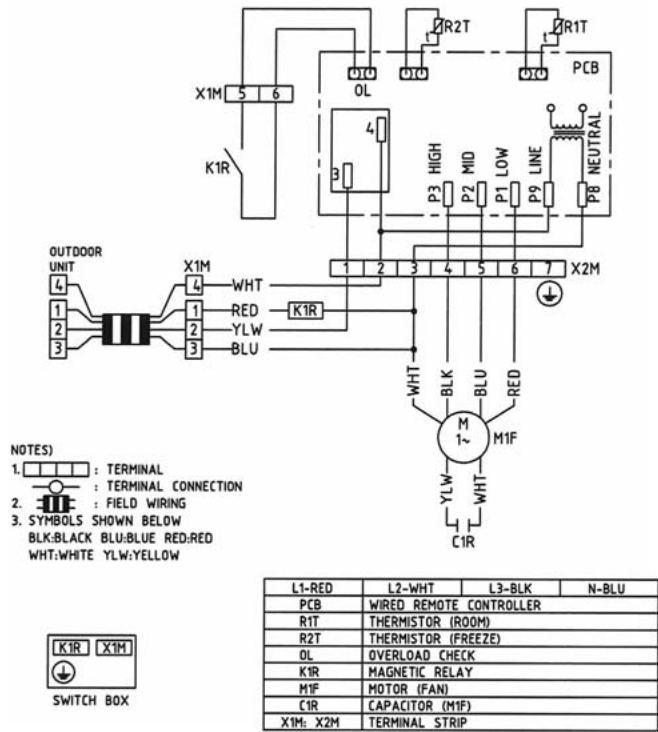
3D063705

7. Wiring diagrams

7.1 Indoor unit

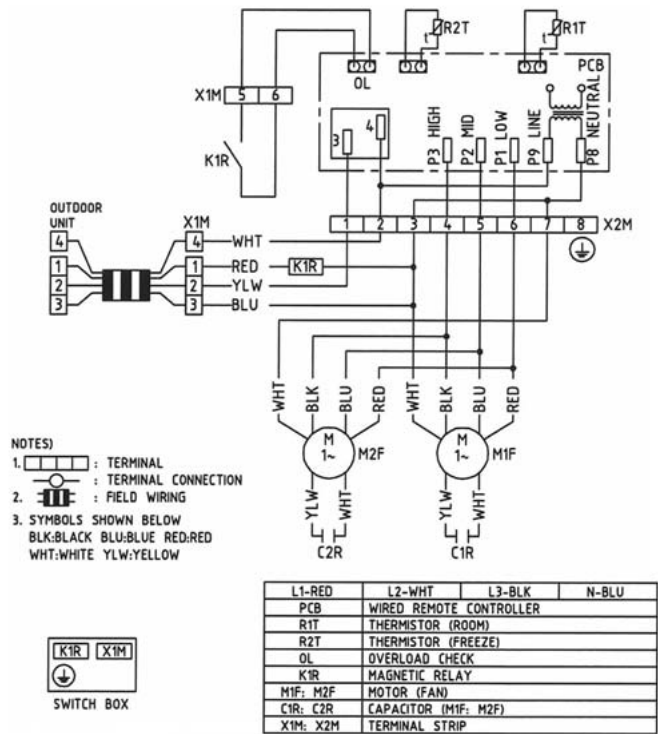
7.1.1 FVGR-N

FVGR05NV1 / FVGR06NV1 / FVGR08NV1



SDR3010210-1A

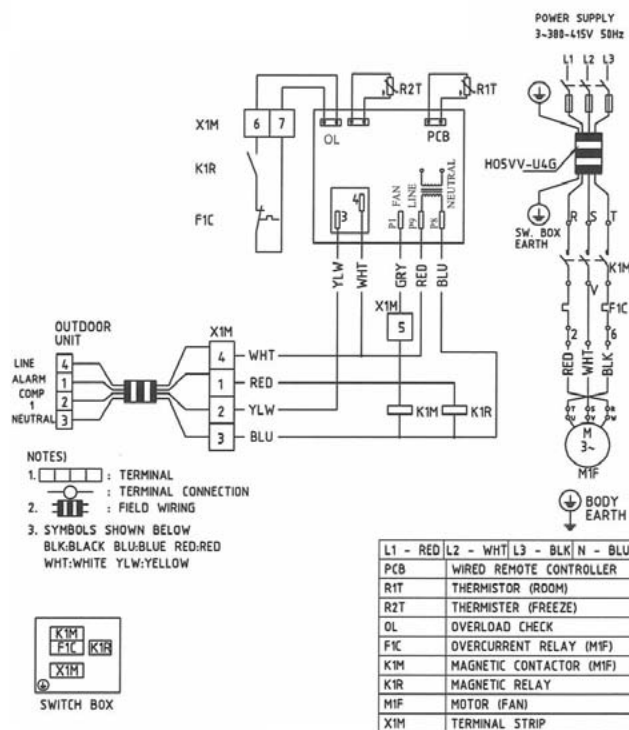
FVGR10NV1



SDR3010212-1B

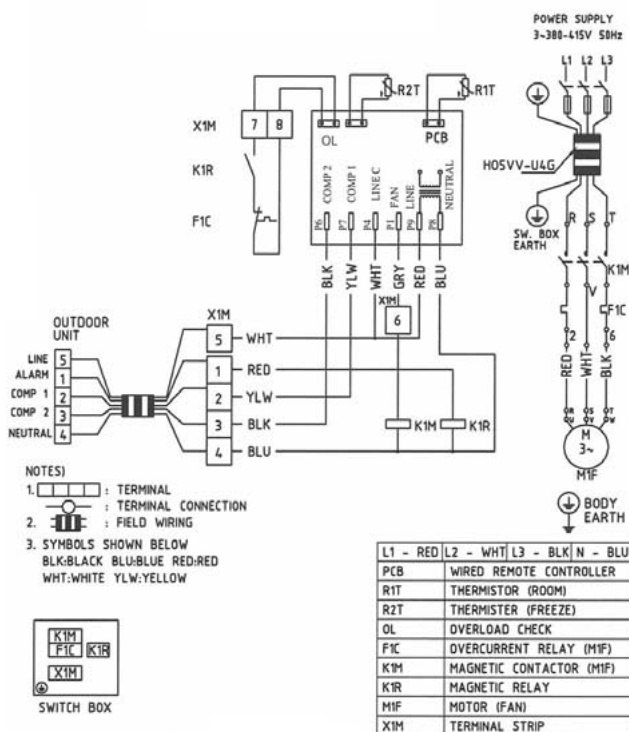
7.1.2 FVPGR-N

FVPGR10NY1



SDR3010213-1D

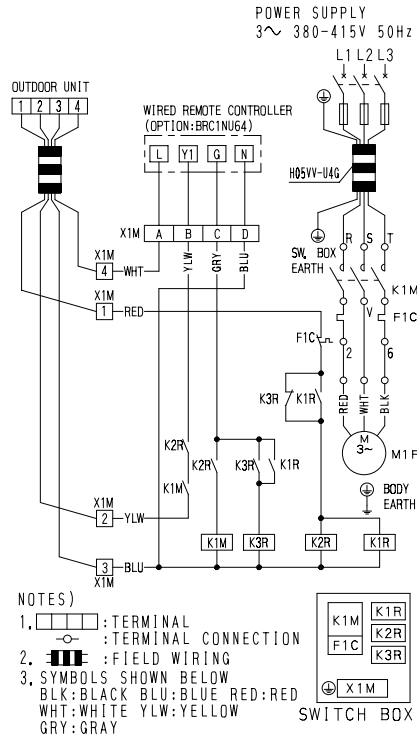
FVPGR13NY1 / FVPGR15NY1 / FVPGR18NY1 / FVPGR20NY1



SDR3010206-1F

7.1.3 FDR-N

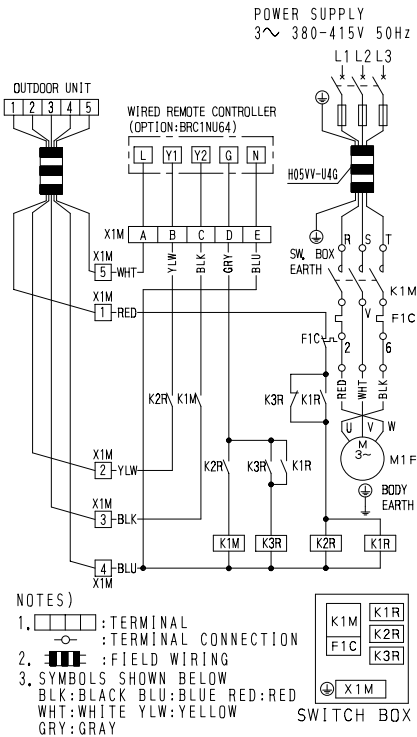
FDR05NY1 / FDR06NY1 / FDR08NY1 / FDR10NY1



L1-RED	L2-WHT	L3-BLK
K1R, K2R, K3R	MAGNETIC RELAY	
F1C	OVER CURRENT RELAY	
K1M	MAGNETIC CONTACTOR (M1F)	
M1F	MOTOR (FAN)	
X1M	TERMINAL STRIP	

3D062244F

FDR13NY1 / FDR15NY1 / FDR18NY1 / FDR20NY1



L1-RED	L2-WHT	L3-BLK
K1R, K2R, K3R	MAGNETIC RELAY	
F1C	OVER CURRENT RELAY	
K1M	MAGNETIC CONTACTOR (M1F)	
M1F	MOTOR (FAN)	
X1M	TERMINAL STRIP	

3D062245F

7.2 Outdoor unit

RUR05NY1

L1-RED	L2-WHT	L3-BLK	N-BLU
C1-C2	CAPACITOR (M1F • M2F)		
FIU	FUSE (5A, 250V)		
K1M	MAGNETIC CONTACTOR (M1C)		
K1R	MAGNETIC RELAY (ALARM)		
M1C	MOTOR (COMPRESSOR)		
M1F•M2F	MOTOR (FAN)		
Q1M•Q2M	THERMO SWITCH (M1F • M2F)		
Q1RP	REVERSE PHASE PROTECTOR		
Q1	THERMO SWITCH (DISCHARGE PIPE)		
S1PH	PRESSURE SWITCH (HIGH)		
S1PL	PRESSURE SWITCH (LOW)		
X1M•X2M	TERMINAL STRIP		

NOTE)




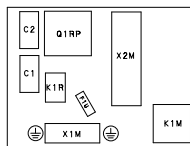
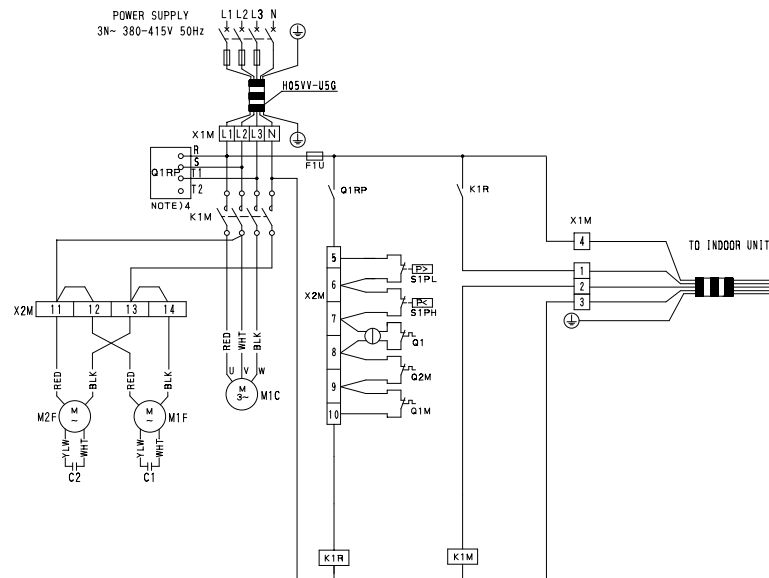
1.  : TERMINAL STRIP
2.  : TERMINAL CONNECTION
3.  : FIELD WIRING
3. SYMBOLS SHOW AS FOLLOWS
 BLK:BLACK RED:RED
 WHT:WHITE YLW:YELLOW
4. CHANGE THE CONNECTION OF TERMINAL STRIP AND
 PHASE REVERSAL PROTECTOR ACCORDING TO THE TABLE 1.

TABLE 1 * FACTORY CONNECTION

VOLTAGE	TERMINAL
380V	*R-S-T1
400 • 415V	R-S-T2



SWITCH BOX






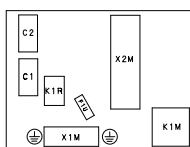
3D061686B

RUR06NY1

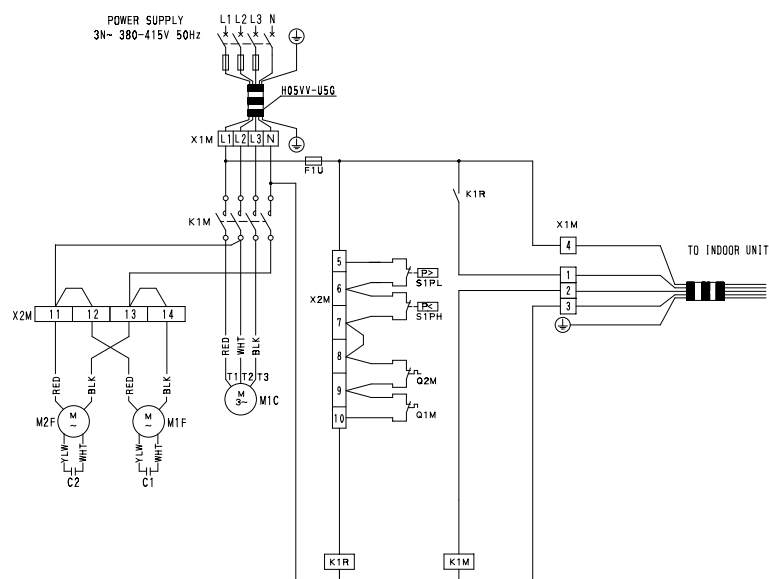
L1-RED	L2-WHT	L3-BLK	N-BLU
C1•C2	CAPACITOR (M1F • M2F)		
F1U	FUSE (5A, 250V)		
K1M	MAGNETIC CONTACTOR(M1C)		
K1R	MAGNETIC RELAY(ALARM)		
M1C	MOTOR (COMPRESSOR)		
M1F•M2F	MOTOR (FAN)		
Q1M•Q2M	THERMO SWITCH (M1F • M2F)		
S1PH	PRESSURE SWITCH (HIGH)		
S1PL	PRESSURE SWITCH (LOW)		
X1M•X2M	TERMINAL STRIP		

NOTE)

1.  : TERMINAL STRIP
 2.  : TERMINAL CONNECTION
 3.  : FIELD WIRING
3. SYMBOLS SHOW AS FOLLOWS
 BLK:BLACK RED:RED
 WHT:WHITE YLW:YELLOW

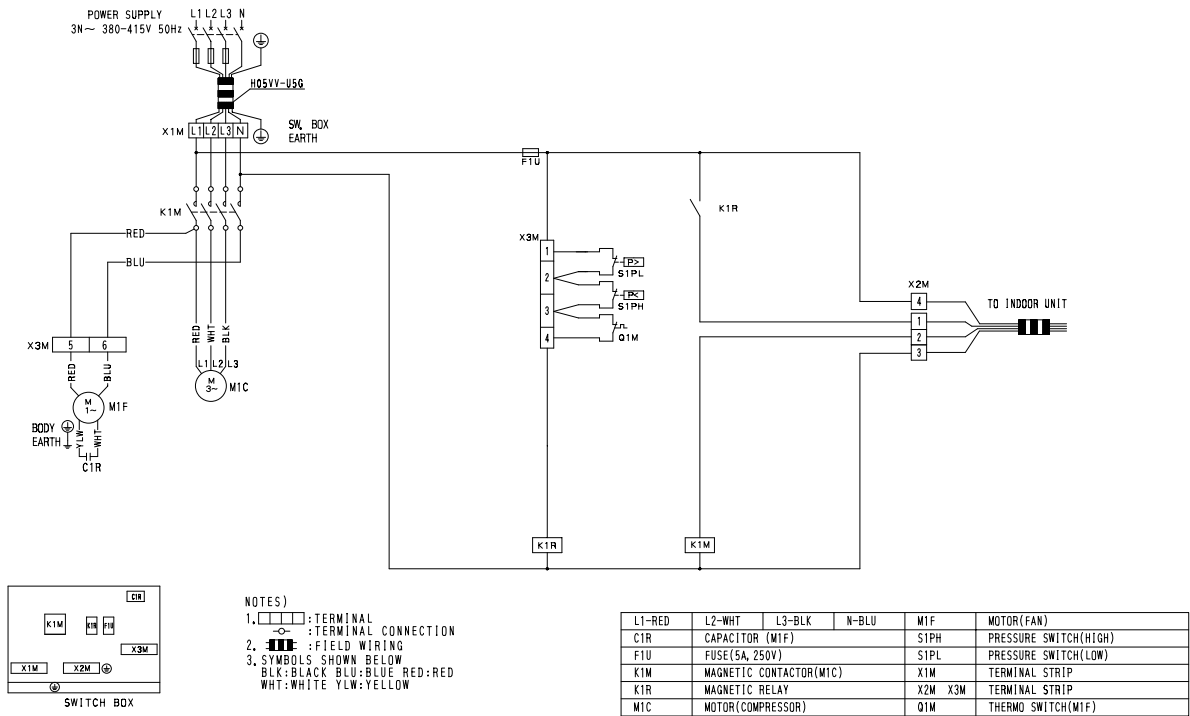


SWITCH BOX



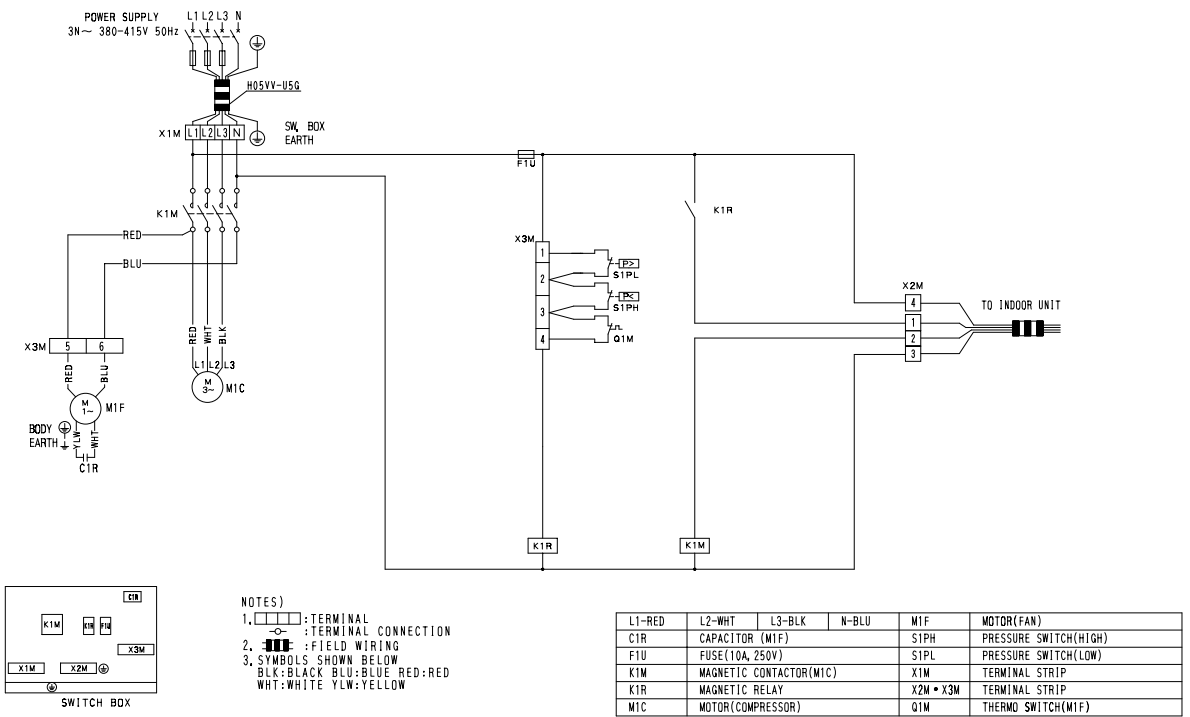
3D061685B

RUR08NY1



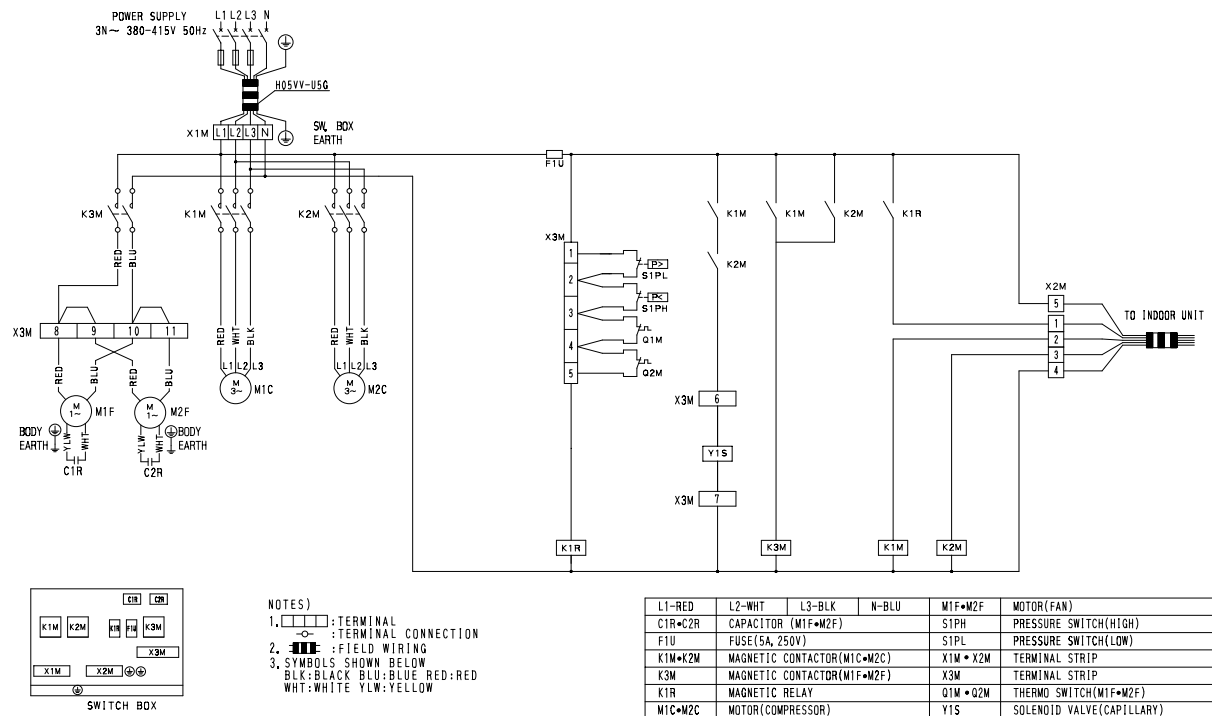
3D063584A

RUR10NY1



3D062159B

RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1



3D062158B

7.3 Field wiring

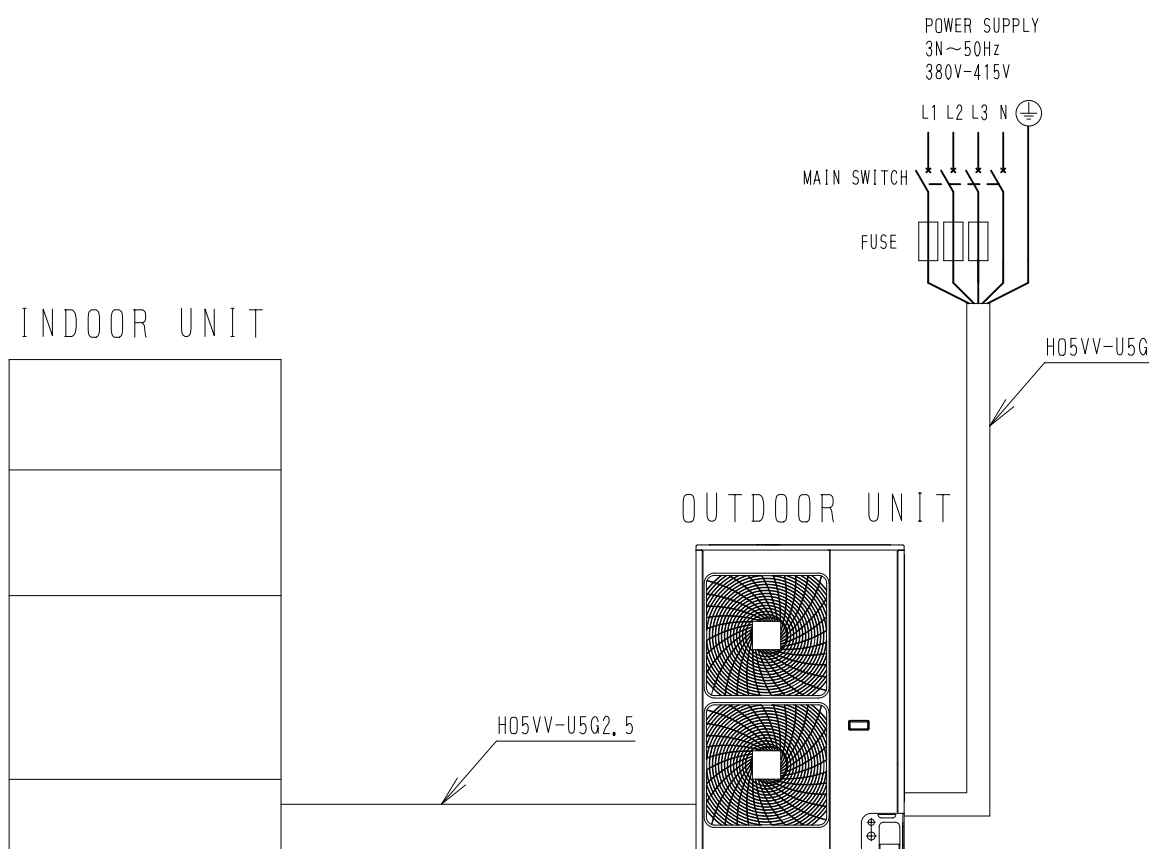
7.3.1 FVGR-N

1

FVGR05NV1 + RUR05NY1

FVGR06NV1 + RUR06NY1

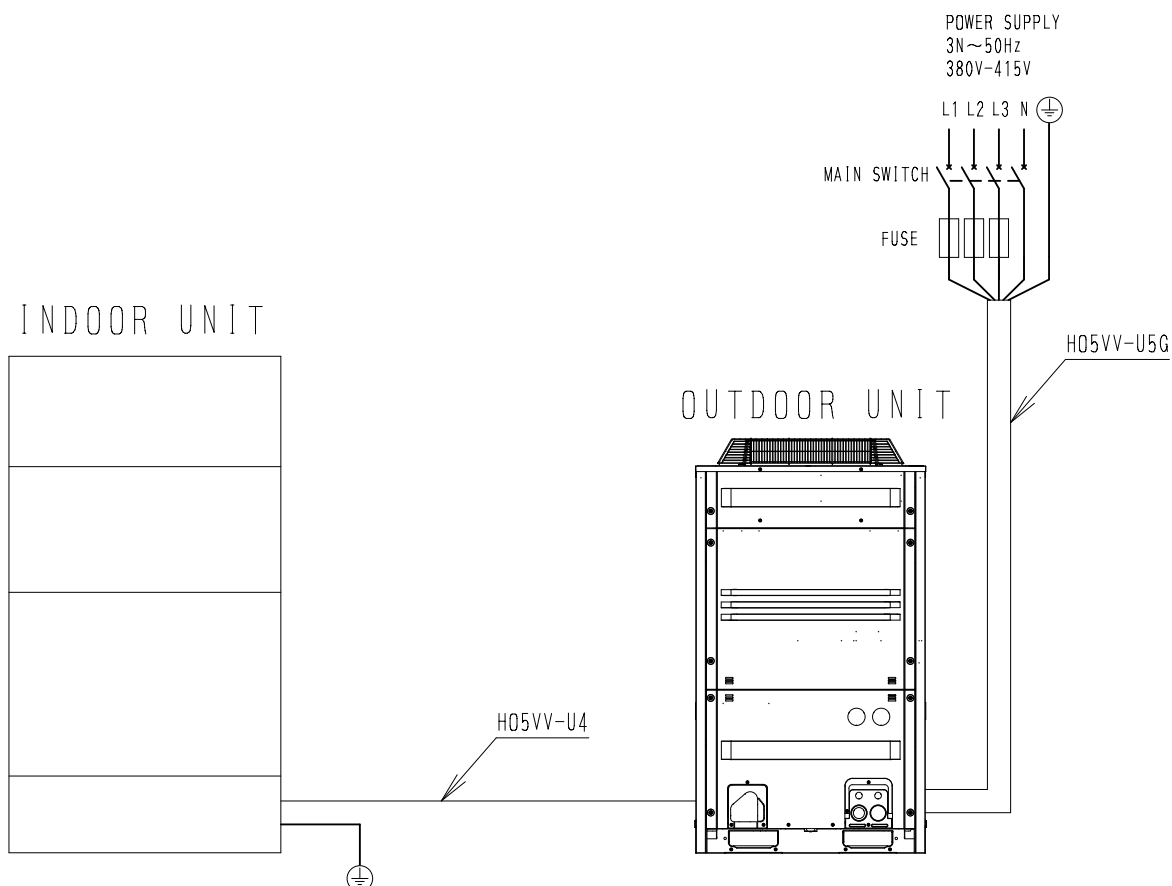
- Notes
- 1) ——— Line voltage wiring
——— Control circuit wiring
 - 2) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
 - 3) Use copper conductor only.
 - 4) As for details, see wiring diagrams.
 - 5) Install fuse and mainswitch for safety.
 - 6) All field wiring and components must be provided by a licensed electrician.
 - 7) Unit shall be grounded in compliance with the applicable local and national codes.
 - 8) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
 - 9) Never share a common power source with other equipment.



4D063723

FVGR08NV1 + RUR08NY1
FVGR10NV1 + RUR10NY1

- Notes
- 1) ——— Line voltage wiring
 ——— Control circuit wiring
 - 2) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
 - 3) Use copper conductor only.
 - 4) As for details, see wiring diagrams.
 - 5) Install fuse and main switch for safety.
 - 6) All field wiring and components must be provided by a licensed electrician.
 - 7) Unit shall be grounded in compliance with the applicable local and national codes.
 - 8) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
 - 9) Never share a common power source with other equipment.



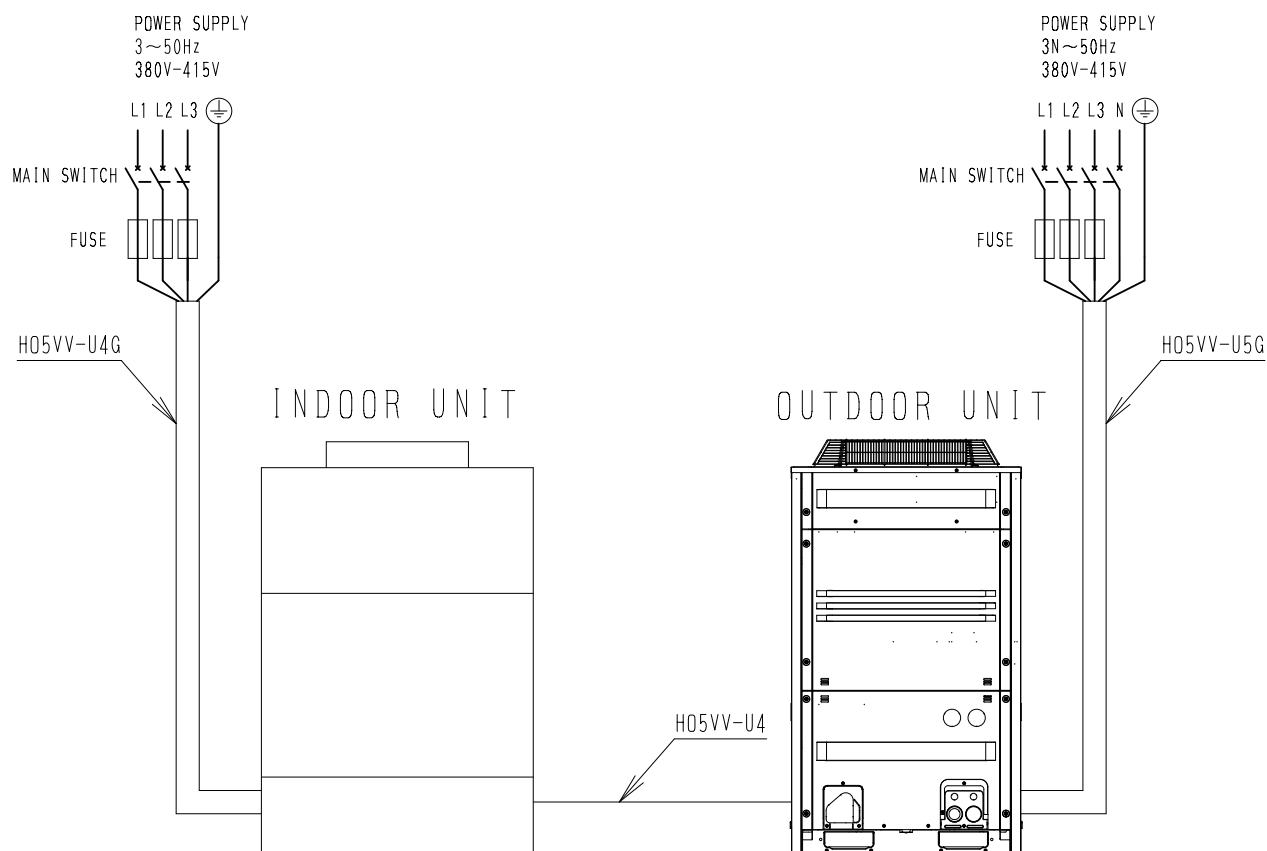
4D063722

7.3.2 FVPGR-N

1

FVPGR10NY1 + RUR10NY1

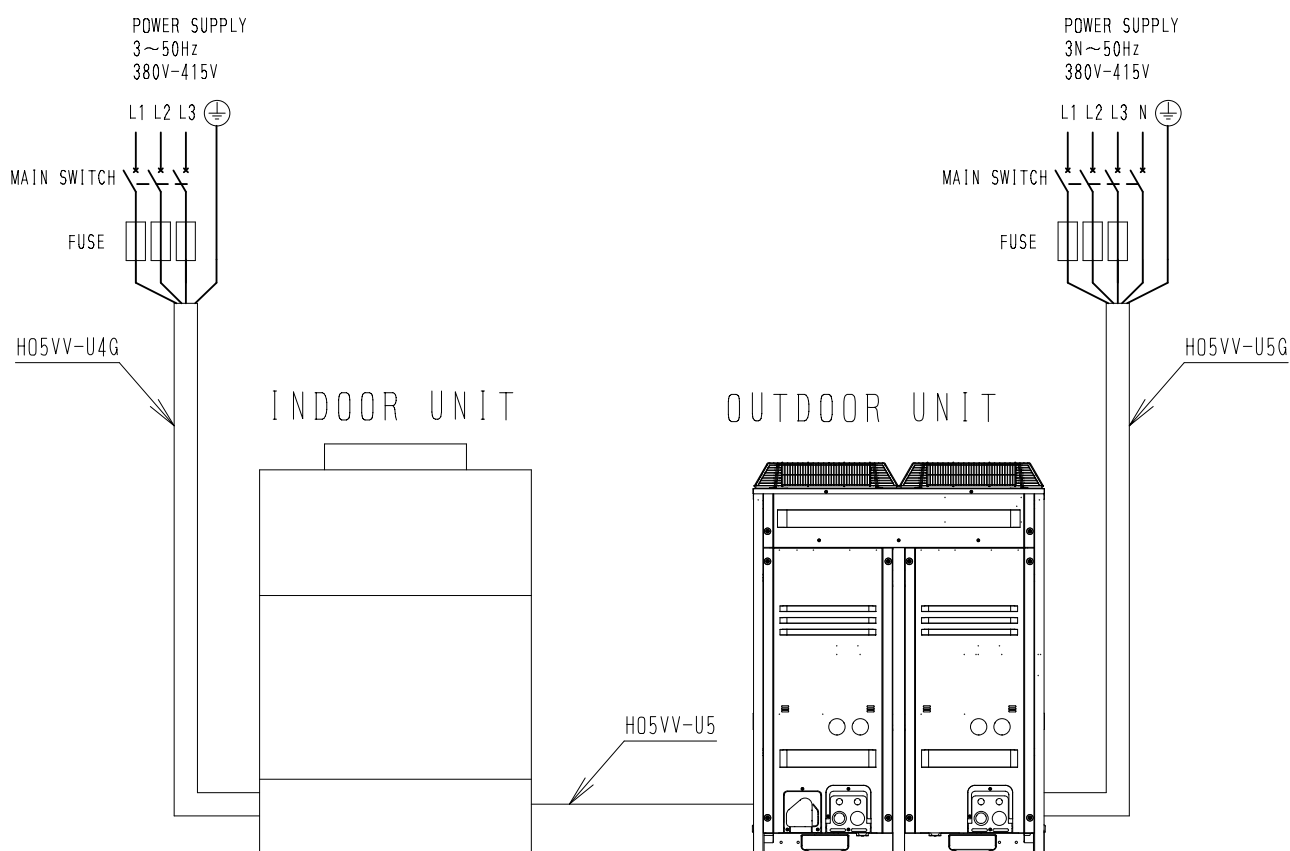
- Notes
- 1) ——— Line voltage wiring
——— Control circuit wiring
 - 2) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
 - 3) Use copper conductor only.
 - 4) As for details, see wiring diagrams.
 - 5) Install fuse and main switch for safety.
 - 6) All field wiring and components must be provided by a licensed electrician.
 - 7) Unit shall be grounded in compliance with the applicable local and national codes.
 - 8) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
 - 9) Never share a common power source with other equipment.



4D063507A

FVPGR13NY1 + RUR13NY1
FVPGR15NY1 + RUR15NY1
FVPGR18NY1 + RUR18NY1
FVPGR20NY1 + RUR20NY1

- Notes
- 1) ——— Line voltage wiring
 ——— Control circuit wiring
 - 2) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
 - 3) Use copper conductor only.
 - 4) As for details, see wiring diagrams.
 - 5) Install fuse and mainswitch for safety.
 - 6) All field wiring and components must be provided by a licensed electrician.
 - 7) Unit shall be grounded in compliance with the applicable local and national codes.
 - 8) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
 - 9) Never share a common power source with other equipment.



4D063508B

7.3.3 FDR-N

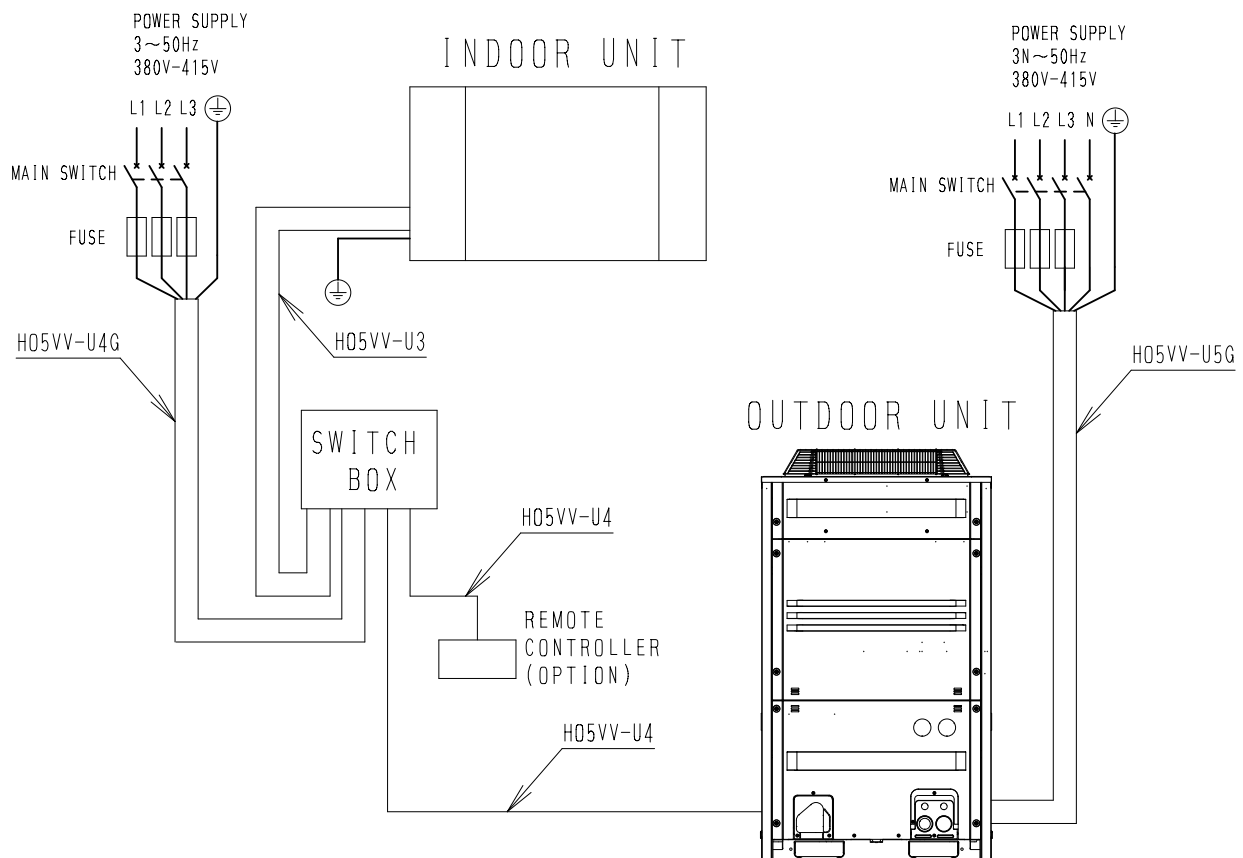
FDR05NY1 + RUR05NY1

FDR06NY1 + RUR06NY1

FDR08NY1 + RUR08NY1

FDR10NY1 + RUR10NY1

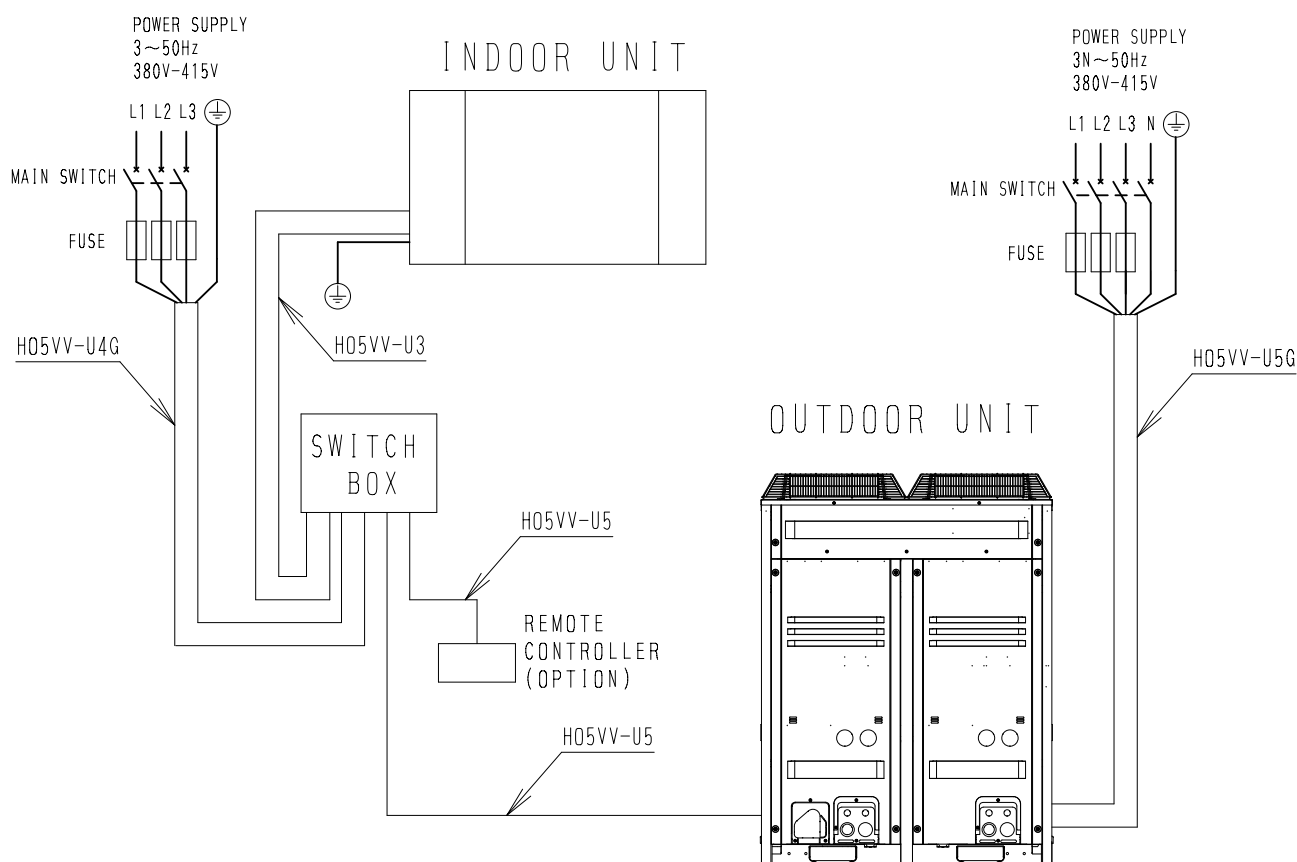
- Notes
- 1) ——— Line voltage wiring
——— Control circuit wiring
 - 2) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
 - 3) Use copper conductor only.
 - 4) As for details, see wiring diagrams.
 - 5) Install fuse and main switch for safety.
 - 6) All field wiring and components must be provided by a licensed electrician.
 - 7) Unit shall be grounded in compliance with the applicable local and national codes.
 - 8) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
 - 9) Never share a common power source with other equipment.



4D063510B

FDR13NY1 + RUR13NY1
FDR15NY1 + RUR15NY1
FDR18NY1 + RUR18NY1
FDR20NY1 + RUR20NY1

- Notes
- 1) ——— Line voltage wiring
 ——— Control circuit wiring
 - 2) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
 - 3) Use copper conductor only.
 - 4) As for details, see wiring diagrams.
 - 5) Install fuse and mainswitch for safety.
 - 6) All field wiring and components must be provided by a licensed electrician.
 - 7) Unit shall be grounded in compliance with the applicable local and national codes.
 - 8) Wiring shown are general points-of-connection guides only and are not intended for or to include all details for a specific installation.
 - 9) Never share a common power source with other equipment.



4D063511A

8. Electric characteristics

8.1 FVGR-N

Unit combination		Power supply					Comp		OFM		IFM	
Indoor	Outdoor	Hz - Volts	Voltage range	MCA	TOCA	MFA	LRA	RLA	kW	FLA	kW	FLA
FVGR05NV1	RUR05NY1	50 - 380~415	Max.50Hz456V Min.50Hz342V	14.4	14.4	20	67	7.0	0.065 + 0.09	0.5 + 0.7	0.245	4.5
FVGR06NV1	RUR06NY1	50 - 380~415		16.2	16.2	25	75	8.3	0.09 + 0.09	0.7 + 0.7	0.245	4.5
FVGR08NV1	RUR08NY1	50 - 380~415		22.6	22.6	35	111	12.3	0.5	1.0	0.375	6.2
FVGR10NV1	RUR10NY1	50 - 380~415		30.8	30.8	45	125	16.6	0.5	1.0	0.245 + 0.245	4.5 + 4.5

Symbols:

MCA : Min. Circuit Amps
 TOCA: Total Over-current Amps
 MFA : Max. Fuse Amps (See note 7)
 LRA : Locked Rotor Amps
 RLA : Rated Load Amps
 OFM : Outdoor Fan Motor
 IFM : Indoor Fan Motor
 FLA : Full Load Amps
 kW : Fan Motor Rated Output

Note:

1. RLA based on the following conditions.
Indoor temp. 27℃DB / 19.5℃WB
Outdoor temp. 35℃DB
2. TOCA means the total value of each OC set.
3. Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
4. Maximum allowable voltage unbalance between phases is 2%.
5. MCA/MFA
 $MCA = 1.25 \times RLA + ea, FLA$
 $MFA \leq 2.25 \times RLA + ea, FLA$
 (Next lower standard fuse rating. Min.15A)
6. Select wire size based on the larger value of MCA or TOCA.
7. Instead of fuse, use circuit breaker.

3D063865A

8.2 FVPGR-N / FDR-N

Unit combination		Power supply								Comp		OFM		IFM	
Indoor	Outdoor	Hz - Volts	Voltage range	Indoor			Outdoor			LRA	RLA	kW	FLA	kW	FLA
FVPGR10NY1	RUR10NY1	50 - 380~415	Max, 50Hz 456V Min, 50Hz 342V	4.4	3.6	15	21.8	21.8	40	125	16.6	0.5	1.0	1.5	3.5
FVPGR13NY1	RUR13NY1			6.1	5.0	15	26.5	26.5	30	101 + 101	9.7 + 9.7	0.25 + 0.25	1.2 + 1.2	2.2	4.9
FVPGR15NY1	RUR15NY1			6.1	5.0	15	32.4	32.4	40	111 + 111	12.0 + 12.0	0.3 + 0.3	1.2 + 1.2	2.2	4.9
FVPGR18NY1	RUR18NY1			10.0	8.0	30	38.6	38.6	45	118 + 118	14.2 + 14.2	0.4 + 0.4	1.6 + 1.6	3.7	8.0
FVPGR20NY1	RUR20NY1			10.0	8.0	30	45.8	45.8	60	118 + 118	17.1 + 17.1	0.4 + 0.4	1.6 + 1.6	3.7	8.0
FDR05NY1	RUR05NY1		Max, 50Hz 456V Min, 50Hz 342V	2.3	1.8	15	10.0	10.0	15	67	7.0	0.065 + 0.09	0.5 + 0.7	0.75	1.8
FDR06NY1	RUR06NY1			2.3	1.8	15	11.7	11.7	20	75	8.3	0.09 + 0.09	0.7 + 0.7	0.75	1.8
FDR08NY1	RUR08NY1			4.4	3.6	15	16.9	16.9	30	111	12.7	0.5	1.0	1.5	3.5
FDR10NY1	RUR10NY1			4.4	3.6	15	21.8	21.8	40	125	16.6	0.5	1.0	1.5	3.5
FDR13NY1	RUR13NY1			6.1	5.0	15	26.5	26.5	30	101 + 101	9.7 + 9.7	0.25 + 0.25	1.2 + 1.2	2.2	4.9
FDR15NY1	RUR15NY1			6.1	5.0	15	32.4	32.4	40	111 + 111	12.0 + 12.0	0.3 + 0.3	1.2 + 1.2	2.2	4.9
FDR18NY1	RUR18NY1			10.0	8.0	30	38.6	38.6	45	118 + 118	14.2 + 14.2	0.4 + 0.4	1.6 + 1.6	3.7	8.0
FDR20NY1	RUR20NY1			10.0	8.0	30	45.8	45.8	60	118 + 118	17.1 + 17.1	0.4 + 0.4	1.6 + 1.6	3.7	8.0

Symbols:

MCA : Min. Circuit Amps
 TOCA: Total Over-current Amps
 MFA : Max. Fuse Amps (See note 7)
 LRA : Locked Rotor Amps
 RLA : Rated Load Amps
 OFM : Outdoor Fan Motor
 IFM : Indoor Fan Motor
 FLA : Full Load Amps
 kW : Fan Motor Rated Output

Note:

1. RLA based on the following conditions.
Indoor temp. 27°CDB / 19.5°CWB
Outdoor temp. 35°CDB
2. TOCA means the total value of each OC set.
3. Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
4. Maximum allowable voltage unbalance between phases is 2%.
5. MCA/MFA
 $MCA = 1.25 \times RLA + ea. FLA$
 $MFA \leq 2.25 \times RLA + ea. FLA$
 (Next lower standard fuse rating, Min. 15A)
6. Select wire size based on the larger value of MCA or TOCA.
7. Instead of fuse, use circuit breaker.

9. Capacity tables

9.1 Cooling capacity

9.1.1 FVGR-N

FVGR05NV1 + RUR05NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
42 (0,15)	14.0	20	14.7	11.5	3.7	14.2	10.8	3.9	13.5	10.5	4.3	12.9	10.3	4.8	12.2	10.0	5.2	11.4	9.6	5.8
	16.0	22	15.6	11.0	3.7	15.1	10.8	4.0	14.4	10.6	4.4	13.7	10.3	4.8	13.0	10.1	5.3	12.2	9.7	5.9
	18.0	25	16.6	11.6	3.8	16.0	11.4	4.1	15.3	11.1	4.5	14.5	10.9	4.9	13.8	10.7	5.4	12.9	10.3	6.0
	19.0	27	17.0	11.8	3.9	16.4	11.7	4.1	15.7	11.4	4.5	14.9	11.2	4.9	14.2	10.9	5.5	13.3	10.6	6.1
	19.5	27	17.3	11.8	3.9	16.7	11.7	4.1	15.9	11.4	4.5	15.2	11.2	5.0	14.4	10.9	5.5	13.5	10.6	6.1
	22.0	30	18.4	12.0	4.0	17.8	11.9	4.3	17.0	11.7	4.6	16.2	11.4	5.1	15.4	11.1	5.6	14.4	10.8	6.2
	24.0	32	19.4	12.4	4.1	18.7	11.9	4.3	17.9	11.7	4.7	17.4	12.2	5.2	16.6	11.9	5.7	15.1	10.6	6.3

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

- Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
- shows nominal capacities.
- SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb. (DB}^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
- Direct interpolation is permissible.
 Do not extrapolate.
- Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063939

FVGR06NV1 + RUR06NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
42 (0,15)	14.0	20	17.5	13.6	4.4	16.9	12.9	4.6	16.1	12.5	5.1	15.3	12.3	5.6	14.5	11.9	6.2	13.6	11.5	6.9
	16.0	22	18.6	13.1	4.4	18.0	12.9	4.8	17.1	12.6	5.2	16.3	12.3	5.7	15.5	12.0	6.3	14.5	11.5	7.0
	18.0	25	19.7	13.8	4.5	19.0	13.5	4.8	18.2	13.2	5.3	17.3	12.9	5.8	16.4	12.7	6.4	15.4	12.3	7.1
	19.0	27	20.3	14.1	4.6	19.6	13.9	4.9	18.7	13.6	5.4	17.8	13.3	5.8	16.9	12.9	6.4	15.8	12.7	7.2
	19.5	27	20.6	14.1	4.6	19.8	13.9	4.9	18.9	13.6	5.4	18.1	13.3	5.9	17.1	12.9	6.4	16.1	12.7	7.2
	22.0	30	22.0	14.3	4.7	21.2	14.1	5.1	20.2	13.9	5.5	19.3	13.5	6.0	18.3	13.2	6.6	17.2	12.8	7.3
	24.0	32	23.1	14.8	4.8	22.3	14.1	5.1	21.3	13.9	5.6	20.8	14.5	6.2	19.7	14.1	6.7	18.0	12.6	7.4

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

- Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
- shows nominal capacities.
- SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb. (DB}^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
- Direct interpolation is permissible.
 Do not extrapolate.
- Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063940A

FVGR08NV1 + RUR08NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE(°C DB)																	
	EWB (° C)	EDB (° C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
54 (0.15)	14.0	20	23.4	18.2	5.8	22.6	17.2	6.2	21.5	16.7	6.9	20.5	16.4	7.5	19.4	15.9	8.2	18.2	15.4	9.2
	16.0	22	24.9	17.5	5.9	24.0	17.2	6.4	22.9	16.9	6.9	21.8	16.4	7.6	20.7	16.0	8.4	19.4	15.4	9.4
	18.0	25	26.4	18.4	6.1	25.5	18.1	6.5	24.3	17.7	7.1	23.1	17.3	7.7	22.0	17.0	8.5	20.6	16.4	9.5
	19.0	27	27.1	18.8	6.1	26.2	18.6	6.5	25.0	18.2	7.2	23.8	17.8	7.8	22.6	17.3	8.6	21.2	16.9	9.6
	19.5	27	27.5	18.8	6.1	26.5	18.6	6.5	25.3	18.2	7.2	24.2	17.8	7.9	22.9	17.3	8.6	21.5	16.9	9.6
	22.0	30	29.3	19.2	6.3	28.3	18.9	6.8	27.1	18.6	7.3	25.8	18.1	8.1	24.5	17.7	8.8	23.0	17.1	9.8
	24.0	32	30.8	19.7	6.4	29.8	18.9	6.8	28.4	18.6	7.5	27.7	19.4	8.3	26.4	18.9	9.0	24.1	16.9	9.9

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb. (DB}^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063941B

FVGR10NV1 + RUR10NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE(°C DB)																	
	EWB (° C)	EDB (° C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
80 (0.14)	14.0	20	29.1	22.7	7.7	28.1	21.4	8.2	26.8	20.8	9.0	25.5	20.4	9.9	24.2	19.8	10.8	22.6	19.1	12.1
	16.0	22	31.0	21.8	7.7	29.9	21.4	8.4	28.5	21.0	9.1	27.1	20.4	10.0	25.7	19.9	11.1	24.1	19.2	12.3
	18.0	25	32.8	22.9	8.0	31.7	22.5	8.5	30.2	22.0	9.4	28.8	21.5	10.2	27.3	21.1	11.3	25.6	20.4	12.5
	19.0	27	33.7	23.4	8.1	32.6	23.1	8.6	31.1	22.6	9.4	29.6	22.1	10.3	28.1	21.5	11.3	26.3	21.0	12.6
	19.5	27	34.2	23.4	8.1	33.0	23.1	8.6	31.5	22.6	9.4	30.1	22.1	10.4	28.5	21.5	11.4	26.7	21.0	12.6
	22.0	30	36.5	23.8	8.2	35.2	23.5	8.9	33.7	23.1	9.7	32.1	22.5	10.6	30.5	22.0	11.5	28.6	21.3	12.9
	24.0	32	38.3	24.5	8.4	37.0	23.5	9.0	35.4	23.1	9.9	34.5	24.1	10.9	32.8	23.5	11.8	30.0	21.0	13.1

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb. (DB}^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063942

9.1.2 FVPGR-N

1

FVPGR10NY1 + RUR10NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
68 (0.13)	14.0	20	28.7	22.0	7.6	27.7	20.8	8.2	26.4	20.4	8.9	25.2	19.9	9.8	23.9	19.2	10.9	22.4	18.5	12.1
	16.0	22	30.3	21.2	7.8	29.3	20.8	8.3	28.0	20.4	9.2	26.7	19.9	10.0	25.4	19.3	11.0	23.9	18.6	12.2
	18.0	25	32.0	22.2	7.8	30.9	22.0	8.5	29.6	21.4	9.3	28.3	20.9	10.2	26.9	20.5	11.1	25.3	19.7	12.4
	19.0	27	32.8	22.7	7.9	31.7	22.3	8.5	30.4	22.0	9.3	29.0	21.5	10.3	27.7	20.9	11.3	26.1	20.4	12.5
	19.5	27	33.2	22.7	7.9	32.1	21.8	9.4	30.8	22.0	9.4	29.4	21.5	10.3	28.0	20.9	11.3	26.4	20.4	12.6
	22.0	30	35.2	23.2	8.1	34.1	22.7	8.8	32.7	22.2	9.6	31.3	21.8	10.5	29.9	21.2	11.5	28.2	20.6	12.8
80 (0.14)	14.0	20	29.3	22.8	7.7	28.3	21.6	8.2	27.0	21.0	9.0	25.6	20.6	9.9	24.3	20.0	10.8	22.7	19.2	12.1
	16.0	22	31.2	22.0	7.7	30.1	21.6	8.4	28.7	21.2	9.1	27.3	20.6	10.0	25.9	20.1	11.1	24.2	19.3	12.3
	18.0	25	33.0	23.1	8.0	31.9	22.7	8.5	30.4	22.2	9.4	29.0	21.7	10.2	27.5	21.3	11.3	25.8	20.5	12.5
	19.0	27	34.0	23.6	8.1	32.8	23.3	8.6	31.3	22.8	9.4	29.8	22.3	10.3	28.3	21.7	11.3	26.5	21.2	12.6
	19.5	27	34.4	23.6	8.1	33.2	23.3	8.6	31.7	22.8	9.4	30.3	22.3	10.4	28.7	21.7	11.4	26.9	21.2	12.6
	22.0	30	36.7	24.0	8.2	35.5	23.7	8.9	33.9	23.3	9.7	32.3	22.7	10.6	30.7	22.2	11.5	28.8	21.4	12.9
96 (0.16)	14.0	20	30.2	24.2	7.8	29.0	22.9	8.3	27.6	22.3	10.1	26.2	21.9	10.0	24.7	21.3	10.9	23.0	20.5	12.2
	16.0	22	32.1	23.4	7.9	30.9	22.9	8.4	29.4	22.3	9.2	27.9	21.9	10.1	26.4	21.3	11.1	24.6	20.7	12.4
	18.0	25	33.9	24.5	8.1	32.7	24.2	8.6	31.2	23.7	9.4	29.6	23.1	10.3	28.0	22.6	11.2	26.2	22.0	12.6
	19.0	27	34.9	25.2	8.1	33.6	24.9	8.7	32.0	24.3	9.4	30.5	23.7	10.4	28.9	23.3	11.3	27.0	22.6	12.7
	19.5	27	35.4	25.7	8.3	34.1	24.9	8.7	32.5	24.3	9.5	30.9	23.7	10.4	29.3	23.3	11.4	27.4	22.6	12.7
	22.0	30	37.7	25.7	8.4	36.4	25.3	8.9	34.7	24.9	9.7	33.0	24.3	10.7	31.3	23.7	11.6	29.3	23.2	13.0
	24.0	32	39.6	26.6	8.6	38.2	25.4	9.1	36.5	24.9	9.9	34.7	24.3	10.9	33.0	23.7	11.8	30.9	23.2	13.2

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063943

FVPGR13NY1 + RUR13NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
102 (0.06)	14.0	20	34.9	26.7	9.7	33.7	25.2	10.5	32.1	24.7	11.4	30.6	24.1	12.5	29.1	23.4	13.9	27.2	22.5	15.5
	16.0	22	36.9	25.7	10.0	35.6	25.2	10.6	34.0	24.7	11.7	32.5	24.1	12.8	30.9	23.5	14.0	29.0	22.6	15.6
	18.0	25	38.8	26.9	10.0	37.5	26.7	10.9	35.9	25.9	11.8	34.3	25.3	13.1	32.7	24.8	14.3	30.8	24.0	15.9
	19.0	27	39.8	27.5	10.1	38.5	27.0	10.8	36.9	26.7	11.9	35.2	26.1	13.2	33.6	25.3	14.4	31.6	24.7	16.0
	19.5	27	40.3	27.5	10.1	39.0	26.4	12.0	37.4	26.7	12.0	35.7	26.1	13.2	34.1	25.3	14.4	32.1	24.7	16.2
	22.0	30	42.8	28.1	10.4	41.4	27.5	11.2	39.7	26.9	12.3	38.0	26.4	13.4	36.3	25.7	14.7	34.3	25.0	16.3
120 (0.08)	14.0	20	35.6	27.7	9.8	34.3	26.2	10.5	32.7	25.5	11.6	31.1	25.0	12.7	29.5	24.2	13.9	27.6	23.4	15.5
	16.0	22	37.9	26.7	9.9	36.5	26.2	10.8	34.8	25.7	11.7	33.2	25.0	12.8	31.5	24.4	14.1	29.4	23.5	15.8
	18.0	25	40.1	28.0	10.2	38.7	27.5	10.9	36.9	26.9	12.0	35.2	26.3	13.0	33.4	25.8	14.4	31.3	24.9	16.0
	19.0	27	41.3	28.6	10.3	39.8	28.3	11.0	38.0	27.7	12.1	36.2	27.0	13.2	34.4	26.3	14.5	32.2	25.7	16.1
	19.5	27	41.8	28.6	10.3	40.4	28.3	11.0	38.5	27.7	12.1	36.8	27.0	13.3	34.9	26.3	14.5	32.7	25.7	16.1
	22.0	30	44.6	29.1	10.5	43.1	28.8	11.4	41.1	28.3	12.3	39.2	27.5	13.6	37.3	26.9	14.8	35.0	26.0	16.5
144 (0.10)	14.0	20	36.6	29.4	9.9	35.2	27.8	10.6	33.5	27.0	12.9	31.8	26.6	12.8	30.0	25.8	14.0	28.0	24.9	15.6
	16.0	22	38.9	28.4	10.1	37.5	27.8	10.7	35.7	27.0	11.8	33.9	26.6	12.9	32.1	25.8	14.2	29.9	25.1	15.9
	18.0	25	41.2	29.7	10.3	39.7	29.4	11.0	37.8	28.8	12.1	35.9	28.0	13.1	34.1	27.4	14.4	31.8	26.7	16.1
	19.0	27	42.4	30.6	10.3	40.8	30.2	11.1	38.9	29.5	12.1	37.0	28.8	13.3	35.1	28.3	14.5	32.8	27.4	16.3
	19.5	27	43.0	31.2	10.6	41.4	30.2	11.1	39.5	29.5	12.2	37.5	28.8	13.3	35.6	28.3	14.6	33.2	27.4	16.2
	22.0	30	45.8	31.2	10.7	44.2	30.7	11.3	42.2	30.2	12.5	40.1	29.5	13.7	38.1	28.8	14.9	35.6	28.2	16.7
	24.0	32	48.1	32.3	11.0	46.4	30.8	11.6	44.3	30.2	12.7	42.2	29.5	13.9	40.1	28.8	15.2	37.5	28.2	16.9

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063944

FVPGR15NY1 + RUR15NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
102 (0.06)	14.0	20	46.0	35.2	11.8	44.3	33.2	12.8	42.3	32.6	13.9	40.3	31.8	15.3	38.3	30.8	16.9	35.9	29.6	18.9
	16.0	22	48.6	33.9	12.1	46.9	33.2	12.9	44.8	32.6	14.3	42.8	31.8	15.6	40.7	31.0	17.1	38.2	29.8	19.1
	18.0	25	51.2	35.5	12.2	49.5	35.2	13.3	47.4	34.2	14.4	45.2	33.4	15.9	43.1	32.7	17.4	40.5	31.6	19.4
	19.0	27	52.5	36.3	12.4	50.8	35.6	13.2	48.6	35.2	14.6	46.5	34.4	16.0	44.3	33.4	17.5	41.7	32.6	19.5
	19.5	27	53.1	36.3	12.4	51.4	34.8	14.6	49.2	35.2	14.6	47.1	34.4	16.0	44.9	33.4	17.5	42.3	32.6	19.7
	22.0	30	56.4	37.1	12.7	54.6	36.3	13.7	52.4	35.5	15.0	50.1	34.8	16.3	47.9	33.9	17.9	45.2	32.9	19.9
	24.0	32	59.0	37.1	13.0	57.2	36.3	14.0	54.9	35.5	15.1	52.6	34.8	16.6	50.3	33.9	18.2	47.5	32.9	20.2
120 (0.08)	14.0	20	47.0	36.6	11.9	45.3	34.5	12.8	43.1	33.6	14.1	41.0	32.9	15.4	38.9	31.9	16.9	36.4	30.8	18.9
	16.0	22	49.9	35.2	12.1	48.1	34.5	13.1	45.9	33.9	14.2	43.7	32.9	15.6	41.5	32.1	17.2	38.8	30.9	19.2
	18.0	25	52.9	36.9	12.4	51.0	36.3	13.2	48.7	35.5	14.6	46.4	34.7	15.9	44.0	34.0	17.5	41.2	32.9	19.5
	19.0	27	54.4	37.7	12.6	52.5	37.3	13.4	50.1	36.5	14.7	47.7	35.6	16.0	45.3	34.7	17.7	42.4	33.9	19.6
	19.5	27	55.1	37.7	12.6	53.2	37.3	13.4	50.8	36.5	14.7	48.5	35.6	16.2	45.9	34.7	17.7	43.0	33.9	19.6
	22.0	30	58.8	38.4	12.8	56.8	37.9	13.9	54.2	37.3	15.0	51.7	36.3	16.5	49.1	35.5	18.0	46.1	34.3	20.1
	24.0	32	61.8	39.5	13.2	59.7	37.9	14.0	57.0	37.3	15.4	55.6	38.9	17.0	52.8	37.9	18.5	48.3	33.8	20.4
144 (0.10)	14.0	20	48.3	38.8	12.1	46.5	36.6	12.9	44.2	35.6	15.7	41.9	35.0	15.5	39.6	34.0	17.0	36.9	32.9	19.0
	16.0	22	51.3	37.4	12.2	49.4	36.6	13.1	47.0	35.6	14.4	44.6	35.0	15.7	42.2	34.0	17.4	39.4	33.1	19.3
	18.0	25	54.3	39.2	12.6	52.4	38.7	13.4	49.9	37.9	14.7	47.4	36.9	16.0	44.9	36.1	17.5	41.9	35.2	19.7
	19.0	27	55.9	40.3	12.6	53.8	39.8	13.5	51.3	38.9	14.7	48.7	37.9	16.2	46.2	37.3	17.6	43.2	36.1	19.8
	19.5	27	56.6	41.1	13.0	54.6	39.8	13.5	52.0	38.9	14.9	49.4	37.9	16.2	46.9	37.3	17.8	43.8	36.1	19.8
	22.0	30	60.4	41.1	13.0	58.2	40.5	13.8	55.6	39.8	15.2	52.9	38.9	16.6	50.2	37.9	18.1	46.9	37.1	20.3
	24.0	32	63.4	42.5	13.4	61.2	40.6	14.2	58.4	39.8	15.5	55.6	38.9	17.0	52.8	37.9	18.5	49.5	37.1	20.6

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063945

FVPGR18NY1 + RUR18NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
138 (0.07)	14.0	20	51.8	39.7	14.0	50.0	37.5	15.2	47.7	36.7	16.6	45.5	35.8	18.2	43.2	34.7	20.1	40.5	33.4	22.5
	16.0	22	54.8	38.2	14.4	52.9	37.5	15.4	50.6	36.7	17.0	48.2	35.8	18.6	45.9	34.9	20.3	43.1	33.6	22.7
	18.0	25	57.7	40.0	14.5	55.8	39.7	15.8	53.4	38.6	17.2	51.0	37.7	18.9	48.6	36.9	20.7	45.7	35.6	23.1
	19.0	27	59.2	40.9	14.7	57.3	40.2	15.7	54.8	39.7	17.3	52.4	38.7	19.1	50.0	37.7	20.9	47.0	36.8	23.2
	19.5	27	59.9	40.9	14.7	58.0	39.3	17.4	55.5	39.7	17.4	53.1	38.7	19.1	50.6	37.7	20.9	47.7	36.8	23.5
	22.0	30	63.6	41.8	15.1	61.6	40.9	16.3	59.1	40.0	17.9	56.5	39.3	19.4	54.0	38.2	21.4	51.0	37.1	23.7
	24.0	32	66.6	41.8	15.5	64.5	40.9	16.7	61.9	40.0	18.0	59.3	39.3	19.8	56.7	38.2	21.7	53.6	37.1	24.1
162 (0.09)	14.0	20	53.0	41.2	14.2	51.0	38.9	15.2	48.7	37.8	16.8	46.3	37.1	18.4	43.9	36.0	20.1	41.0	34.7	22.5
	16.0	22	56.3	39.7	14.4	54.3	38.9	15.6	51.8	38.2	17.0	49.3	37.1	18.6	46.8	36.2	20.5	43.8	34.9	22.9
	18.0	25	59.6	41.7	14.8	57.5	40.9	15.8	54.9	40.0	17.4	52.3	39.1	18.9	49.7	38.4	20.9	46.5	37.1	23.2
	19.0	27	61.3	42.6	15.0	59.2	42.0	16.0	56.5	41.1	17.5	53.8	40.2	19.1	51.1	39.1	21.1	47.9	38.2	23.4
	19.5	27	62.2	42.6	15.0	60.0	42.0	16.0	57.3	41.1	17.5	54.7	40.2	19.3	51.8	39.1	21.1	48.5	38.2	23.4
	22.0	30	66.3	43.3	15.3	64.0	42.8	16.5	61.2	42.0	17.9	58.3	40.9	19.7	55.4	40.0	21.4	52.0	38.7	23.9
	24.0	32	69.7	44.6	15.7	67.3	42.8	16.7	64.3	42.0	18.3	62.7	43.8	20.2	59.6	42.8	22.0	54.4	38.2	24.2
198 (0.11)	14.0	20	54.5	43.7	14.4	52.4	41.3	15.4	49.8	40.2	18.7	47.2	39.5	18.5	44.7	38.4	20.3	41.6	37.1	22.6
	16.0	22	57.9	42.2	14.6	55.7	41.3	15.6	53.0	40.2	17.1	50.3	39.5	18.7	47.6	38.4	20.7	44.4	37.3	23.0
	18.0	25	61.3	44.2	15.0	59.0	43.7	15.9	56.2	42.8	17.5	53.4	41.7	19.1	50.6	40.8	20.8	47.3	39.7	23.4
	19.0	27	63.0	45.5	15.0	60.7	44.9	16.1	57.8	43.8	17.5	55.0	42.8	19.3	52.1	42.0	21.0	48.7	40.7	23.6
	19.5	27	63.9	46.4	15.5	61.5	44.9	16.1	58.6	43.8	17.7	55.8	42.8	19.3	52.9	42.0	21.2	49.4	40.7	23.6
	22.0	30	68.1	46.4	15.5	65.7	45.7	16.4	62.7	44.9	18.1	59.6	43.8	19.8	56.6	42.8	21.6	52.9	41.9	24.2
	24.0	32	71.5	48.0	16.0	69.0	45.8	16.9	65.9	44.9	18.5	62.7	43.8	20.2	59.6	42.8	22.0	55.8	41.9	24.6

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063946A

FVPGR20NY1 + RUR20NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
138 (0.07)	14.0	20	57.3	43.9	16.7	55.3	41.4	18.1	52.8	40.6	19.7	50.3	39.6	21.6	47.8	38.4	23.9	44.8	37.0	26.7
	16.0	22	60.6	42.3	17.1	58.5	41.4	18.3	55.9	40.6	20.2	53.4	39.6	22.0	50.8	38.6	24.1	47.7	37.2	26.9
	18.0	25	63.9	44.3	17.2	61.7	43.9	18.7	59.1	42.7	20.4	56.4	41.7	22.5	53.8	40.8	24.6	50.6	39.4	27.4
	19.0	27	65.5	45.3	17.5	63.3	44.5	18.7	60.6	43.9	20.6	57.9	42.9	22.7	55.3	41.7	24.8	52.0	40.7	27.6
	19.5	27	66.3	45.3	17.5	64.1	43.5	20.7	61.4	43.9	20.6	58.7	42.9	22.7	56.0	41.7	24.8	52.8	40.7	27.8
	22.0	30	70.4	46.3	17.9	68.1	45.3	19.3	65.3	44.3	21.2	62.5	43.5	23.0	59.7	42.3	25.3	56.4	41.0	28.1
162 (0.09)	24.0	32	73.6	46.3	18.4	71.3	45.3	19.8	68.5	44.3	21.4	65.6	43.5	23.5	62.7	42.3	25.8	59.3	41.0	28.6
	14.0	20	58.6	45.6	16.9	56.5	43.1	18.0	53.8	41.9	19.9	51.2	41.0	21.8	48.5	39.8	23.9	45.4	38.4	26.7
	16.0	22	62.3	43.9	17.0	60.1	43.1	18.5	57.3	42.3	20.1	54.5	41.0	22.0	51.7	40.0	24.3	48.4	38.6	27.1
	18.0	25	66.0	46.1	17.6	63.6	45.3	18.7	60.7	44.3	20.6	57.8	43.3	22.4	54.9	42.5	24.8	51.4	41.0	27.6
	19.0	27	67.8	47.1	17.8	65.4	46.5	18.9	62.5	45.5	20.8	59.5	44.5	22.7	56.5	43.3	25.0	52.9	42.3	27.8
	19.5	27	68.7	47.1	17.8	66.3	46.5	18.9	63.3	45.5	20.8	60.5	44.5	22.9	57.3	43.3	25.0	53.7	42.3	27.8
198 (0.11)	22.0	30	73.4	47.9	18.2	70.8	47.3	19.6	67.7	46.5	21.2	64.5	45.3	23.4	61.3	44.3	25.4	57.5	42.8	28.4
	24.0	32	77.1	49.3	18.6	74.4	47.3	19.8	71.1	46.5	21.7	69.4	48.5	24.0	65.9	47.3	26.1	60.2	42.2	28.8
	14.0	20	60.2	48.3	17.1	57.9	45.7	18.2	55.1	44.5	22.1	52.2	43.7	22.0	49.4	42.5	24.1	46.0	41.0	26.9
	16.0	22	64.0	46.7	17.3	61.6	45.7	18.5	58.7	44.5	20.3	55.7	43.7	22.2	52.7	42.5	24.5	49.1	41.2	27.3
	18.0	25	67.8	48.9	17.8	65.3	48.3	18.9	62.2	47.3	20.8	59.1	46.1	22.6	56.0	45.1	24.7	52.3	43.9	27.8
	19.0	27	69.7	50.3	17.8	67.1	49.7	19.1	64.0	48.5	20.8	60.8	47.3	22.9	57.6	46.5	24.9	53.8	45.0	28.0
	19.5	27	70.6	51.3	18.3	68.1	49.7	19.1	64.9	48.5	21.0	61.7	47.3	22.9	58.5	46.5	25.2	54.6	45.0	28.0
	22.0	30	75.3	51.3	18.4	72.7	50.5	19.5	69.3	49.7	21.5	65.9	48.5	23.5	62.6	47.3	25.6	58.6	46.3	28.7
	24.0	32	79.1	53.1	19.0	76.3	50.7	20.1	72.9	49.7	21.9	69.4	48.5	24.0	65.9	47.3	26.1	61.7	46.3	29.2

Symbols:

AFR: Air flow rate (m³/min.)
 BF : Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC : Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI : Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063947A

9.1.3 FDR-N

FDR05NY1 + RUR05NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
41 (0.17)	14.0	20	14.5	11.1	3.6	14.0	10.5	3.9	13.4	10.3	4.3	12.7	10.0	4.7	12.1	9.7	5.2	11.3	9.4	5.8
	16.0	22	15.3	10.7	3.7	14.8	10.5	4.0	14.1	10.3	4.4	13.5	10.0	4.8	12.8	9.8	5.3	12.1	9.4	5.9
	18.0	25	16.1	11.2	3.8	15.6	11.1	4.1	14.9	10.8	4.4	14.3	10.5	4.9	13.6	10.3	5.4	12.8	10.0	6.0
	19.0	27	16.6	11.4	3.8	16.0	11.2	4.1	15.3	11.1	4.5	14.7	10.8	5.0	14.0	10.5	5.4	13.2	10.3	6.0
	19.5	27	16.8	11.4	3.8	16.2	11.0	4.5	15.5	11.1	4.5	14.8	10.8	5.0	14.2	10.5	5.4	13.3	10.3	6.1
	22.0	30	17.8	11.7	3.9	17.2	11.4	4.2	16.5	11.2	4.6	15.8	11.0	5.0	15.1	10.7	5.5	14.3	10.4	6.1
46 (0.19)	24.0	32	18.6	11.7	4.0	18.0	11.4	4.3	17.3	11.2	4.7	16.6	11.0	5.1	15.9	10.7	5.6	15.0	10.4	6.2
	14.0	20	14.8	11.5	3.7	14.3	10.9	3.9	13.6	10.6	4.3	12.9	10.4	4.8	12.3	10.1	5.2	11.5	9.7	5.8
	16.0	22	15.7	11.1	3.7	15.2	10.9	4.0	14.5	10.7	4.4	13.8	10.4	4.8	13.1	10.1	5.3	12.2	9.8	5.9
	18.0	25	16.7	11.7	3.8	16.1	11.4	4.1	15.4	11.2	4.5	14.6	10.9	4.9	13.9	10.7	5.4	13.0	10.4	6.0
	19.0	27	17.2	11.9	3.9	16.5	11.8	4.1	15.8	11.5	4.5	15.0	11.2	4.9	14.3	10.9	5.5	13.4	10.7	6.1
	19.5	27	17.4	11.9	3.9	16.8	11.8	4.1	16.0	11.5	4.5	15.3	11.2	5.0	14.5	10.9	5.5	13.6	10.7	6.1
55 (0.23)	22.0	30	18.6	12.1	4.0	17.9	12.0	4.3	17.1	11.8	4.6	16.3	11.4	5.1	15.5	11.2	5.6	14.5	10.8	6.2
	24.0	32	19.5	12.5	4.1	18.8	12.0	4.3	18.0	11.8	4.7	17.5	12.3	5.2	16.7	12.0	5.7	15.2	10.7	6.3
	14.0	20	15.2	12.2	3.7	14.7	11.6	4.0	13.9	11.2	4.8	13.2	11.0	4.8	12.5	10.7	5.3	11.6	10.4	5.9
	16.0	22	16.2	11.8	3.8	15.6	11.6	4.0	14.8	11.2	4.4	14.1	11.0	4.8	13.3	10.7	5.4	12.4	10.4	6.0
	18.0	25	17.1	12.4	3.9	16.5	12.2	4.1	15.7	12.0	4.5	14.9	11.7	4.9	14.2	11.4	5.4	13.2	11.1	6.1
	19.0	27	17.6	12.7	3.9	17.0	12.6	4.2	16.2	12.3	4.5	15.4	12.0	5.0	14.6	11.8	5.4	13.6	11.4	6.1
55 (0.23)	19.5	27	17.9	13.0	4.0	17.2	12.6	4.2	16.4	12.3	4.6	15.6	12.0	5.0	14.8	11.8	5.5	13.8	11.4	6.1
	22.0	30	19.1	13.0	4.0	18.4	12.8	4.3	17.5	12.6	4.7	16.7	12.3	5.1	15.8	12.0	5.6	14.8	11.7	6.3
	24.0	32	20.0	13.4	4.1	19.3	12.8	4.4	18.4	12.6	4.8	17.5	12.3	5.2	16.7	12.0	5.7	15.6	11.7	6.4

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

- Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
- shows nominal capacities.
- SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
- Direct interpolation is permissible.
 Do not extrapolate.
- Capacities are based on the following conditions.
 Corresponding refrigerant piping length :5.0m
 Level difference :0m

3D063948

FDR06NY1 + RUR06NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
49 (0.15)	14.0	20	17.2	13.2	4.3	16.6	12.5	4.7	15.9	12.2	5.1	15.1	11.9	5.6	14.4	11.6	6.2	13.5	11.1	6.9
	16.0	22	18.2	12.7	4.4	17.6	12.5	4.7	16.8	12.2	5.2	16.1	11.9	5.7	15.3	11.6	6.2	14.3	11.2	6.9
	18.0	25	19.2	13.3	4.4	18.6	13.2	4.8	17.8	12.8	5.2	17.0	12.5	5.8	16.2	12.3	6.3	15.2	11.9	7.1
	19.0	27	19.7	13.6	4.5	19.1	13.4	4.8	18.2	13.2	5.3	17.4	12.9	5.8	16.6	12.5	6.4	15.7	12.2	7.1
	19.5	27	19.9	13.6	4.5	19.3	13.1	5.3	18.5	13.2	5.3	17.7	12.9	5.8	16.8	12.5	6.4	15.9	12.2	7.2
	22.0	30	21.2	13.9	4.6	20.5	13.6	5.0	19.7	13.3	5.5	18.8	13.1	5.9	18.0	12.7	6.5	17.0	12.3	7.2
54 (0.16)	24.0	32	22.2	13.9	4.7	21.5	13.6	5.1	20.6	13.3	5.5	19.7	13.1	6.1	18.9	12.7	6.6	17.8	12.3	7.4
	14.0	20	17.6	13.7	4.4	17.0	13.0	4.6	16.2	12.6	5.1	15.4	12.3	5.6	14.6	12.0	6.2	13.7	11.5	6.9
	16.0	22	18.7	13.2	4.4	18.1	13.0	4.8	17.2	12.7	5.2	16.4	12.3	5.7	15.6	12.0	6.3	14.6	11.6	7.0
	18.0	25	19.8	13.9	4.5	19.1	13.6	4.8	18.3	13.3	5.3	17.4	13.0	5.8	16.5	12.8	6.4	15.5	12.3	7.1
	19.0	27	20.4	14.2	4.6	19.7	14.0	4.9	18.8	13.7	5.4	17.9	13.4	5.8	17.0	13.0	6.4	15.9	12.7	7.2
	19.5	27	20.7	14.2	4.6	20.0	14.0	4.9	19.1	13.7	5.4	18.2	13.4	5.9	17.2	13.0	6.4	16.2	12.7	7.2
64 (0.18)	22.0	30	22.1	14.4	4.7	21.3	14.2	5.1	20.4	14.0	5.5	19.4	13.6	6.0	18.4	13.3	6.6	17.3	12.9	7.3
	24.0	32	23.2	14.8	4.8	22.4	14.2	5.1	21.4	14.0	5.6	20.9	14.6	6.2	19.8	14.2	6.7	18.1	12.7	7.4
	14.0	20	18.1	14.5	4.4	17.4	13.7	4.7	16.6	13.4	5.7	15.7	13.1	5.7	14.9	12.8	6.2	13.8	12.3	6.9
	16.0	22	19.3	14.0	4.5	18.5	13.7	4.8	17.6	13.4	5.2	16.7	13.1	5.7	15.9	12.8	6.3	14.8	12.4	7.0
	18.0	25	20.4	14.7	4.6	19.6	14.5	4.9	18.7	14.2	5.4	17.8	13.9	5.8	16.8	13.6	6.4	15.7	13.2	7.2
	19.0	27	21.0	15.1	4.6	20.2	15.0	4.9	19.2	14.6	5.4	18.3	14.2	5.9	17.3	14.0	6.4	16.2	13.5	7.2
64 (0.18)	19.5	27	21.2	15.4	4.7	20.5	15.0	4.9	19.5	14.6	5.4	18.6	14.2	5.9	17.6	14.0	6.5	16.4	13.5	7.2
	22.0	30	22.7	15.4	4.8	21.9	15.2	5.0	20.8	15.0	5.5	19.8	14.6	6.1	18.8	14.2	6.6	17.6	13.9	7.4
	24.0	32	23.8	16.0	4.9	23.0	15.3	5.2	21.9	15.0	5.6	20.9	14.6	6.2	19.8	14.2	6.7	18.6	13.9	7.5

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

- Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
- shows nominal capacities.
- SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
- Direct interpolation is permissible.
 Do not extrapolate.
- Capacities are based on the following conditions.
 Corresponding refrigerant piping length :5.0m
 Level difference :0m

3D063949A

FDR08NY1 + RUR08NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
61 (0, 20)	14.0	20	23.1	17.7	5.9	22.3	16.7	6.4	21.3	16.4	7.0	20.3	16.0	7.6	19.3	15.5	8.5	18.1	14.9	9.4
	16.0	22	24.4	17.0	6.1	23.6	16.7	6.5	22.6	16.4	7.1	21.5	16.0	7.8	20.5	15.6	8.5	19.2	15.0	9.5
	18.0	25	25.8	17.9	6.1	24.9	17.7	6.6	23.8	17.2	7.2	22.8	16.8	7.9	21.7	16.5	8.7	20.4	15.9	9.7
	19.0	27	26.4	18.3	6.2	25.5	17.9	6.6	24.5	17.7	7.3	23.4	17.3	8.0	22.3	16.8	8.8	21.0	16.4	9.8
	19.5	27	26.7	18.3	6.2	25.9	17.5	7.3	24.8	17.7	7.3	23.7	17.3	8.0	22.6	16.8	8.8	21.3	16.4	9.8
	22.0	30	28.4	18.7	6.3	27.5	18.3	6.8	26.4	17.9	7.5	25.2	17.5	8.1	24.1	17.0	9.0	22.7	16.6	9.9
68 (0, 21)	14.0	20	23.6	18.4	6.0	22.8	17.4	6.4	21.7	16.9	7.0	20.6	16.6	7.7	19.6	16.1	8.4	18.3	15.5	9.4
	16.0	22	25.1	17.7	6.0	24.2	17.4	6.5	23.1	17.0	7.1	22.0	16.6	7.8	20.9	16.1	8.6	19.5	15.6	9.6
	18.0	25	26.6	18.6	6.2	25.7	18.3	6.6	24.5	17.9	7.3	23.3	17.4	7.9	22.1	17.1	8.8	20.7	16.5	9.8
	19.0	27	27.4	19.0	6.3	26.4	18.7	6.7	25.2	18.3	7.4	24.0	17.9	8.0	22.8	17.4	8.8	21.4	17.1	9.8
	19.5	27	27.7	19.0	6.3	26.8	18.7	6.7	25.5	18.3	7.4	24.4	17.9	8.1	23.1	17.4	8.8	21.7	17.1	9.8
	22.0	30	29.6	19.3	6.4	28.6	19.1	6.9	27.3	18.7	7.5	26.0	18.3	8.3	24.7	17.9	9.0	23.2	17.3	10.1
82 (0, 24)	14.0	20	24.3	19.5	6.0	23.4	18.4	6.5	22.2	17.9	7.8	21.1	17.6	7.8	19.9	17.1	8.5	18.5	16.5	9.5
	16.0	22	25.8	18.8	6.1	24.9	18.4	6.5	23.7	17.9	7.2	22.5	17.6	7.9	21.3	17.1	8.7	19.8	16.6	9.7
	18.0	25	27.3	19.7	6.3	26.3	19.5	6.7	25.1	19.1	7.3	23.8	18.6	8.0	22.6	18.2	8.7	21.1	17.7	9.8
	19.0	27	28.1	20.3	6.3	27.1	20.0	6.8	25.8	19.6	7.3	24.5	19.1	8.1	23.2	18.7	8.8	21.7	18.2	9.9
	19.5	27	28.5	20.7	6.5	27.5	20.0	6.8	26.2	19.6	7.4	24.9	19.1	8.1	23.6	18.7	8.9	22.0	18.2	9.9
	22.0	30	30.4	20.7	6.5	29.3	20.4	6.9	28.0	20.0	7.6	26.6	19.6	8.3	25.2	19.1	9.1	23.6	18.7	10.1
	24.0	32	31.9	21.4	6.7	30.8	20.4	7.1	29.4	20.0	7.7	28.0	19.6	8.5	26.6	19.1	9.2	24.9	18.7	10.3

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063950A

FDR10NY1 + RUR10NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
70 (0, 20)	14.0	20	28.7	22.0	7.6	27.7	20.8	8.2	26.4	20.4	8.9	25.2	19.9	9.8	23.9	19.2	10.9	22.4	18.5	12.1
	16.0	22	30.3	21.2	7.8	29.3	20.8	8.3	28.0	20.4	9.2	26.7	19.9	10.0	25.4	19.3	11.0	23.9	18.6	12.2
	18.0	25	32.0	22.2	7.8	30.9	22.0	8.5	29.6	21.4	9.3	28.3	20.9	10.2	26.9	20.5	11.1	25.3	19.7	12.4
	19.0	27	32.8	22.7	7.9	31.7	22.3	8.5	30.4	22.0	9.3	29.0	21.5	10.3	27.7	20.9	11.3	26.1	20.4	12.5
	19.5	27	33.2	22.7	7.9	32.1	21.8	9.4	30.8	22.0	9.4	29.4	21.5	10.3	28.0	20.9	11.3	26.4	20.4	12.6
	22.0	30	35.2	23.2	8.1	34.1	22.7	8.8	32.7	22.2	9.6	31.3	21.8	10.5	29.9	21.2	11.5	28.2	20.6	12.8
78 (0, 21)	14.0	20	29.3	22.8	7.7	28.3	21.6	8.2	27.0	21.0	9.0	25.6	20.6	9.9	24.3	20.0	10.8	22.7	19.2	12.1
	16.0	22	31.2	22.0	7.7	30.1	21.6	8.4	28.7	21.2	9.1	27.3	20.6	10.0	25.9	20.1	11.1	24.2	19.3	12.3
	18.0	25	33.0	23.1	8.0	31.9	22.7	8.5	30.4	22.2	9.4	29.0	21.7	10.2	27.5	21.3	11.3	25.8	20.5	12.5
	19.0	27	34.0	23.6	8.1	32.8	23.3	8.6	31.3	22.8	9.4	29.8	22.3	10.3	28.3	21.7	11.3	26.5	21.2	12.6
	19.5	27	34.4	23.6	8.1	33.2	23.3	8.6	31.7	22.8	9.4	30.3	22.3	10.4	28.7	21.7	11.4	26.9	21.2	12.6
	22.0	30	36.7	24.0	8.2	35.5	23.7	8.9	33.9	23.3	9.7	32.3	22.7	10.6	30.7	22.2	11.5	28.8	21.4	12.9
94 (0, 24)	14.0	20	30.2	24.2	7.8	29.0	22.9	8.3	27.6	22.3	10.1	26.2	21.9	10.0	24.7	21.3	10.9	23.0	20.5	12.2
	16.0	22	32.1	23.4	7.9	30.9	22.9	8.4	29.4	22.3	9.2	27.9	21.9	10.1	26.4	21.3	11.1	24.6	20.7	12.4
	18.0	25	33.9	24.5	8.1	32.7	24.2	8.6	31.2	23.7	9.4	29.6	23.1	10.3	28.0	22.6	11.2	26.2	22.0	12.6
	19.0	27	34.9	25.2	8.1	33.6	24.9	8.7	32.0	24.3	9.4	30.5	23.7	10.4	28.9	23.3	11.3	27.0	22.6	12.7
	19.5	27	35.4	25.7	8.3	34.1	24.9	8.7	32.5	24.3	9.5	30.9	23.7	10.4	29.3	23.7	11.4	27.4	22.6	12.7
	22.0	30	37.7	25.7	8.4	36.4	25.3	8.9	34.7	24.9	9.7	33.0	24.3	10.7	31.3	23.7	11.6	29.3	23.2	13.0
	24.0	32	39.6	26.6	8.6	38.2	25.4	9.1	36.5	24.9	9.9	34.7	24.3	10.9	33.0	23.7	11.8	30.9	23.2	13.2

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC^* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063951A

FDR13NY1 + RUR13NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
123 (0,20)	14.0	20	35.0	26.8	9.7	33.7	25.3	10.5	32.2	24.8	11.4	30.7	24.2	12.5	29.1	23.4	13.9	27.3	22.6	15.5
	16.0	22	37.0	25.8	10.0	35.7	25.3	10.6	34.1	24.8	11.7	32.5	24.2	12.8	31.0	23.6	14.0	29.1	22.7	15.6
	18.0	25	38.9	27.0	10.0	37.6	26.8	10.9	36.0	26.0	11.8	34.4	25.4	13.1	32.8	24.9	14.3	30.8	24.0	15.9
	19.0	27	39.9	27.6	10.1	38.6	27.1	10.8	37.0	26.8	11.9	35.3	26.1	13.2	33.7	25.4	14.4	31.7	24.8	16.0
	19.5	27	40.4	27.6	10.1	39.1	26.5	12.0	37.5	26.8	12.0	35.8	26.1	13.2	34.2	25.4	14.4	32.2	24.8	16.2
	22.0	30	42.9	28.2	10.4	41.6	27.6	11.2	39.9	27.0	12.3	38.1	26.5	13.4	36.4	25.8	14.7	34.4	25.0	16.3
	24.0	32	44.9	28.2	10.7	43.5	27.6	11.5	41.8	27.0	12.4	40.0	26.5	13.6	38.3	25.8	15.0	36.2	25.0	16.6
136 (0,21)	14.0	20	35.7	27.8	9.8	34.4	26.3	10.5	32.8	25.5	11.6	31.2	25.0	12.7	29.6	24.3	13.9	27.7	23.4	15.5
	16.0	22	38.0	26.8	9.9	36.6	26.3	10.8	34.9	25.8	11.7	33.2	25.0	12.8	31.6	24.4	14.1	29.5	23.5	15.8
	18.0	25	40.2	28.1	10.2	38.8	27.6	10.9	37.0	27.0	12.0	35.3	26.4	13.0	33.5	25.9	14.4	31.4	25.0	16.0
	19.0	27	41.4	28.7	10.3	39.9	28.3	11.0	38.1	27.7	12.1	36.3	27.1	13.2	34.5	26.4	14.5	32.3	25.8	16.1
	19.5	27	41.9	28.7	10.3	40.5	28.3	11.0	38.6	27.7	12.1	36.9	27.1	13.3	35.0	26.4	14.5	32.7	25.8	16.1
	22.0	30	44.8	29.2	10.5	43.2	28.8	11.4	41.3	28.3	12.3	39.3	27.6	13.6	37.4	27.0	14.8	35.1	26.1	16.5
	24.0	32	47.0	30.1	10.8	45.4	28.8	11.5	43.4	28.3	12.6	42.3	29.6	13.9	40.2	28.8	15.2	36.7	25.7	16.7
163 (0,24)	14.0	20	36.7	29.5	9.9	35.3	27.9	10.6	33.6	27.1	12.9	31.9	26.6	12.8	30.1	25.9	14.0	28.0	25.0	15.6
	16.0	22	39.0	28.5	10.1	37.6	27.9	10.7	35.8	27.1	11.8	34.0	26.6	12.9	32.1	25.9	14.2	30.0	25.2	15.9
	18.0	25	41.3	29.8	10.3	39.8	29.5	11.0	37.9	28.8	12.1	36.0	28.1	13.1	34.2	27.5	14.4	31.9	26.8	16.1
	19.0	27	42.5	30.7	10.3	41.0	30.3	11.1	39.0	29.6	12.1	37.1	28.8	13.3	35.2	28.3	14.5	32.8	27.5	16.3
	19.5	27	43.1	31.3	10.6	41.5	30.3	11.1	39.6	29.6	12.2	37.6	28.8	13.3	35.7	28.3	14.6	33.3	27.5	16.2
	22.0	30	46.0	31.3	10.7	44.3	30.8	11.3	42.3	30.3	12.5	40.2	29.6	13.7	38.2	28.8	14.9	35.7	28.3	16.7
	24.0	32	48.3	32.4	11.0	46.6	30.9	11.6	44.4	30.3	12.7	42.3	29.6	13.9	40.2	28.8	15.2	37.6	28.3	16.9

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063952A

FDR15NY1 + RUR15NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
123 (0,20)	14.0	20	46.1	35.3	11.8	44.4	33.3	12.8	42.4	32.6	13.9	40.4	31.8	15.3	38.4	30.9	16.9	36.0	29.7	18.9
	16.0	22	48.7	33.9	12.1	47.0	33.3	12.9	44.9	32.6	14.3	42.9	31.8	15.6	40.8	31.0	17.1	38.3	29.9	19.1
	18.0	25	51.3	35.6	12.2	49.6	35.2	13.3	47.5	34.3	14.4	45.3	33.5	15.9	43.2	32.8	17.4	40.6	31.6	19.4
	19.0	27	52.6	36.4	12.4	50.9	35.7	13.2	48.7	35.2	14.6	46.6	34.4	16.0	44.4	33.5	17.5	41.8	32.7	19.5
	19.5	27	53.3	36.4	12.4	51.5	34.9	14.6	49.3	35.2	14.6	47.2	34.4	16.0	45.0	33.5	17.5	42.4	32.7	19.7
	22.0	30	56.5	37.2	12.7	54.7	36.4	13.7	52.5	35.6	15.0	50.2	34.9	16.3	48.0	33.9	17.9	45.3	33.0	19.9
	24.0	32	59.2	37.2	13.0	57.3	36.4	14.0	55.0	35.6	15.1	52.7	34.9	16.6	50.4	33.9	18.2	47.6	33.0	20.2
136 (0,21)	14.0	20	47.1	36.6	11.9	45.4	34.6	12.8	43.2	33.6	14.1	41.1	33.0	15.4	39.0	32.0	16.9	36.5	30.8	18.9
	16.0	22	50.0	35.2	12.1	48.2	34.6	13.1	46.0	33.9	14.2	43.8	33.0	15.6	41.6	32.2	17.2	38.9	31.0	19.2
	18.0	25	53.0	37.0	12.4	51.1	36.4	13.2	48.8	35.6	14.6	46.5	34.8	15.9	44.1	34.1	17.5	41.3	32.9	19.5
	19.0	27	54.5	37.8	12.6	52.6	37.3	13.4	50.2	36.5	14.7	47.8	35.7	16.0	45.4	34.8	17.7	42.5	34.0	19.6
	19.5	27	55.2	37.8	12.6	53.3	37.3	13.4	50.9	36.5	14.7	48.6	35.7	16.2	46.0	34.8	17.7	43.1	34.0	19.6
	22.0	30	58.9	38.5	12.8	56.9	38.0	13.9	54.3	37.3	15.0	51.8	36.4	16.5	49.2	35.6	18.0	46.2	34.4	20.1
	24.0	32	61.9	39.6	13.2	59.8	38.0	14.0	57.1	37.3	15.4	55.7	39.0	17.0	52.9	38.0	18.5	48.4	33.9	20.4
163 (0,24)	14.0	20	48.4	38.8	12.1	46.6	36.7	12.9	44.3	35.7	15.7	42.0	35.1	15.5	39.7	34.1	17.0	36.9	32.9	19.0
	16.0	22	51.4	37.5	12.2	49.5	36.7	13.1	47.1	35.7	14.4	44.7	35.1	15.7	42.3	34.1	17.4	39.5	33.1	19.3
	18.0	25	54.5	39.3	12.6	52.5	38.8	13.4	50.0	38.0	14.7	47.5	37.0	16.0	45.0	36.2	17.5	42.0	35.2	19.7
	19.0	27	56.0	40.4	12.6	53.9	39.9	13.5	51.4	39.0	14.7	48.8	38.0	16.2	46.3	37.3	17.6	43.3	36.2	19.8
	19.5	27	56.7	41.2	13.0	54.7	39.9	13.5	52.1	39.0	14.9	49.5	38.0	16.2	47.0	37.3	17.8	43.9	36.2	19.8
	22.0	30	60.5	41.2	13.0	58.4	40.6	13.8	55.7	39.9	15.2	53.0	39.0	16.6	50.3	38.0	18.1	47.0	37.2	20.3
	24.0	32	63.6	42.6	13.4	61.3	40.7	14.2	58.5	39.9	15.5	55.7	39.0	17.0	52.9	38.0	18.5	49.6	37.2	20.6

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, } (DB^*)$
 $= 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063953A

FDR18NY1 + RUR18NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
150 (0,20)	14.0	20	52.1	39.9	14.0	50.3	37.7	15.2	48.0	36.9	16.6	45.7	36.0	18.2	43.4	34.9	20.1	40.7	33.6	22.5
	16.0	22	55.1	38.4	14.4	53.2	37.7	15.4	50.9	36.9	17.0	48.5	36.0	18.6	46.2	35.1	20.3	43.3	33.8	22.7
	18.0	25	58.0	40.2	14.5	56.1	39.9	15.8	53.7	38.8	17.2	51.3	37.9	18.9	48.9	37.1	20.7	46.0	35.8	23.1
	19.0	27	59.5	41.2	14.7	57.6	40.4	15.7	55.1	39.9	17.3	52.7	39.0	19.1	50.2	37.9	20.9	47.3	37.0	23.2
	19.5	27	60.3	41.2	14.7	58.3	39.5	17.4	55.8	39.9	17.4	53.4	39.0	19.1	50.9	37.9	20.9	48.0	37.0	23.5
	22.0	30	64.0	42.1	15.1	61.9	41.2	16.3	59.4	40.2	17.9	56.9	39.5	19.4	54.3	38.4	21.4	51.3	37.3	23.7
	24.0	32	66.9	42.1	15.5	64.9	41.2	16.7	62.2	40.2	18.0	59.6	39.5	19.8	57.0	38.4	21.7	53.9	37.3	24.1
166 (0,21)	14.0	20	53.2	41.5	14.2	51.3	39.1	15.2	48.9	38.0	16.8	46.5	37.3	18.4	44.1	36.2	20.1	41.3	34.9	22.5
	16.0	22	56.6	39.9	14.4	54.6	39.1	15.6	52.1	38.4	17.0	49.5	37.3	18.6	47.0	36.4	20.5	44.0	35.1	22.9
	18.0	25	60.0	41.9	14.8	57.9	41.2	15.8	55.2	40.2	17.4	52.6	39.3	18.9	49.9	38.6	20.9	46.8	37.3	23.2
	19.0	27	61.7	42.8	15.0	59.5	42.3	16.0	56.8	41.3	17.5	54.1	40.4	19.1	51.4	39.3	21.1	48.1	38.4	23.4
	19.5	27	62.5	42.8	15.0	60.3	42.3	16.0	57.6	41.3	17.5	55.0	40.4	19.3	52.1	39.3	21.1	48.8	38.4	23.4
	22.0	30	66.7	43.5	15.3	64.4	43.0	16.5	61.5	42.3	17.9	58.6	41.2	19.7	55.7	40.2	21.4	52.3	38.9	23.9
	24.0	32	70.1	44.8	15.7	67.7	43.0	16.7	64.6	42.3	18.3	63.1	44.1	20.2	59.9	43.0	22.0	54.7	38.4	24.2
199 (0,24)	14.0	20	54.8	43.9	14.4	52.7	41.5	15.4	50.1	40.4	18.7	47.5	39.7	18.5	44.9	38.6	20.3	41.8	37.3	22.6
	16.0	22	58.2	42.4	14.6	56.0	41.5	15.6	53.3	40.4	17.1	50.6	39.7	18.7	47.9	38.6	20.7	44.7	37.5	23.0
	18.0	25	61.6	44.4	15.0	59.4	43.9	15.9	56.5	43.0	17.5	53.7	41.9	19.1	50.9	41.0	20.8	47.5	39.9	23.4
	19.0	27	63.3	45.7	15.0	61.0	45.2	16.1	58.2	44.1	17.5	55.3	43.0	19.3	52.4	42.3	21.0	49.0	40.9	23.6
	19.5	27	64.2	46.6	15.5	61.9	45.2	16.1	59.0	44.1	17.7	56.1	43.0	19.3	53.2	42.3	21.2	49.7	40.9	23.6
	22.0	30	68.5	46.6	15.5	66.1	45.9	16.4	63.0	45.2	18.1	60.0	44.1	19.8	56.9	43.0	21.6	53.2	42.1	24.2
	24.0	32	71.9	48.2	16.0	69.4	46.1	16.9	66.2	45.2	18.5	63.1	44.1	20.2	59.9	43.0	22.0	56.1	42.1	24.6

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, (DB)} = 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063954A

FDR20NY1 + RUR20NY1

Cooling Capacity [50Hz]

AFR (BF)	INDOOR		OUTDOOR TEMPERATURE (°C DB)																	
	EWB (°C)	EDB (°C)	21			25			30			35			40			46		
			TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
150 (0,20)	14.0	20	57.6	44.2	16.7	55.6	41.7	18.1	53.1	40.8	19.7	50.5	39.8	21.6	48.0	38.6	23.9	45.0	37.2	26.7
	16.0	22	60.9	42.5	17.1	58.8	41.7	18.3	56.2	40.8	20.2	53.6	39.8	22.0	51.0	38.8	24.1	47.9	37.4	26.9
	18.0	25	64.2	44.5	17.2	62.0	44.1	18.7	59.4	42.9	20.4	56.7	41.9	22.5	54.0	41.0	24.6	50.8	39.6	27.4
	19.0	27	65.8	45.5	17.5	63.6	44.7	18.7	60.9	44.1	20.6	58.2	43.1	22.7	55.5	41.9	24.8	52.3	40.9	27.6
	19.5	27	66.6	45.5	17.5	64.4	43.7	20.7	61.7	44.1	20.6	59.0	43.1	22.7	56.3	41.9	24.8	53.0	40.9	27.8
	22.0	30	70.7	46.5	17.9	68.5	45.5	19.3	65.7	44.5	21.2	62.9	43.7	23.0	60.0	42.5	25.3	56.7	41.3	28.1
	24.0	32	74.0	46.5	18.4	71.7	45.5	19.8	68.8	44.5	21.4	65.9	43.7	23.5	63.0	42.5	25.8	59.6	41.3	28.6
166 (0,21)	14.0	20	58.9	45.8	16.9	56.7	43.3	18.0	54.1	42.1	19.9	51.4	41.3	21.8	48.8	40.0	23.9	45.6	38.6	26.7
	16.0	22	62.6	44.1	17.0	60.4	43.3	18.5	57.6	42.5	20.1	54.8	41.3	22.0	52.0	40.2	24.3	48.6	38.8	27.1
	18.0	25	66.3	46.3	17.6	64.0	45.5	18.7	61.0	44.5	20.6	58.1	43.5	22.4	55.2	42.7	24.8	51.7	41.2	27.6
	19.0	27	68.2	47.3	17.8	65.8	46.7	18.9	62.8	45.7	20.8	59.8	44.7	22.7	56.8	43.5	25.0	53.2	42.5	27.8
	19.5	27	69.1	47.3	17.8	66.7	46.7	18.9	63.6	45.7	20.8	60.8	44.7	22.9	57.6	43.5	25.0	54.0	42.5	27.8
	22.0	30	73.7	48.1	18.2	71.2	47.5	19.6	68.0	46.7	21.2	64.8	45.5	23.4	61.6	44.5	25.4	57.8	43.0	28.4
	24.0	32	77.5	49.6	18.6	74.8	47.5	19.8	71.5	46.7	21.7	69.7	48.7	24.0	66.2	47.5	26.1	60.5	42.4	28.8
199 (0,24)	14.0	20	60.5	48.6	17.1	58.2	45.9	18.2	55.4	44.7	22.1	52.5	43.9	22.0	49.6	42.7	24.1	46.2	41.2	26.9
	16.0	22	64.3	46.9	17.3	61.9	45.9	18.5	58.9	44.7	20.3	56.0	43.9	22.2	53.0	42.7	24.5	49.4	41.5	27.3
	18.0	25	68.1	49.1	17.8	65.6	48.5	18.9	62.5	47.5	20.8	59.4	46.3	22.6	56.3	45.3	24.7	52.5	44.1	27.8
	19.0	27	70.0	50.6	17.8	67.5	49.9	19.1	64.3	48.7	20.8	61.1	47.5	22.9	57.9	46.7	24.9	54.1	45.3	28.0
	19.5	27	71.0	51.6	18.3	68.4	49.9	19.1	65.2	48.7	21.0	62.0	47.5	22.9	58.8	46.7	25.2	54.9	45.3	28.0
	22.0	30	75.7	51.6	18.4	73.0	50.8	19.5	69.6	49.9	21.5	66.3	48.7	23.5	62.9	47.5	25.6	58.9	46.5	28.7
	24.0	32	79.5	53.3	19.0	76.7	51.0	20.1	73.2	49.9	21.9	69.7	48.7	24.0	66.2	47.5	26.1	62.0	46.5	29.2

Symbols:

AFR: Air flow rate (m³/min.)
 BF: Bypass factor
 EWB: Entering wet bulb temp. (°WB)
 EDB: Entering dry bulb temp. (°DB)
 TC: Total cooling capacity (kW)
 SHC: Sensible heat capacity (kW)
 PI: Power input (kW)
 (Comp. + outdoor fan motor).

Notes:

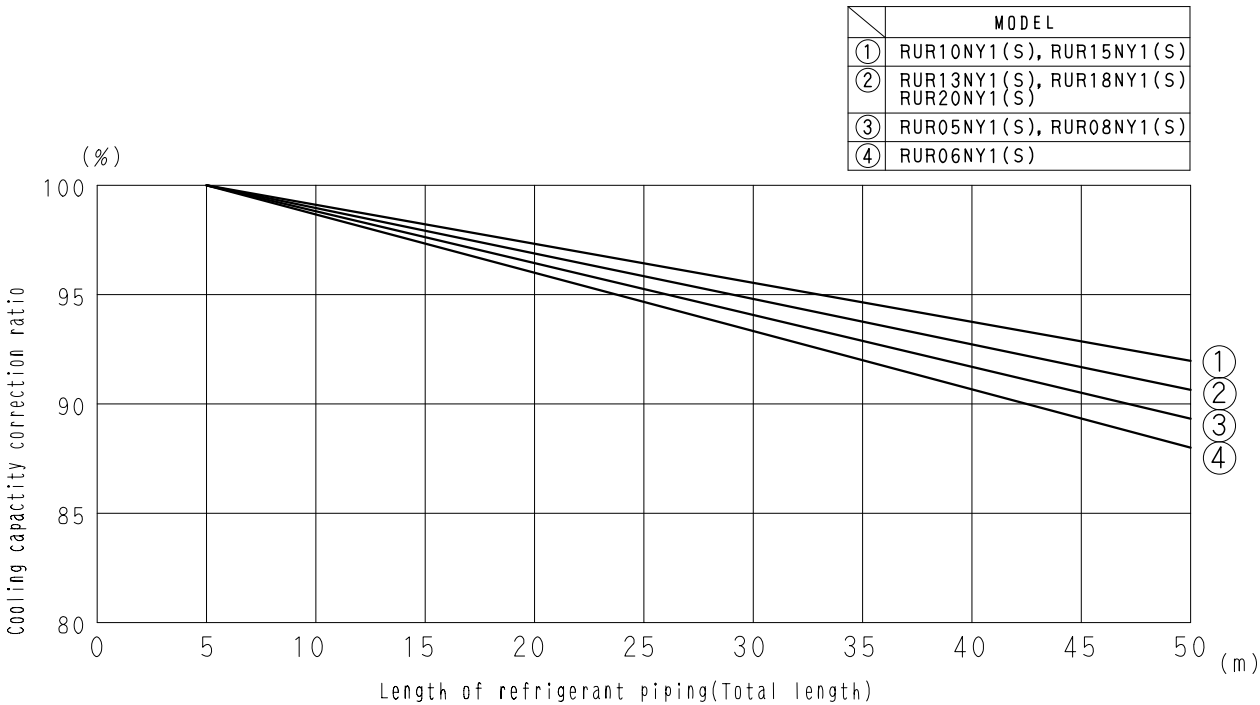
1. Ratings shown are gross capacities which do not include a deduction for indoor fan motor heat.
2. shows nominal capacities.
3. SHC is based on each EWB and EDB.
 $SHC^* = SHC \text{ correction for other dry bulb, (DB)} = 0.02 \times AFR \times (1 - BF) \times (DB^* - EDB)$
 Add SHC* to SHC.
4. Direct interpolation is permissible.
 Do not extrapolate.
5. Capacities are based on the following conditions.
 Corresponding refrigerant piping length : 5.0m
 Level difference : 0m

3D063955A

9.2 Capacity correction factor by the length of refrigerant piping

RUR05NY1 / RUR06NY1 / RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1

The cooling 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)



Notes:

- Line: Correction ratio for cooling capacity
- The correction ratio remains the same whether the outdoor unit is to be installed above or below the indoor unit.
- Calculation method for cooling capacity
Capacity = Cooling capacity obtained from the capacity table × cooling capacity correction ratio.

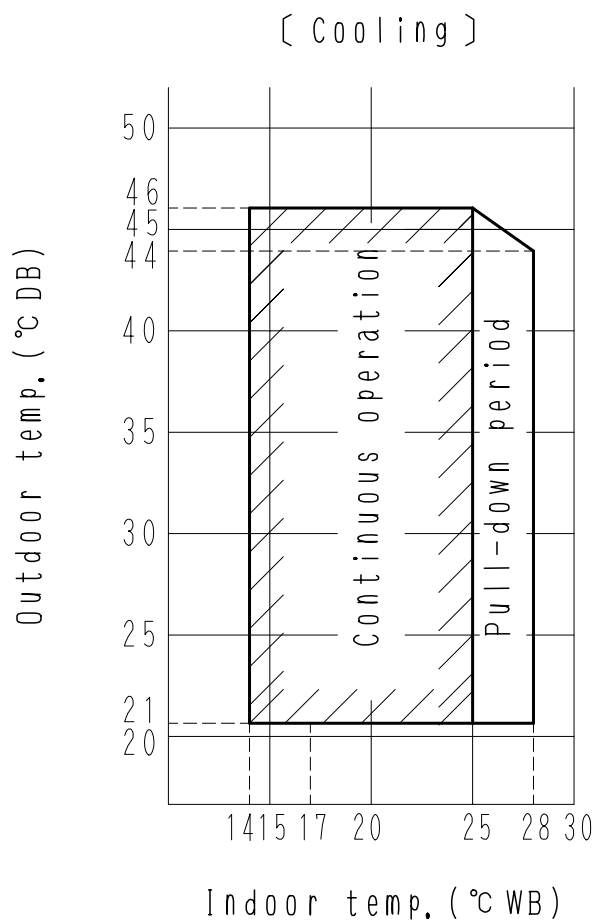
3D063873

10. Operation limits

10.1 Cooling only

1

RUR05NY1 / RUR06NY1 / RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1



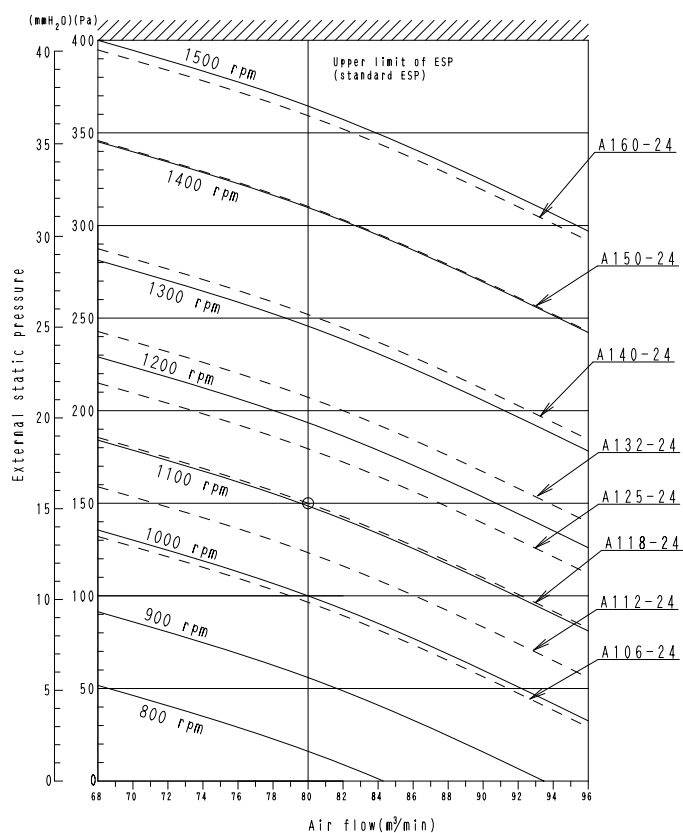
OUTDOOR	MODEL NAME		
	INDOOR		
	FLOOR STAND		DUCT
	DIRECT BLOW	DUCT	
RUR05NY1	FVG05BV1		FD05KAY1
RUR06NY1	FVG06BV1		FD06KAY1
RUR08NY1	FVG08BV1		FD08KAY1
RUR10NY1	FVG10BV1	FVPG10BY1	FD10KAY1
RUR13NY1		FVPG13BY1	FD13KAY1
RUR15NY1		FVPG15BY1	FD15KAY1
RUR18NY1		FVPG18BY1	FD18KAY1
RUR20NY1		FVPG20BY1	FD20KAY1
RUR05NY1S	AFV05KAV1		AFD05KAY1
RUR06NY1S	AFV06KAV1		AFD06KAY1
RUR08NY1S	AFV08KAV1		AFD08KAY1
RUR10NY1S	AFV10KAV1	AFVP10KAY1	AFD10KAY1
RUR13NY1S		AFVP13KAY1	AFD13KAY1
RUR15NY1S		AFVP15KAY1	AFD15KAY1
RUR18NY1S		AFVP18KAY1	AFD18KAY1
RUR20NY1S		AFVP20KAY1	AFD20KAY1
RUR05NY1	FVGR05NV1		FDR05NY1
RUR06NY1	FVGR06NV1		FDR06NY1
RUR08NY1	FVGR08NV1		FDR08NY1
RUR10NY1	FVGR10NV1	FVPR10NY1	FDR10NY1
RUR13NY1		FVPR13NY1	FDR13NY1
RUR15NY1		FVPR15NY1	FDR15NY1
RUR18NY1		FVPR18NY1	FDR18NY1
RUR20NY1		FVPR20NY1	FDR20NY1
RUR05NY1S	AFVR05NV1		AFDR05NY1
RUR06NY1S	AFVR06NV1		AFDR06NY1
RUR08NY1S	AFVR08NV1		AFDR08NY1
RUR10NY1S	AFVR10NV1	AFVPR10NY1	AFDR10NY1
RUR13NY1S		AFVPR13NY1	AFDR13NY1
RUR15NY1S		AFVPR15NY1	AFDR15NY1
RUR18NY1S		AFVPR18NY1	AFDR18NY1
RUR20NY1S		AFVPR20NY1	AFDR20NY1

3D063106B

11. Fan performance

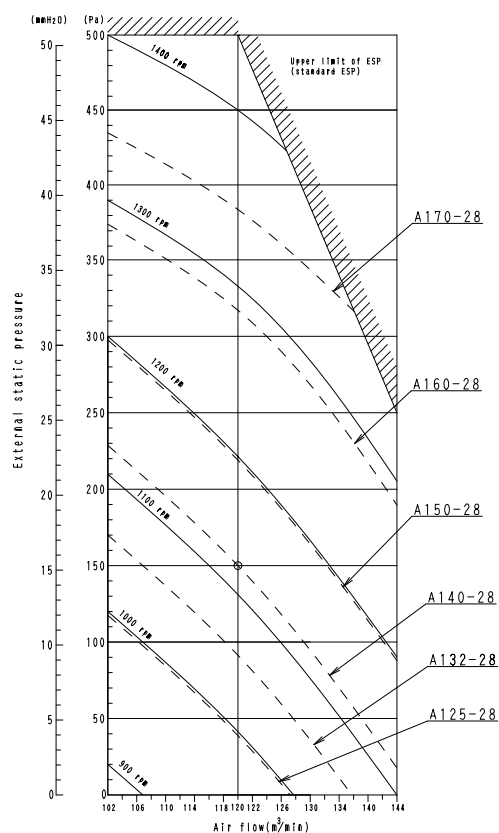
11.1 FVGR-N / FVPGR-N

FVPGR10NY1



4D064265

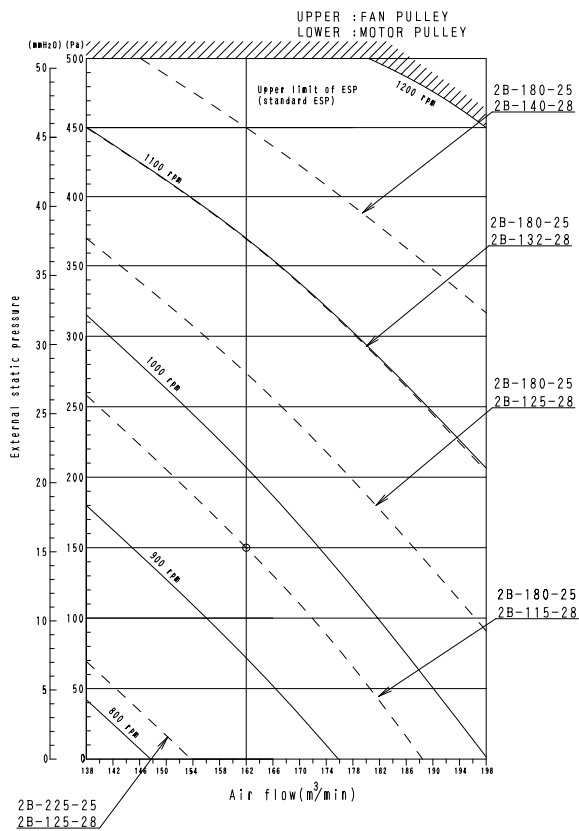
FVPGR13NY1 / FVPGR15NY1



4D064275

FVPGR18NY1 / FVPGR20NY1

1



4D064276B

FVGR05NV1 / FVGR06NV1 / FVGR08NV1 / FVGR10NV1

FVPGR10NY1 / FVPGR13NY1 / FVPGR15NY1 / FVPGR18NY1 / FVPGR20NY1

FAN PERFORMANCE DATA

MODEL	AIR FLOW (m ³ /min)	FAN SPEED MOTOR OUTPUT	ESP (mmH ₂ O)											STANDARD POINT (FACTORY SETTING)
			0	5	10	15	20	25	30	35	40	45	50	
FVGR05N FVGR06N	42	(RPM) (kW)												AIR FLOW=42 m ³ /min ESP=0 mmH ₂ O FAN SPEED=850/800/750 RPM
FVGR08N	54	(RPM) (kW)												AIR FLOW=54 m ³ /min ESP=0 mmH ₂ O FAN SPEED=1000/950/850 RPM
FVGR10N	80	(RPM) (kW)												AIR FLOW=80 m ³ /min ESP=0 mmH ₂ O FAN SPEED=(850/800/750)x2 RPM
FVPGR10N	68	(RPM) (kW)	670 0.36	793 0.44	917 0.57	1030 0.72	1133 0.93	1248 1.11	1329 1.29	1407 1.42	1505 1.50			AIR FLOW=80 m ³ /min ESP=15 mmH ₂ O FAN SPEED=1103 RPM
	80	(RPM) (kW)	788 0.54	903 0.65	1008 0.85	1103 1.03	1213 1.29	1313 1.50	1391 1.68	1491 1.86	1475 2.06			
	96	(RPM) (kW)	940 0.93	1050 1.04	1129 1.24	1241 1.42	1326 1.75	1432 1.94	1521 2.19	1622 2.00	1659 2.20			
FVPGR13N FVPGR15N	102	(RPM) (kW)	870 1.38	920 1.50	980 1.62	1030 1.74	1090 1.86	1140 2.04	1200 2.16	1250 2.34	1310 2.52	1380 2.64	1400 2.76	AIR FLOW=120 m ³ /min ESP=15 mmH ₂ O FAN SPEED=1119 RPM
	120	(RPM) (kW)	970 1.90	1020 2.10	1080 2.20	1119 2.43	1180 2.52	1225 2.64	1280 2.76	1310 2.82	1370 2.88	1400 2.94	1460 3.00	
	144	(RPM) (kW)	1100 3.24	1150 3.36	1200 3.54	1230 3.66	1290 3.20	1320 3.40						
FVPGR18N FVPGR20N	138	(RPM) (kW)	785 1.50	822 1.67	850 1.84	894 2.00	915 2.17	951 2.34	987 2.51	1024 2.68	1061 2.84	1097 3.01	1134 3.18	AIR FLOW=162 m ³ /min ESP=15 mmH ₂ O FAN SPEED=958 RPM
	162	(RPM) (kW)	860 2.34	890 2.54	935 2.74	958 2.93	1000 3.13	1037 3.33	1075 3.53	1112 3.70	1150 3.90	1187 4.10	1200 4.32	
	198	(RPM) (kW)	998 3.70	1015 3.90	1040 4.10	1060 4.25	1090 4.30	1120 4.50	1130 4.64	1155 4.75	1175 5.28	1200 5.50		

ESP: EXTERNAL STATIC PRESSURE

MODEL	OPERATION RANGE			FAN MOTOR SPECIFICATIONS			PULLEY SPECIFICATIONS						
	AIR FLOW (m ³ /min)	RPM	MAX. ALLOWABLE RPM	TYPE	RPM	kW	MOTOR PULLEY			FAN PULLEY			BELT SIZE
FVGR05NV1 FVGR06NV1	42	750-850	850	1 PHASE 50 Hz	750-850	0.245							
FVGR08NV1	54	850-1000	1000		850-1000	0.375							
FVGR10NV1	80	750-850	850		750-850	0.245x2							
FVPGR10NY1	68 - 96	670-1659	1659	3 PHASE 50 Hz	1420	1.5	A	24	118	A	25	160	A46
FVPGR13NY1 FVPGR15NY1	102 - 144	870-1460	1460		1430	2.2	A	28	140	A	25	180	A38
FVPGR18NY1 FVPGR20NY1	138 - 198	785-1200	1200		1430	3.7	2B	28	115	2B	25	180	B32

TYPE	SHAFT D.	PITCH D.
2B	28	115

Pitch Diameter (mm)
 Shaft Diameter (mm)
 A(B):A(B) type pulley
 No. of belts
 (Blank : Single belt)
 2 : Double belts

$$D1 = \frac{D2 \times N2}{N1}$$

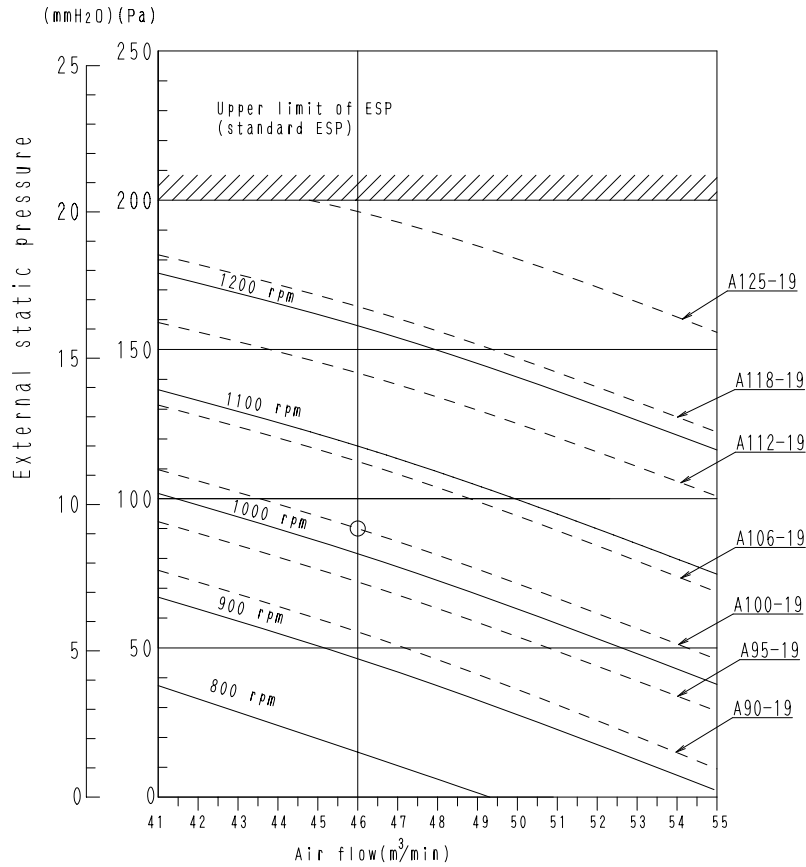
D1 : Pitch Diameter of Motor Pulley (mm)
 D2 : Pitch Diameter of Fan Pulley (mm)
 N1 : Revolution speed of Fan motor (rpm)
 N2 : Fan revolution speed (rpm)

3D064475A

11.2 FDR-N

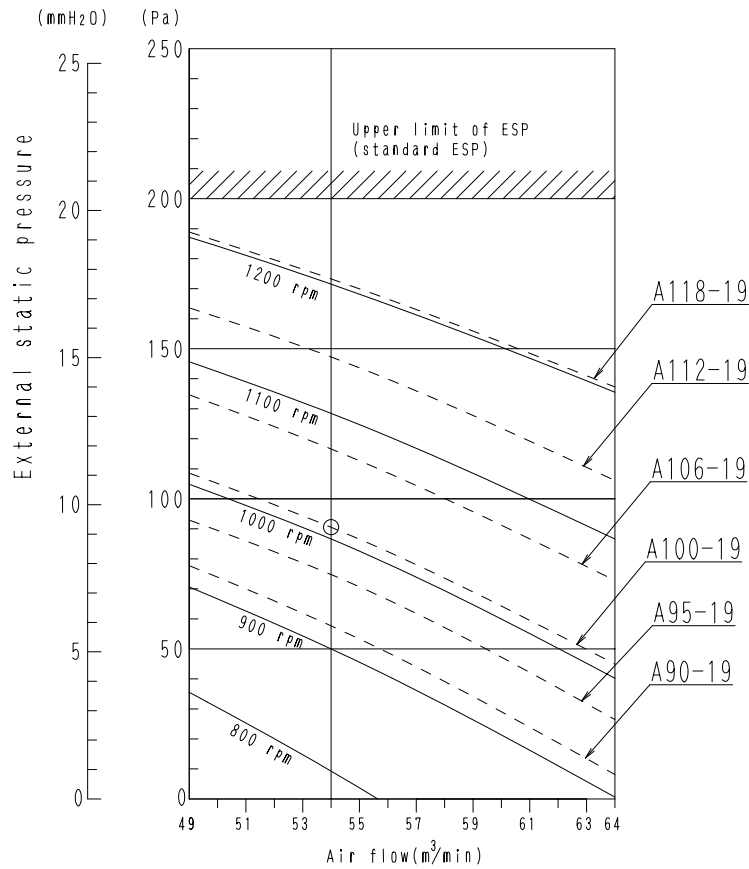
1

FDR05NY1



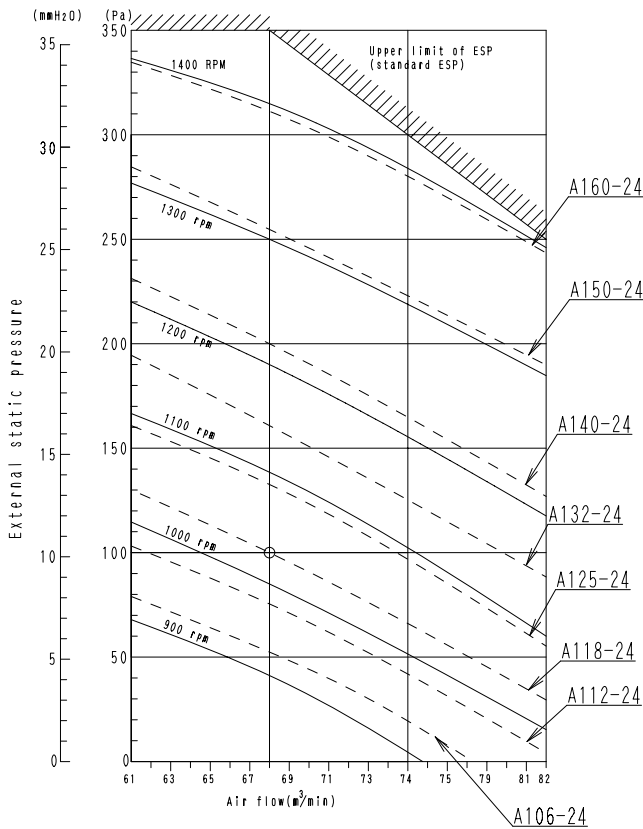
4D064277A

FDR06NY1



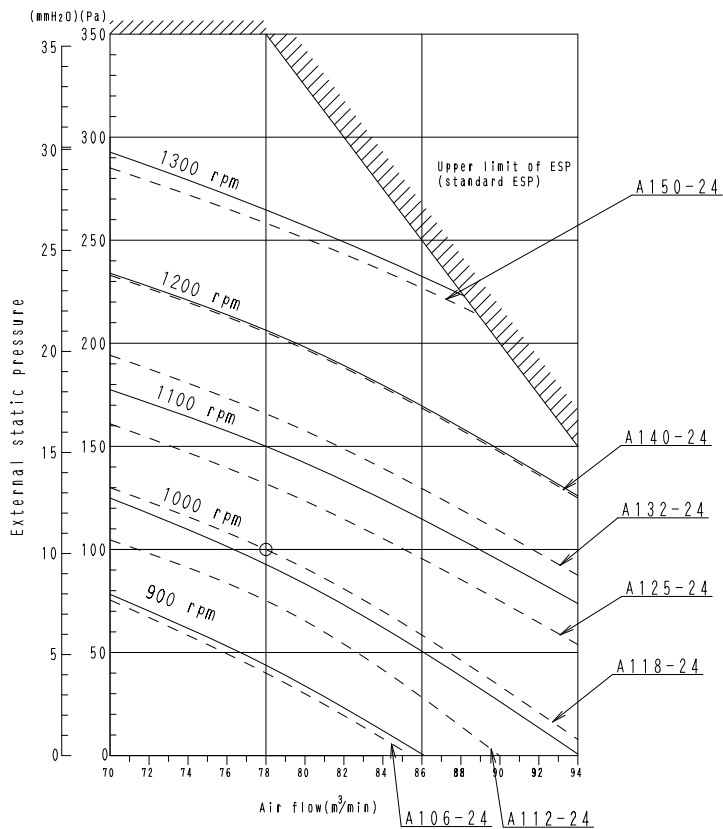
4D064279A

FDR08NY1



4D064278

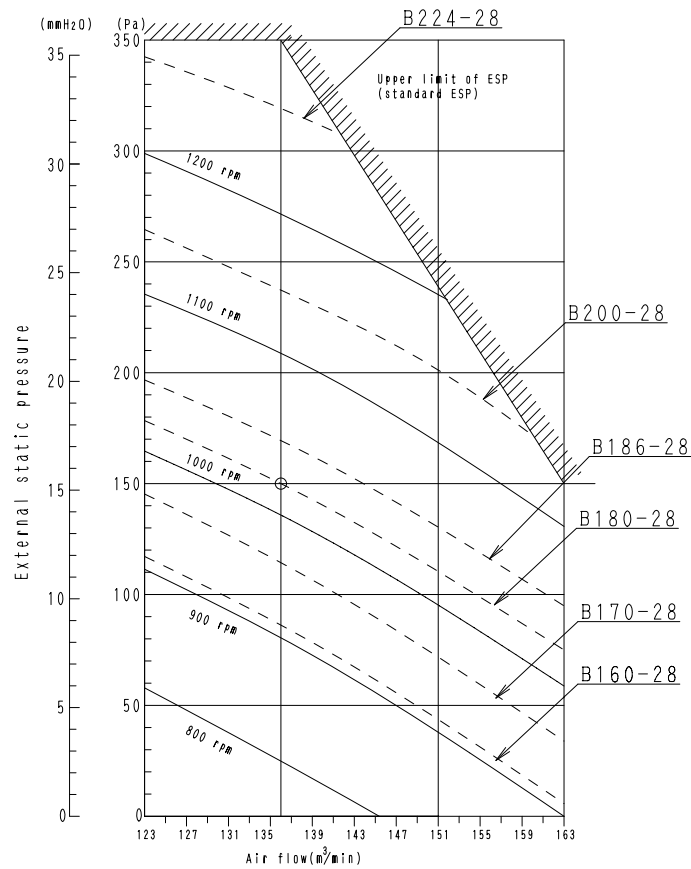
FDR10NY1



4D064280

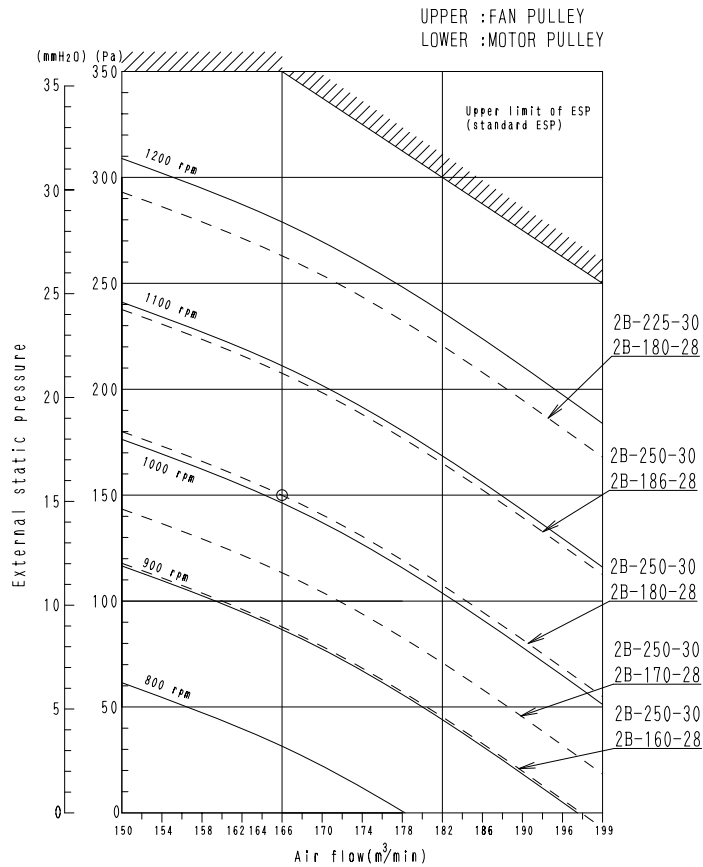
FDR13NY1 / FDR15NY1

1



4D064281A

FDR18NY1 / FDR20NY1



4D064282A

FDR05NY1 / FDR06NY1 / FDR08NY1 / FDR10NY1 / FDR13NY1 / FDR15NY1 / FDR18NY1 / FDR20NY1

FAN PERFORMANCE DATA

MODEL	AIR FLOW (m ³ /min)	FAN SPEED MOTOR OUTPUT	ESP (mmH ₂ O)								STANDARD POINT (FACTORY SETTING)
			0	5	10	15	20	25	30	35	
FDR05N	41	(RPM) (kW)	659 0.10	845 0.17	999 0.24	1131 0.32	1267 0.40				AIR FLOW=46 m ³ /min ESP=9 mmH ₂ O FAN SPEED=1030 RPM
	46	(RPM) (kW)	740 0.14	910 0.22	1050 0.30	1180 0.39	1290 0.48				
	55	(RPM) (kW)	900 0.25	1030 0.35	1150 0.45	1270 0.54	1390 0.65				
FDR06N	49	(RPM) (kW)	690 0.12	840 0.19	980 0.27	1110 0.36	1230 0.45				AIR FLOW=54 m ³ /min ESP=9 mmH ₂ O FAN SPEED=1020 RPM
	54	(RPM) (kW)	770 0.16	900 0.23	1030 0.32	1150 0.42	1260 0.51				
	64	(RPM) (kW)	900 0.26	1010 0.35	1130 0.45	1230 0.56	1340 0.67				
FDR08N	61	(RPM) (kW)	720 0.29	860 0.40	970 0.52	1070 0.63	1160 0.75	1260 0.86	1330 0.97	1420 1.07	AIR FLOW=68 m ³ /min ESP=10 mmH ₂ O FAN SPEED=1030 RPM
	68	(RPM) (kW)	800 0.41	920 0.53	1030 0.66	1120 0.79	1220 0.92	1300 1.05	1380 1.17	1450 1.29	
	82	(RPM) (kW)	969 0.67	1071 0.82	1163 0.97	1257 1.12	1326 1.29	1408 1.44			
FDR10N	70	(RPM) (kW)	740 0.36	850 0.48	950 0.61	1050 0.75	1140 0.90	1230 1.04	1310 1.18	1390 1.32	AIR FLOW=78 m ³ /min ESP=10 mmH ₂ O FAN SPEED=1010 RPM
	78	(RPM) (kW)	810 0.50	920 0.64	1010 0.78	1100 0.94	1190 1.09	1280 1.25	1350 1.41	1410 1.50	
	94	(RPM) (kW)	990 0.85	1060 1.01	1150 1.19	1220 1.36					
FDR13N FDR15N	123	(RPM) (kW)	665 0.69	783 0.90	879 1.03	975 1.29	1065 1.54	1114 1.80	1201 2.06	1293 2.32	AIR FLOW=136 m ³ /min ESP=15 mmH ₂ O FAN SPEED=1026 RPM
	136	(RPM) (kW)	756 1.16	846 1.37	935 1.54	1026 1.80	1087 2.00	1160 2.19	1250 2.58	1302 2.83	
	163	(RPM) (kW)	898 1.75	983 1.90	1059 2.05	1125 2.20					
FDR18N FDR20N	150	(RPM) (kW)	692 1.03	779 1.23	874 1.42	952 1.67	1039 1.94	1114 2.30	1190 2.45	1255 2.70	AIR FLOW=166 m ³ /min ESP=15 mmH ₂ O FAN SPEED=1004 RPM
	166	(RPM) (kW)	793 1.68	856 1.94	940 2.20	1004 2.40	1082 2.79	1155 2.97	1218 3.20	1271 3.48	
	199	(RPM) (kW)	940 2.80	998 2.98	1061 3.16	1124 3.34	1176 3.52	1255 3.70			

ESP: EXTERNAL STATIC PRESSURE

3D063699C

MODEL	OPERATION RANGE			FAN MOTOR SPECIFICATIONS			PULLEY SPECIFICATIONS						
	AIR FLOW (m ³ /min)	RPM	MAX. ALLOWABLE RPM	TYPE	RPM	kW	MOTOR PULLEY			FAN PULLEY			BELT SIZE
							TYPE	SHAFT D.	PITCH D.	TYPE	SHAFT D.	PITCH D.	
FDR05NY1	41 - 55	659-1390	1390	3 PHASE 50 Hz	1410	0.75	A	19	100	A	20	140	A39
FDR06NY1	49 - 64	690-1340	1340				A	19	100				A39
FDR08NY1	61 - 82	720-1450	1450		1420	1.5	A	24	118	A	20	160	A45
FDR10NY1	70 - 94	740-1410	1410				A	24	118				A45
FDR13NY1 FDR15NY1	123 - 163	665-1302	1302		1430	2.2	B	28	180	2B	30	250	B45
FDR18NY1 FDR20NY1	150 - 199	692-1271	1271		1430	3.7	2B	28	170				B45

TYPE	SHAFT D.	PITCH D.
2B	28	132

Pitch Diameter (mm)
 Shaft Diameter (mm)
 A(B):A(B) type pulley
 No. of belts
 (Blank : Single belt)
 (2 : Double belts)

$$D1 = \frac{D2 \times N2}{N1}$$

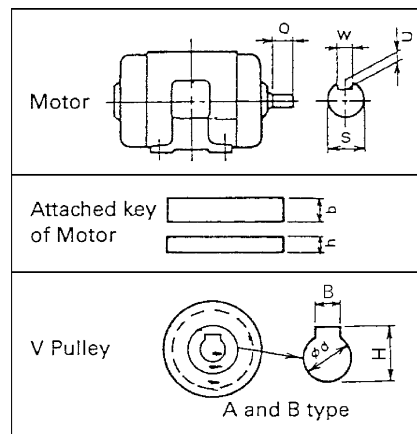
D1 : Pitch Diameter of Motor Pulley (mm)
 D2 : Pitch Diameter of Fan Pulley (mm)
 N1 : Revolution speed of Fan motor (rpm)
 N2 : Fan revolution speed (rpm)

3D063699C

11.3 Fan motor specifications

Power Supply		Y1			
Rated Motor Output		0.75	1.5	2.2	3.7
Shaft Outer Diameter:	ϕs (mm)	19	24	28	28
Shaft Length:	Q (mm)	40	50	60	60
Keyway Width:	W (mm)	6	8	8	8
Keyway Depth:	U (mm)	3.5	4	4	4
Insulation Class:		B	B	B	B
Key Width:	b (mm)	6	8	8	8
Key Height:	h (mm)	6	7	7	7
Shaft Hole Diameter:	ϕd (mm)	19	24	28	28
Keyway	B (mm)	6	8	8	8
Keyway Height:	H (mm)	21.5	27	31	31

Motor: Totally enclosed fan-cooled motor.



11.4 How to select motor pulley

1. Select the fan revolution speed by air flow rate and external static pressure.
2. Select Motor Pulley by Fan revolution speed.

$$D_1 = \frac{D_2 \times N_2}{N_1}$$

D_1 : Pitch Diameter of Motor Pulley (mm)
 D_2 : Pitch Diameter of Fan Pulley (mm)
 N_1 : Revolution Speed of Fan Motor (rpm)
 N_2 : Fan Revolution Speed

Relation between outer diameter and pitch diameter of each Pulley are as follows:

A type (Pitch Diameter) = Outer Diameter of Pulley - 9mm

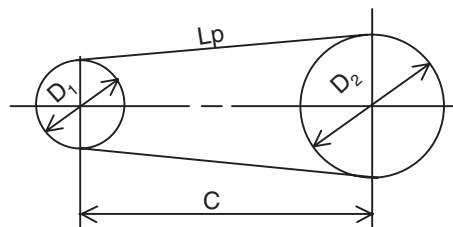
B type (Pitch Diameter) = Outer Diameter of Pulley - 11mm

How to Select V-belt

When changing the motor pulley, the standard V- belt may not be used.

In that case, select V-belt in accordance with the following formula:

V-belt Size (Length)



Model Name	Wheel Base (C)
	Y1
FDR05N	300
FDR06N	300
FDR08N	340
FDR10N	340
FDR15N	225
FDR20N	225

$$L_p = 2C + 1.57 (D_1 + D_2) + \frac{(D_1 - D_2)^2}{4C}$$

L_p : Effective Center Periphery Length (mm)
 D_1 : Pitch Diameter of Motor Pulley (mm)
 D_2 : Pitch Diameter of Fan Pulley (mm)
 C : Wheel Base (mm)

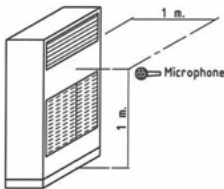
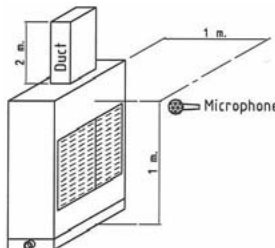
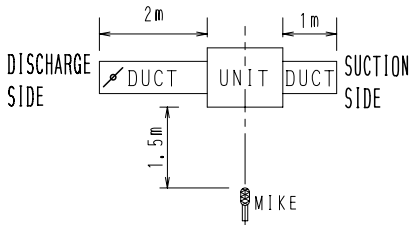
Note : The unit of V-belt length (Nominal number) is usually shown in "inch".

(P0022)

12. Sound level

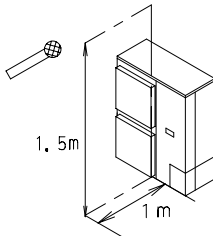
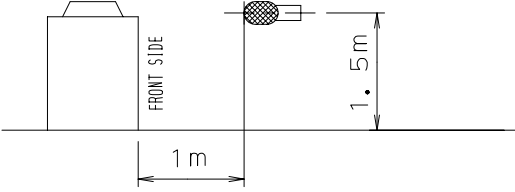
12.1 Overall sound level

12.1.1 Indoor unit

				dB(A)
Model	50Hz 380-415V			Measuring location
	H	M	L	
FVGR05NV1	59	54	50	 SDR4140041A
FVGR06NV1	59	54	50	
FVGR08NV1	60	56	51	
FVGR10NV1	61	57	52	
Model	50Hz 380-415V			Measuring location
FVPGR10NY1	61			 SDR4140044A
FVPGR13NY1	62			
FVPGR15NY1	62			
FVPGR18NY1	63			
FVPGR20NY1	63			
FDR05NY1	49			 4D062903A
FDR06NY1	51			
FDR08NY1	51			
FDR10NY1	53			
FDR13NY1	58			
FDR15NY1	58			
FDR18NY1	60			
FDR20NY1	60			

Note: Operation sound is measured in an anechoic chamber.
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipment installed.

12.1.2 Outdoor unit

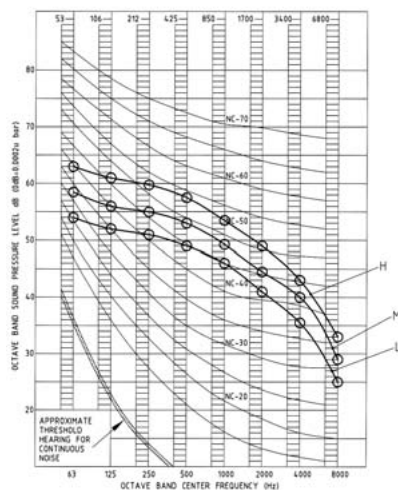
Model	50Hz		Measuring location
	380V	415V	
RUR05NY1	59	60	 4D063036A
RUR06NY1	59	60	
RUR08NY1	60	61	 4D063037A
RUR10NY1	61	62	
RUR13NY1	61	62	
RUR15NY1	62	63	
RUR18NY1	63	64	
RUR20NY1	63	64	

Note: Operation sound is measured in an anechoic chamber.
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipment installed.

12.2 Octave band level

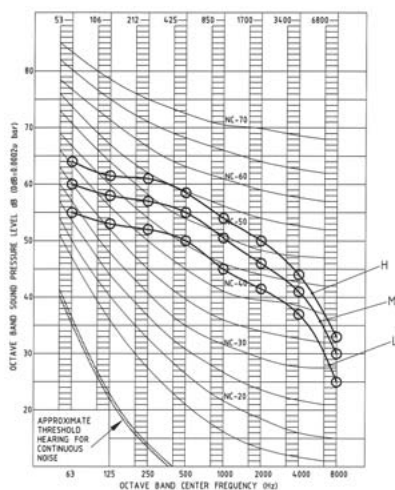
12.2.1 Indoor unit

FVGR05NV1 / FVGR06NV1



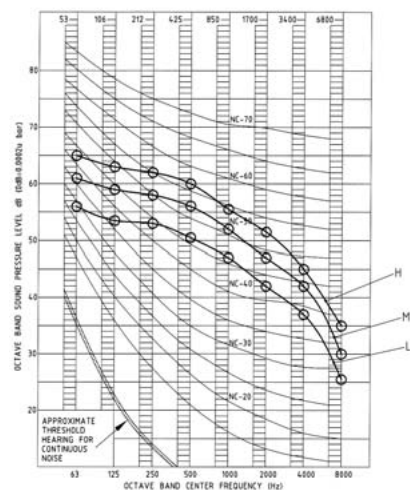
SDR140041A

FVGR08NV1



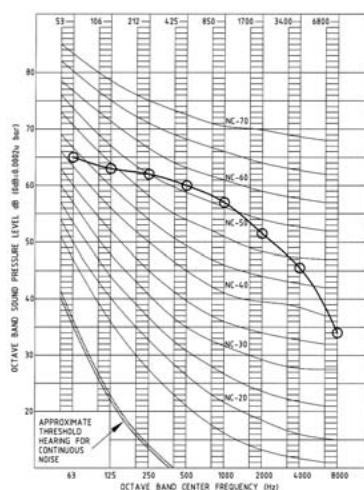
SDR140073

FVGR10NV1



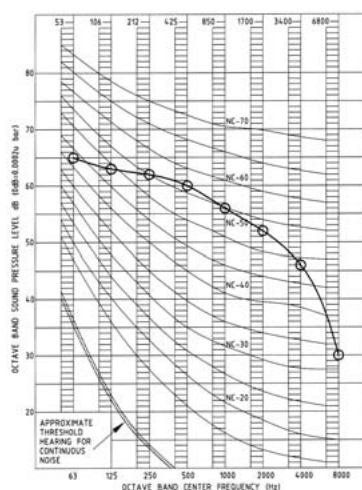
SDR140043A

FVPGR10NY1



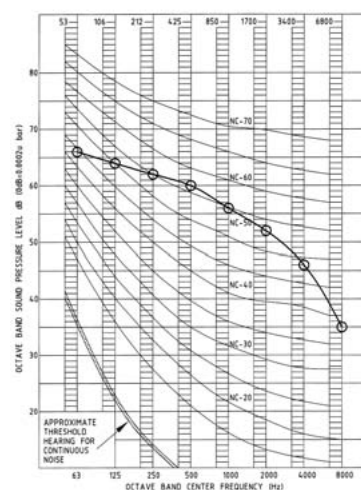
SDR140044A

FVPGR13NY1 / FVPGR15NY1



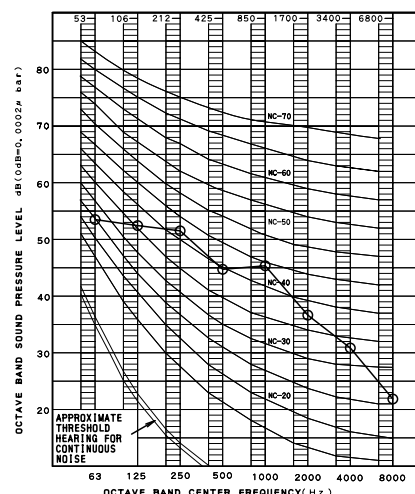
SDR140045A

FVPGR18NY1 / FVPGR20NY1



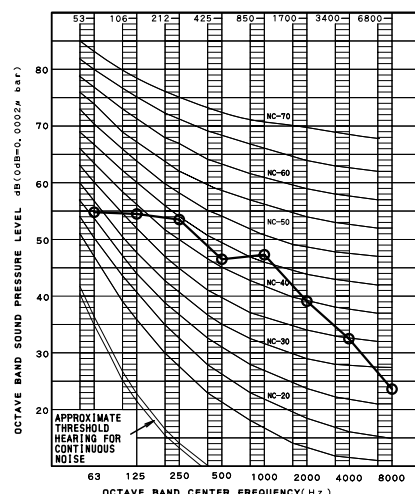
SDR140046B

FDR05NY1



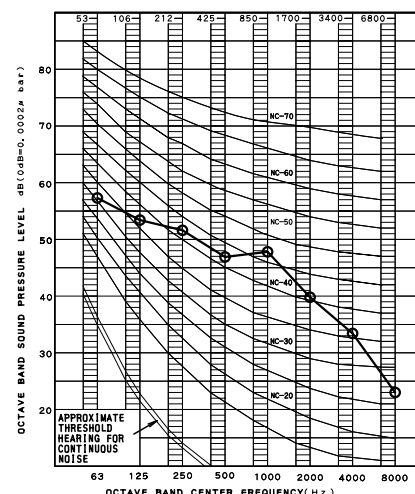
4D062903A

FDR06NY1



4D062904B

FDR08NY1

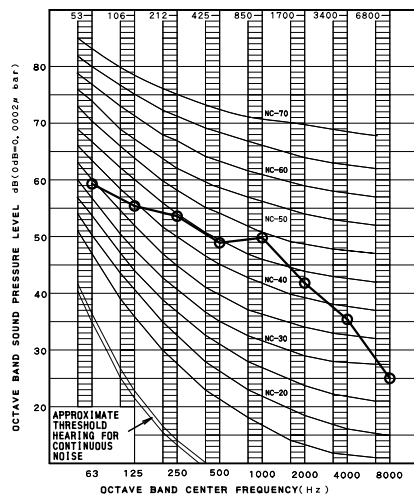


4D062905A

Note:

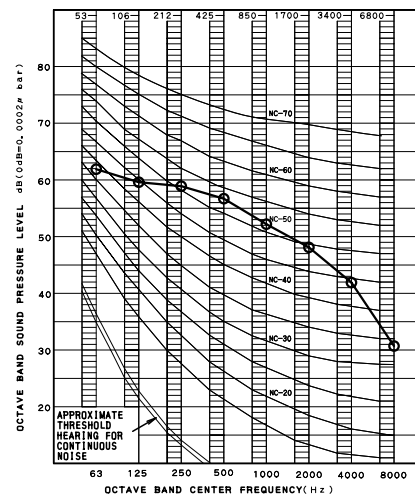
○ — ○ Power source (outdoor unit) : 50Hz 380-415V

FDR10NY1



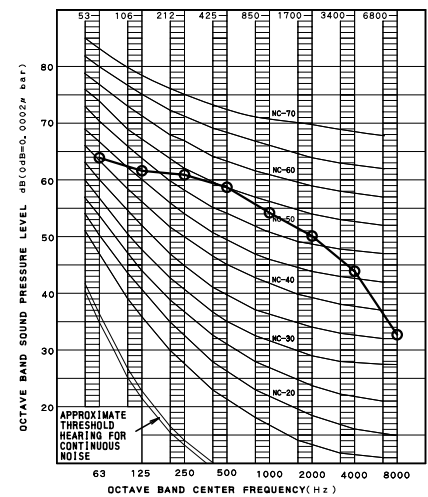
4D062906B

FDR13NY1 / FDR15NY1



4D062907A

FDR18NY1 / FDR20NY1



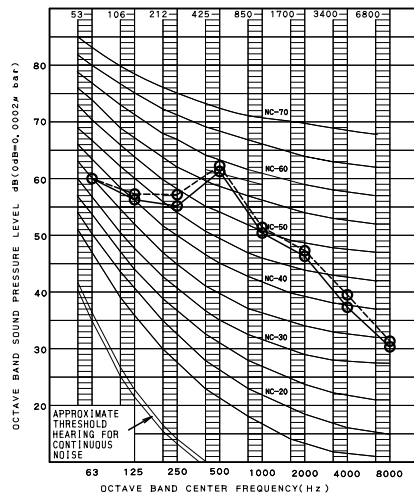
4D062908A

Note:

○ — ○ Power source (outdoor unit) : 50Hz 380-415V

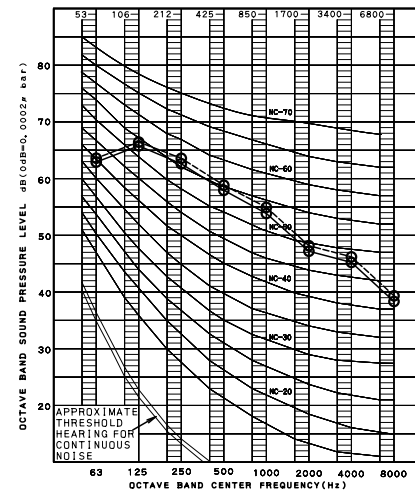
12.2.2 Outdoor unit

RUR05NY1 / RUR06NY1



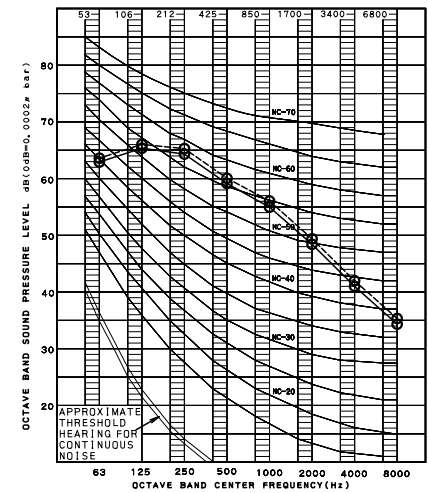
4D063036A

RUR08NY1



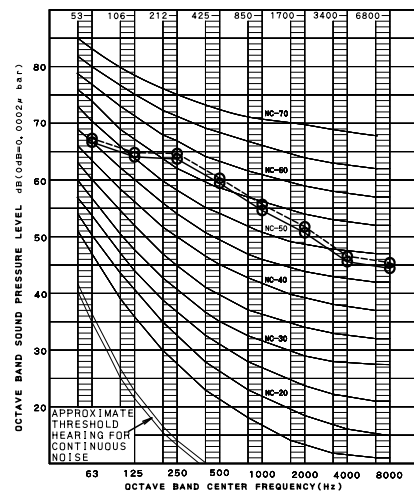
4D063037A

RUR10NY1



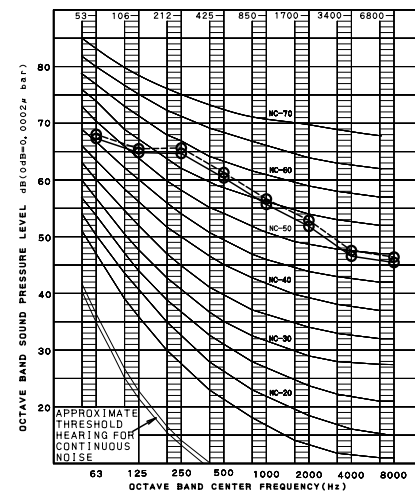
4D063038A

RUR13NY1



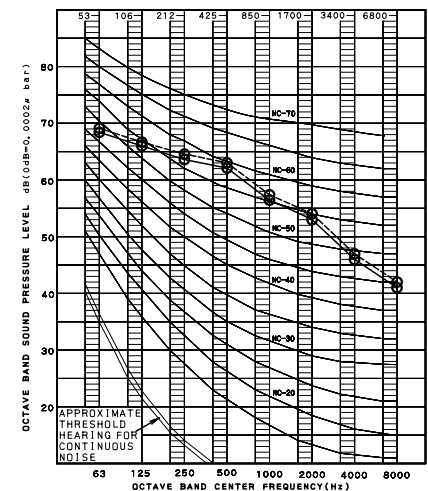
4D063039A

RUR15NY1



4D063040A

RUR18NY1 / RUR20NY1



4D063041A

Note:

○ — ○ Power source (outdoor unit) : 50Hz 380V

○ - - - ○ Power source (outdoor unit) : 50Hz 415V

Part 2

Installation of indoor / outdoor unit

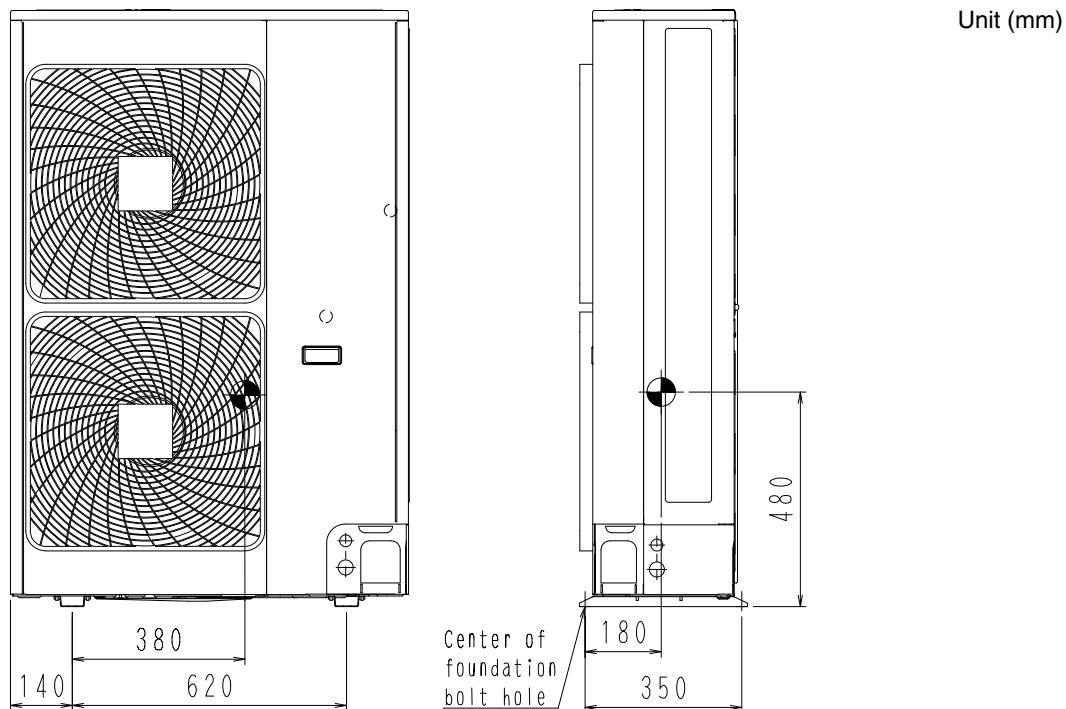
2

1. Centre of gravity.....	80
1.1 Centre of gravity	80
1.2 Foundation of units.....	82
2. Indoor unit	83
2.1 FVGR-N.....	83
2.2 FVPGR-N	89
2.3 FDR-N	95
3. Outdoor unit	108
3.1 RUR05NY1 / RUR06NY1	108
3.2 RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1	124

1. Centre of gravity

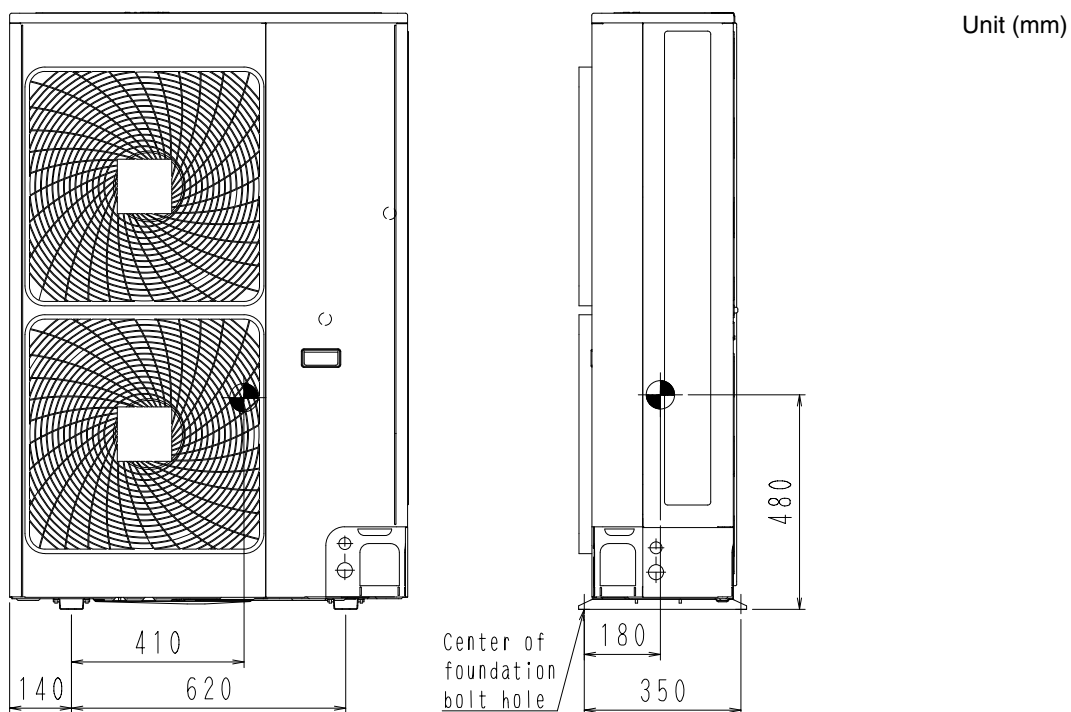
1.1 Centre of gravity

RUR05NY1



4D063391

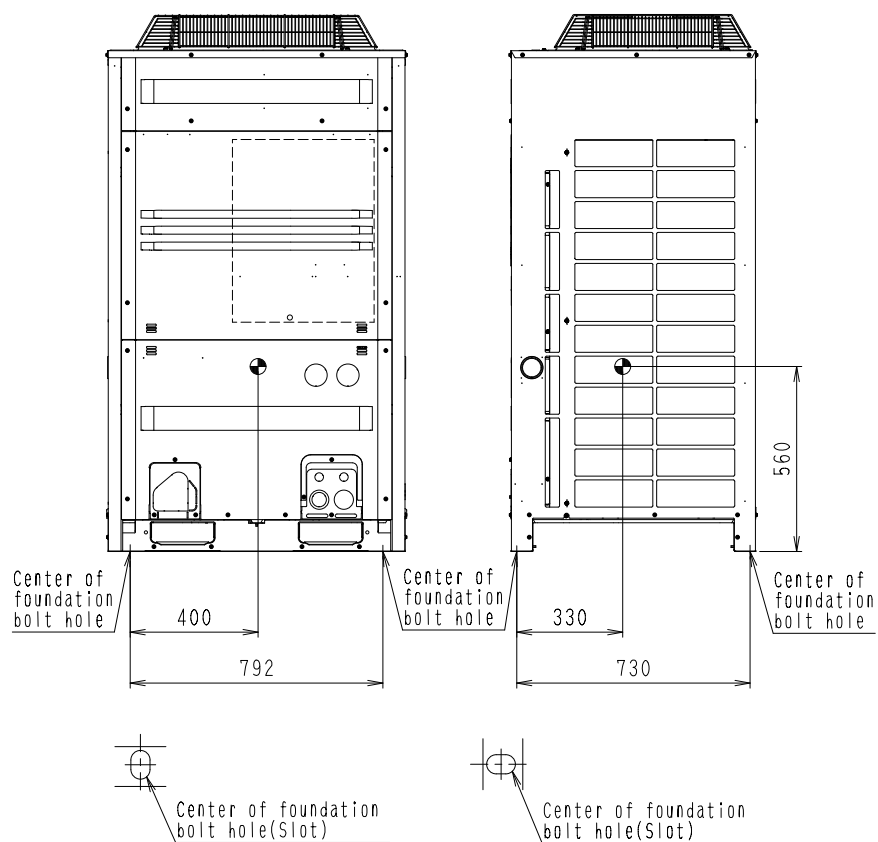
RUR06NY1



4D063392

RUR08NY1 / RUR10NY1

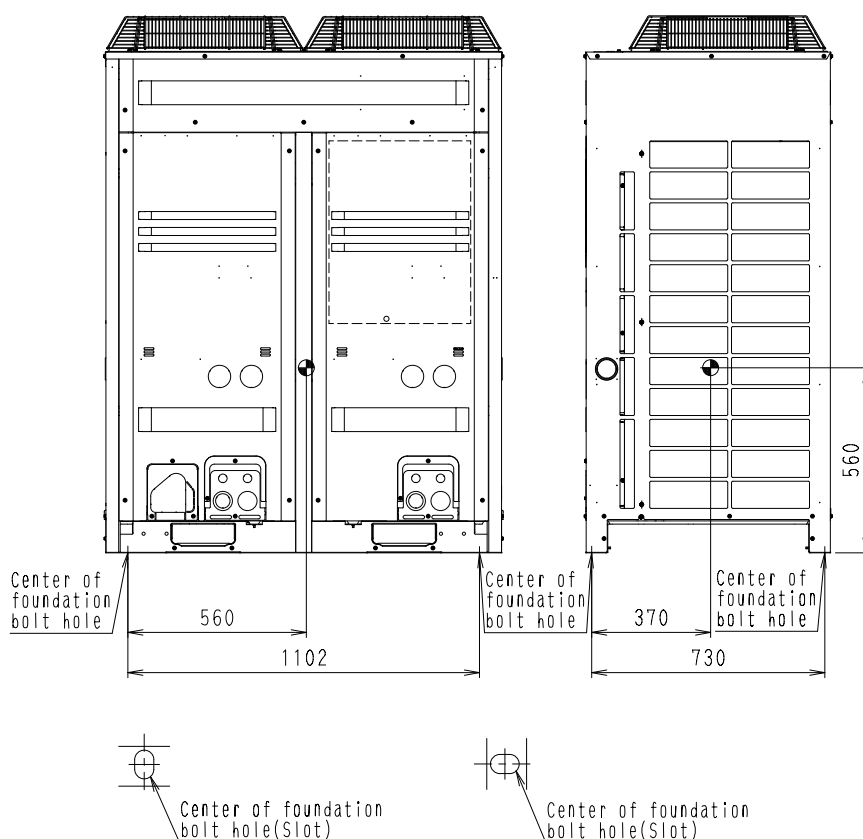
Unit (mm)



4D063393

RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1

Unit (mm)

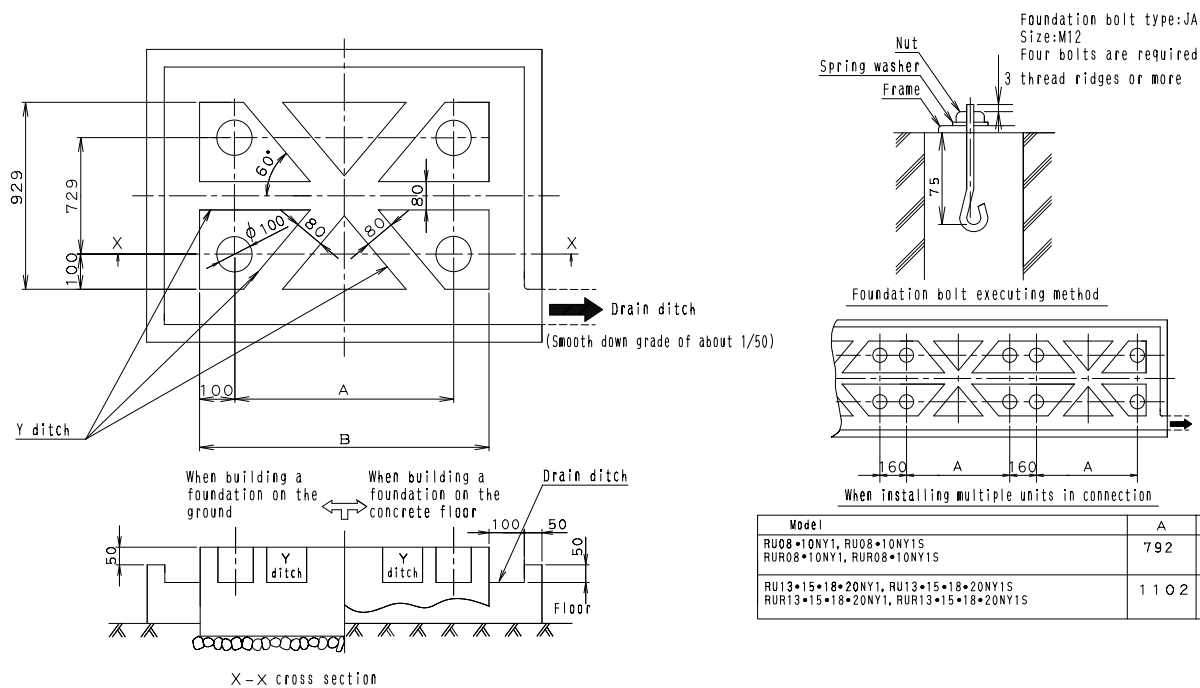


4D063394

1.2 Foundation of units

RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1

Unit (mm)



(Notes)

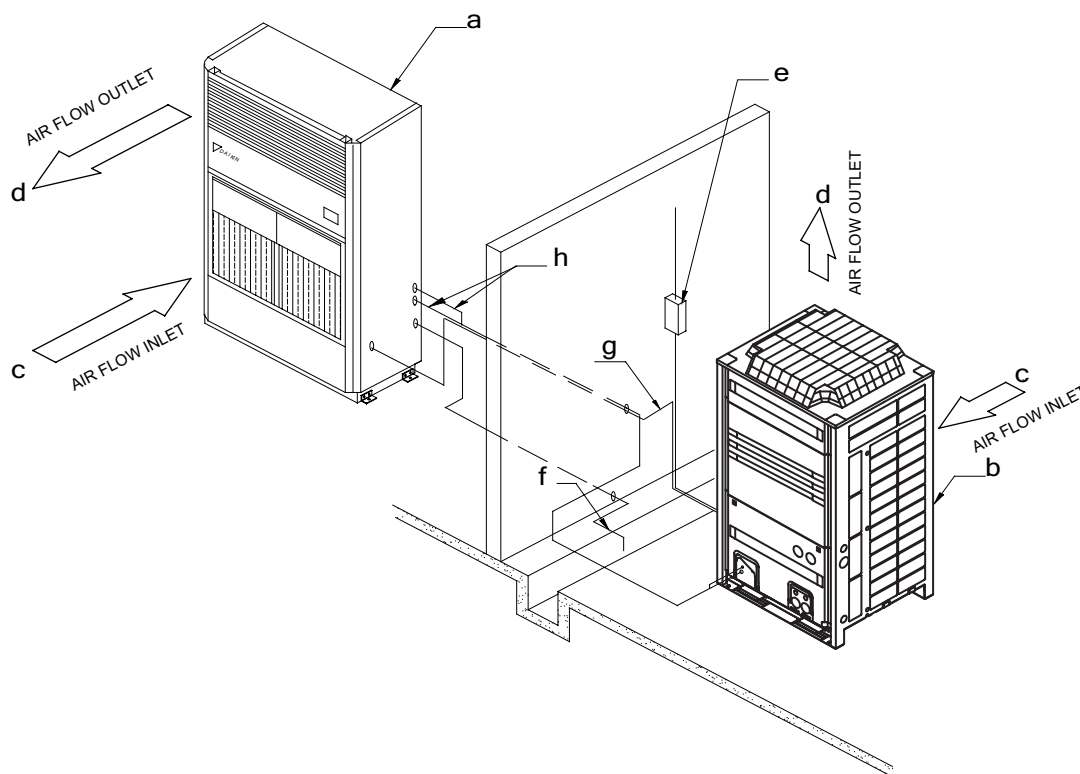
1. The proportions of cement:sand:gravel for the concrete shall be 1:2:4, and the reinforcement bars that their diameter are 10mm, (approx. 300mm intervals) shall be placed.
2. The surface shall be finished with mortar. The corner edges shall be chamfered.
3. When the foundation is built on a concrete floor, rubble is not necessary. However, the surface of the section on which the foundation is built shall have rough finish.
4. A drain ditch shall be made around the foundation to thoroughly drain water from the equipment installation area.
5. When installing the equipment on a roof, the floor strength shall be checked, and water-proofing measures shall be taken.

3D062892

2. Indoor unit

2.1 FVGR-N

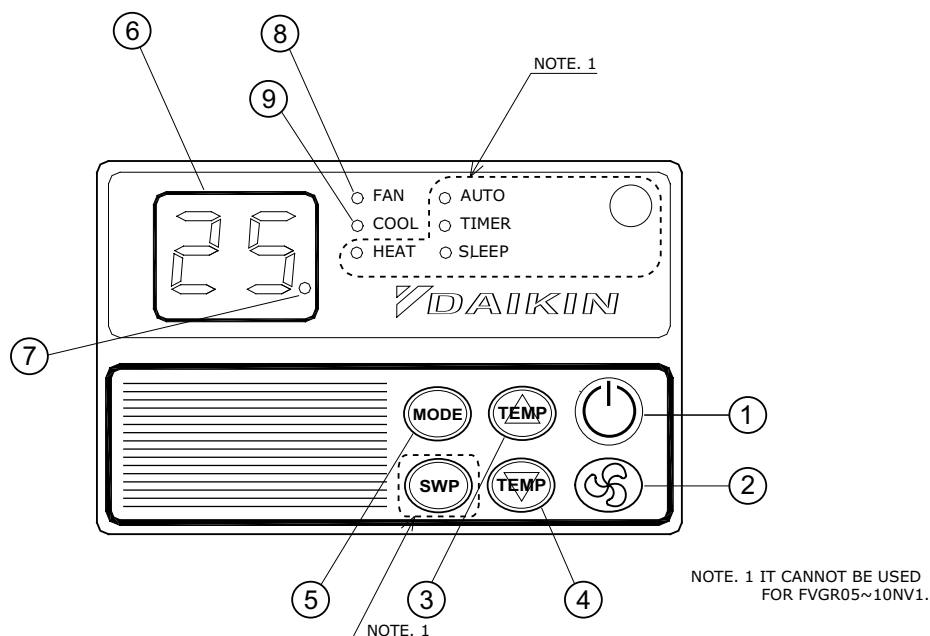
2.1.1 Names and functions for parts



a	INDOOR UNIT
b	OUTDOOR UNIT
c	AIR FLOW INLET
d	AIR FLOW OUTLET
e	POWER SUPPLY WITH GROUND
f	DRAIN PIPE
g	CONNECTION WIRE BETWEEN OUTDOOR UNIT AND INDOOR UNIT
h	REFRIGERANT PIPING

3PN10376-6C

2.1.2 Names and functions of each switch and display on the remote controller



- 1) **ON/OFF BUTTON** Press the button and system will start press the button again the system will stop.
- 2) **FAN BUTTON** Press this button to select the fan speed(high, medium, low).The display show the status in blinking for 5 seconds.

F3(HIGH) → F2(MED) → F1(LOW)
- 3) **TEMP. SETTING UP** Each time this button is pressed, setting temp rises 1°C.
- 4) **TEMP. SETTING DOWN** Each time this button is pressed, setting temp lowers 1°C.
- 5) **MODE BUTTON** This button can select 2 mode operation as fan and cool mode.
- 6) **DISPLAY** Nominal shows room temperature.
 - When request setting temp up or down it shows temp by flashing.
 - It shows flashing "rE" when room sensor wire damage or short circuit.
 - It shows flashing "OL" when safety device function (high pressure switch, low pressure switch, over load compressor, fan motor indoor and outdoor unit) operate.
 - It shows flashing "Fr" when freeze up protector operate.
 - It shows flashing "F3", "F2", "F1" when setting fan speed.
- 7) **COMPRESSOR OPERATION LAMP (Green Color)** This lamp shows compressor during operation.
- 8) **FAN OPERATION LAMP (Green Color)** This lamp shows fan operation.
- 9) **COOL OPERATION LAMP (Green Color)** This lamp shows cooling operation.

2.1.3 Operation procedure

COOLING AND FAN OPERATION

Operate in the following order.

- 1) **OPERATION MODE SELECTOR**
Press OPERATION MODE SELECTOR button several times and select the OPERATION MODE of your choice as follows.
 - FAN OPERATION "FAN"
 - COOLING OPERATION "COOL"
- 2) **ON/OFF BUTTON**
Press ON/OFF button, OPERATION lamp lights up and the system starts OPERATION. And press again the system will stop.

ADJUSTMENT

For programming TEMPERATURE, follow the procedure shown below.

- 1) **TEMPERATURE SETTING**
Press TEMPERATURE SETTING button and program the setting temperature.
 - Each time this button is pressed, setting temperature rises 1°C.
 - Each time this button is pressed, setting temperature lowers 1°C.
 - The setting can programmed for cool mode operation.
 - The setting temperature range of the remote controller.
COOLING OPERATION.....TEMP.....18 to 30°C

2.1.4 Installation

DAIKIN

MODEL FVGR 05•06•08•10NV1 AIR CONDITIONER INSTALLATION MANUAL

SAFETY CONSIDERATIONS

Please read these "Safety considerations" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference. This air conditioner comes under the term "appliances not accessible to the general public."

Meaning of Warning and Caution notices

- ⚠ WARNINGFailure to follow these instructions properly may result in personal injury or loss of life.
 ⚠ CAUTIONFailure to observe these instructions properly may result in property damage or personal injury which may be serious depending on the circumstances

⚠ WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened. Improper positioning of the control box lid may result in electric shocks or fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
- Do not allow children to climb on the outdoor unit and avoid placing objects on the unit.
Injury may result if the unit becomes loose and falls.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.



⚠ CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- 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.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapor (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 3. Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 4. Where flammable gas may leak, where there is carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled. Operating the unit in such conditions may result in fire.

Disposal requirements

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

Special notice of product**[REFRIGERANT]**

System use R410A refrigerant.

- The refrigerant R410A requires strict cautions for keeping the system clean, dry and tight. Read the chapter "REFRIGERANT PIPING WORK" carefully and follow these procedures correctly.
 - A. Clean and dry
Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting mixed into the system.
 - B. Tight
Take care to keep the system tight when installing. R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection against harmful ultraviolet radiation. R410A can contribute slightly to the greenhouse effect if it is released.
- Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition changes and the system will not work properly.

Note

- Be sure to connect an R410A outdoor unit. See the catalog for outdoor unit models which can be connected.

TAKE SPECIAL CARE DURING INSTALLATION AND CHECK THE FOLLOWING ITEMS AFTER INSTALLATIONS FINISHED

Item to be checked	Result of improper installation	Checked
Has the gas leak test been performed?	Insufficient cooling may result and efficiency is reduced.	
Is the unit properly insulated?	Condense may drip.	
Is the drain flow smooth?	Condense may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or components may burn out.	
Is the wiring and piping correct?	The unit may malfunction or components may burn out.	
Is the unit safely grounded?	Dangerous electric leakage may result.	
Are the wire sizes according to specifications?	The unit may malfunction or components may burn out.	
Are the air outlets and inlets of the indoor and outdoor units free of blockage?	Insufficient cooling may result and efficiency is reduced.	
Are refrigerant piping lengths and additional refrigerant charges written down?	The system's refrigerant charge is not known.	

1. BEFORE INSTALLATION

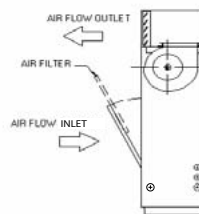
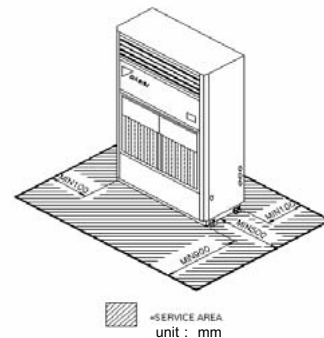
<Do not throw away any of the parts or contents packaged with this unit until installation is completed.>

- Plan a convenient path for transporting the unit prior to unpacking or installing it.
- Unpack the unit at the site of installation. In the event that the unit is unpacked away from the installation site, use a wrap, sheet or some other device when lifting or transporting it to avoid scratches or other damage.

2. SELECTING AN INSTALLATION SITE

The installation site should be chosen considering the specifications of FIG.1 and 2, along with the individual Preferences of the user.

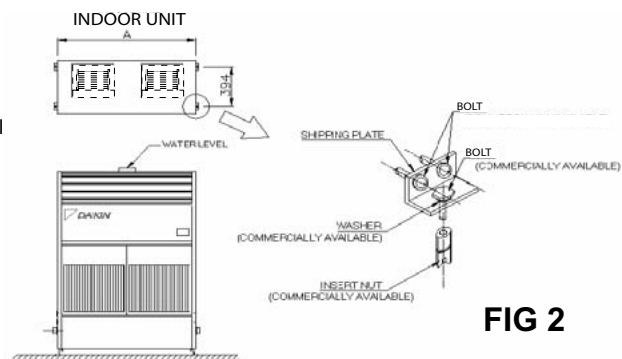
- Optimum air distribution is ensured.
- The air passage is not blocked.
- Condensate can drain properly.
- Sufficient clearance for maintenance and servicing is ensured.
- Piping between the indoor and outdoor units is within the allowable limits.
(Refer to the installation manual for the outdoor unit.)
- Install in a machine room that is free of moisture.
The unit is designed for indoor use.

**Required space for installation****3. PREPARATIONS BEFORE INSTALLATION****Prepare following items before installation**

- Preparation floor strong enough for weight of machine.
- Lay out point for put insert nut at the floor on TABLE 1.
- Checked machine level not incline by water level (FIG.2)
- Setting machine to the position as table and tightening with bolt of insert nut.

TABLE 1

MODEL	A (mm)
FVGR05,06	780
FVGR08	960
FVGR10	1180

**FIG 2**

4. REFRIGERANT PIPING WORK

⚠ WARNING

Do not mix gas other than the specified refrigerant into the refrigerant cycle.
Ventilate the area if any refrigerant leak during installation.

- Cut the end of the plug before heating the pipe to remove the plug FIG.3
- Piping should be brazed onto the indoor unit. Check the size of the refrigerant piping with TABLE 2, and FIG.4
- Use seamless copper piping only.
- After brazing the pipes use the insulation to secure the pipe inside of the unit (FIG.5).
Install the insulation as close to the body as possible to absorb leaking condensation.

TABLE 2

	REFRIGERANT PIPING SIZE	
	GAS PIPE(O.D.)	LIQUID PIPE(O.D.)
FVGR05,06NV1	19.1(3/4") x t0.8, L=10	9.5(3/8") x t0.7, L=7
FVGR08NV1	*22.2(7/8") x t0.8, L=10	12.7(1/2") x t0.8, L=8
FVGR10NV1	*28.6(1 1/8") x t0.8, L=12	12.7(1/2") x t0.8, L=8

Unit : mm

Note 1.*Temper grade of pipe is 1/2H type (material type specify in JIS H3300)

2.See FIG.4 in reference to L

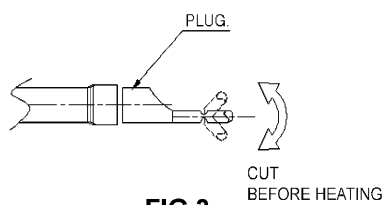


FIG 3

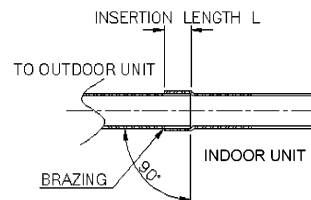


FIG 4

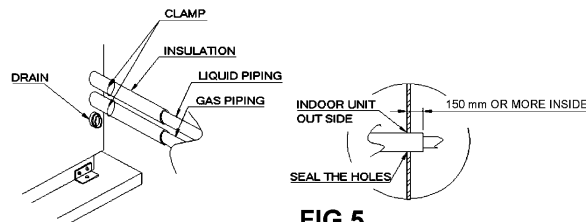


FIG 5

5. DRAIN PIPING WORK

⚠ WARNING

The drain pipe must be installed to avoid water damage caused by leaks and condensation.

- Assemble the unit as shown in FIG.6.
- The drain pipe outlet can be installed on either the left or right side. The drain plug can be removed and placed on either the left or right side as well.
It is necessary to connect drain pipe both upper and lower point (FIG.6)
- For best results, try to keep the piping as short as possible. Slant the piping at an angle to improve airflow (the drain pipe provided with the indoor unit is PT 1 internal thread).
- Securely insulate the drain pipe.
- It is necessary to provide a drain trap in the drain outlet to relieve negative pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- After closing the drain pipe on the opposite side of the unit, completely wrap the drain pipes with insulation (FIG.6).
- Pour water in the drain pan to test for smooth drainage.

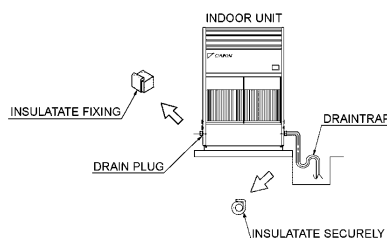


FIG 6

6. ELECTRIC WIRING

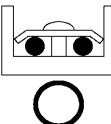
- All commercially available supplies, materials and electrical parts must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to the "WIRING DIAGRAM" FIG.7
- For remote controller wiring, refer to the remote controller's installation manual.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of controlling the power supply to the entire system must be installed. And be sure to switch on before operating the control.
- Refer to the installation manual attached to the outdoor unit for the size of the power supply electrical wire to be used to connect with the outdoor unit, the capacity of the circuit breaker/switch, and wiring instructions.

<< ⚠ WARNING >>

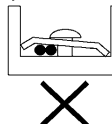
Observe the notes mentioned below while connecting wire to the power supply terminal board.

- Do not connect wires of different size to the same power supply terminal. (Looseness in the connection may cause overheating.)
- When connecting wires of the same gauge, connect them according to the figure on the right.

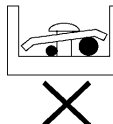
Connect wires of the same size on both sides.

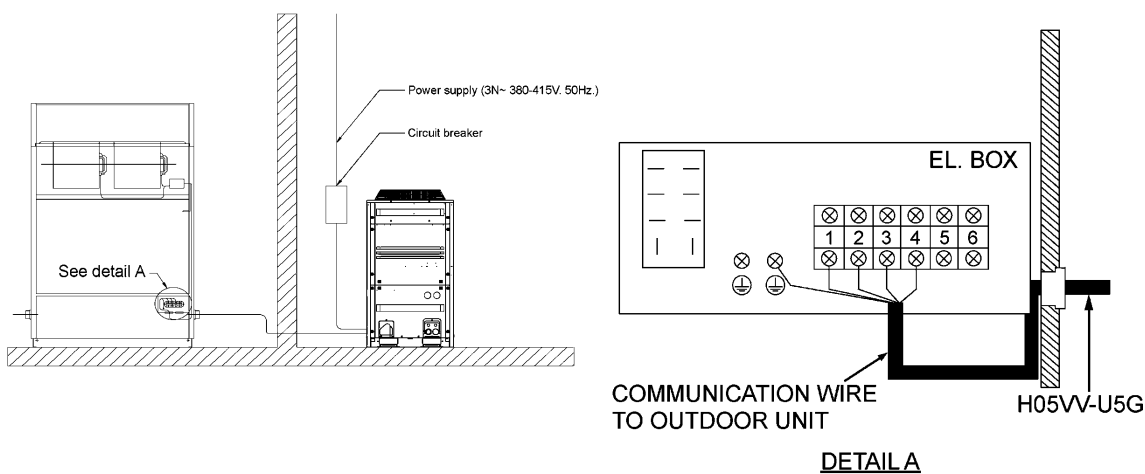


Do not connect wires of the same size to only one side.



Do not connect wires of different sizes.





Power supply (3N~ 380-415V, 50Hz.)

Circuit breaker

See detail A

EL. BOX

COMMUNICATION WIRE TO OUTDOOR UNIT

H05VV-U5G

DETAIL A

FIG 7 (WIRING DIAGRAM)

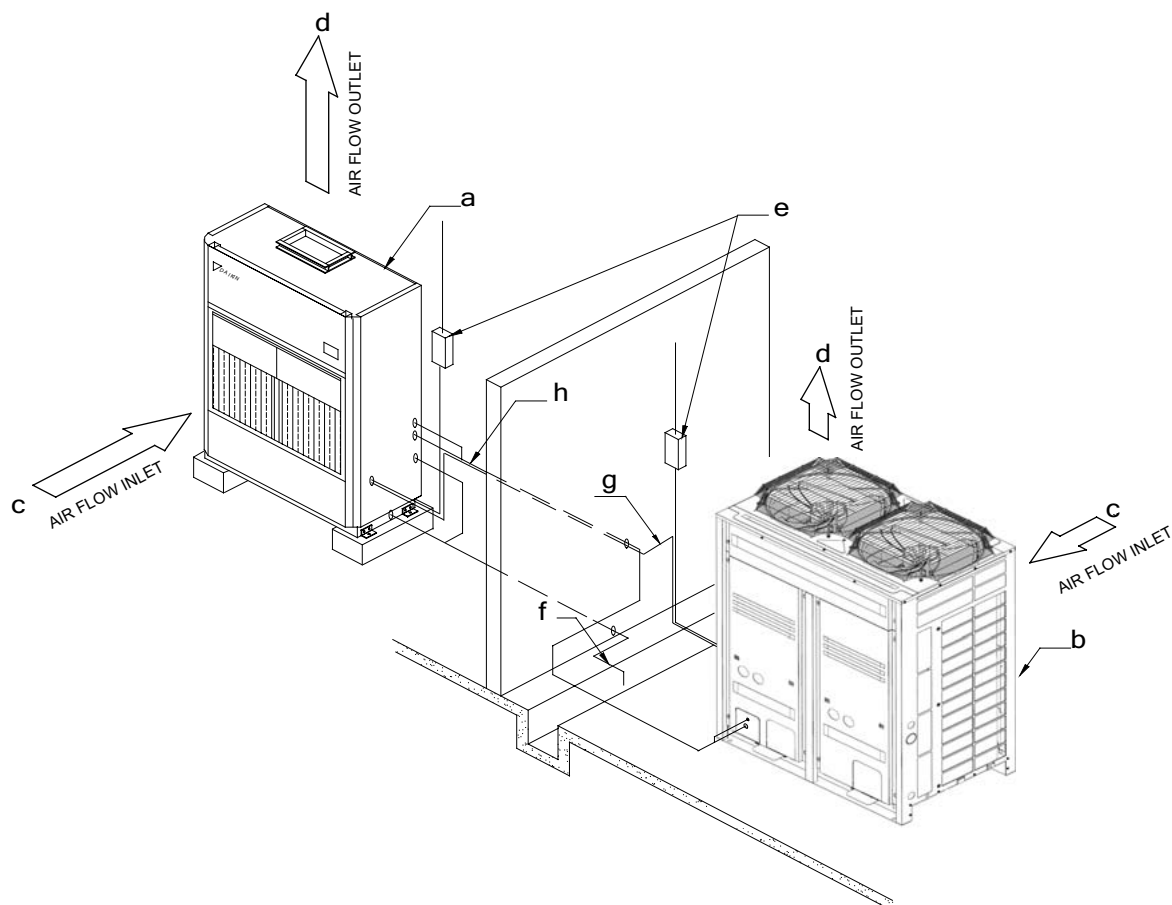
3PN10373-10A

88

Installation of indoor / outdoor unit

2.2 FVPGR-N

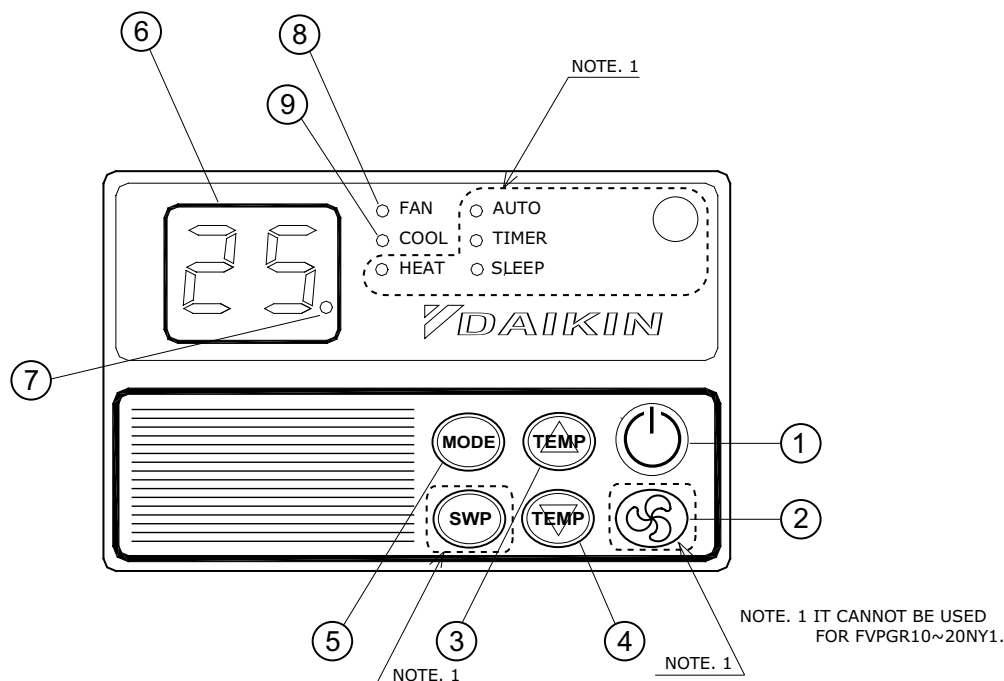
2.2.1 Names and functions for parts



a	INDOOR UNIT
b	OUTDOOR UNIT
c	AIR FLOW INLET
d	AIR FLOW OUTLET
e	POWER SUPPLY WITH GROUND
f	DRAIN PIPE
g	CONNECTION WIRE BETWEEN OUTDOOR UNIT AND INDOOR UNIT
h	REFRIGERANT PIPING

3PN10376-3A

2.2.2 Names and functions of each switch and display on the remote controller



- 1) **ON/OFF BUTTON** Press the button and system will start press the button again the system will stop.
- 2) **FAN BUTTON** This button cannot select speed of fan because in this unit has only one speed.
- 3) **TEMP. SETTING UP** Each time this button is pressed, setting temp rises 1°C.
- 4) **TEMP. SETTING DOWN** Each time this button is pressed, setting temp lowers 1°C.
- 5) **MODE BUTTON** This button can select 2 mode operation as fan and cool mode.
- 6) **DISPLAY** Normal shows room temperature.
 - When request setting temp up or down it shows temp by flashing.
 - It shows flashing "rE" when room sensor wire damage or short circuit.
 - It shows flashing "OL" when safety device function (high pressure switch, low pressure switch, over load compressor, fan motor indoor and outdoor unit) operate.
 - It shows flashing "Fr" when freeze up protector operate.
- 7) **COMPRESSOR OPERATION LAMP (Green Color)** This lamp shows compressor during operation.
- 8) **FAN OPERATION LAMP (Green Color)** This lamp shows fan operation.
- 9) **COOL OPERATION LAMP (Green Color)** This lamp shows cooling operation.

2.2.3 Operation procedure

COOLING AND FAN OPERATION

Operate in the following order.

- 1) **OPERATION MODE SELECTOR**
Press OPERATION MODE SELECTOR button several times and select the OPERATION MODE of your choice as follows.
 - FAN OPERATION "FAN"
 - COOLING OPERATION "COOL"
- 2) **ON/OFF BUTTON**
Press ON/OFF button, OPERATION lamp lights up and the system starts OPERATION. And press again the system will stop.

ADJUSTMENT

For programming TEMPERATURE, follow the procedure shown below.

- 1) **TEMPERATURE SETTING**
Press TEMPERATURE SETTING button and program the setting temperature.
 - Each time this button is pressed, setting temperature rises 1°C.
 - Each time this button is pressed, setting temperature lowers 1°C.
 - The setting can programmed for cool mode operation.
 - The setting temperature range of the remote controller.
COOLING OPERATION.....TEMP.....18 to 30°C

2.2.4 Installation

DAIKIN



MODEL FVPGR 10-13-15-18-20NY1 AIR CONDITIONER INSTALLATION MANUAL

SAFETY CONSIDERATIONS

Please read these "Safety considerations" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliances not accessible to the general public."

Meaning of Warning and Caution notices

-  **WARNING** Failure to follow these instructions properly may result in personal injury or loss of life.
-  **CAUTION** Failure to observe these instructions properly may result in property damage or personal injury which may be serious depending on the circumstances

WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened. Improper positioning of the control box lid may result in electric shocks or fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
- Do not allow children to climb on the outdoor unit and avoid placing objects on the unit.
Injury may result if the unit becomes loose and falls.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.



CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- 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.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapor (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 3. Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 4. Where flammable gas may leak, where there is carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled. Operating the unit in such conditions may result in fire.

Disposal requirements

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

Special notice of product

[REFRIGERANT]

System use R410A refrigerant.

- The refrigerant R410A requires strict cautions for keeping the system clean, dry and tight.
Read the chapter "REFRIGERANT PIPING WORK" carefully and follow these procedures correctly.

A. Clean and dry

Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting mixed into the system.

B. Tight

Take care to keep the system tight when installing.

R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection against harmful ultraviolet radiation.

R410A can contribute slightly to the greenhouse effect if it is released.

- Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition changes and the system will not work properly.

Note

- Be sure to connect an R410A outdoor unit.
See the catalog for outdoor unit models which can be connected.

TAKE SPECIAL CARE DURING INSTALLATION AND CHECK THE FOLLOWING ITEMS AFTER INSTALLATIONS FINISHED

Item to be checked	Result of improper installation	Checked
Has the gas leak test been performed?	Insufficient cooling may result and efficiency is reduced.	
Is the unit properly insulated?	Condense may drip.	
Is the drain flow smooth?	Condense may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or components may burn out.	
Is the wiring and piping correct?	The unit may malfunction or components may burn out.	
Is the unit safely grounded?	Dangerous electric leakage may result.	
Are the wire sizes according to specifications?	The unit may malfunction or components may burn out.	
Are the air outlets and inlets of the indoor and outdoor units free of blockage?	Insufficient cooling may result and efficiency is reduced.	
Are refrigerant piping lengths and additional refrigerant charges written down?	The system's refrigerant charge is not known.	

1. BEFORE INSTALLATION

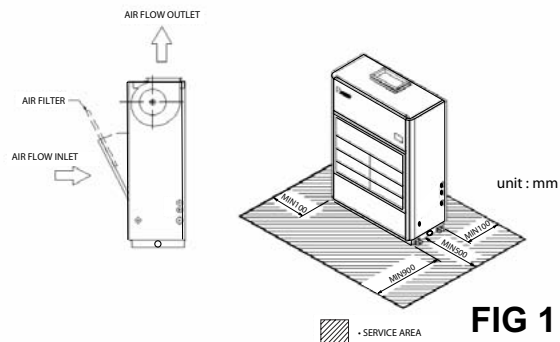
<Do not throw away any of the parts or contents packaged with this unit until installation is completed.>

- Plan a convenient path for transporting the unit prior to unpacking or installing it.
- Unpack the unit at the site of installation. In the event that the unit is unpacked away from the installation site, use a wrap, sheet or some other device when lifting or transporting it to avoid scratches or other damage.

2. SELECTING AN INSTALLATION SITE

The installation site should be chosen considering the specifications of FIG.1 and 2, along with the individual preferences of the user.

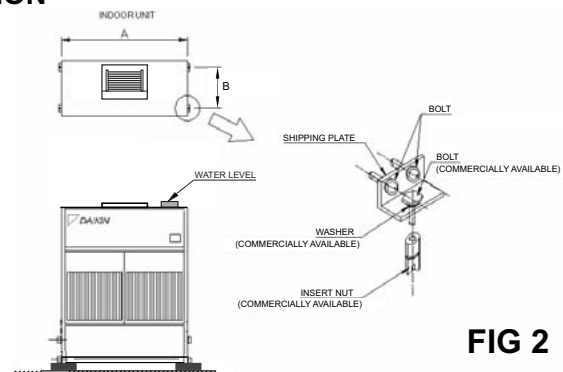
- Optimum air distribution is ensured.
- The air passage is not blocked.
- Condensate can drain properly.
- Sufficient clearance for maintenance and servicing is ensured.
- Piping between the indoor and outdoor units is within the allowable limits.
(Refer to the installation manual for the outdoor unit)
- Install in a machine room that is free of moisture.
The unit is designed for indoor use.

Required space for installation**FIG 1****3. PREPARATIONS BEFORE INSTALLATION****Prepare following items before installation**

- Preparation floor strong enough for weight of machine.
- Lay out point for put insert nut at the floor on TABLE 1.
- Checked machine level not incline by water level (FIG.2)
- Setting machine to the position as table and tightening with bolt of insert nut.

TABLE 1

MODEL	A (mm)	B (mm)
FVPGR10	1180	394
FVPGR13,15	1210	602
FVPGR18,20	1510	602

**FIG 2**

4. REFRIGERANT PIPING WORK

⚠ WARNING

Do not mix gas other than the specified refrigerant into the refrigerant cycle.

Ventilate the area if any refrigerant leak during installation.

- Cut the end of the plug before heating the pipe to remove the plug FIG.3
- Piping should be brazed onto the indoor unit. Check the size of the refrigerant piping with TABLE 2, and FIG.4
- Use seamless copper piping only.
- After brazing the pipes use the insulation to secure the pipe inside of the unit (FIG.5).
Install the insulation as close to the body as possible to absorb leaking condensation.

TABLE 2

	REFRIGERANT PIPING SIZE	
	GAS PIPE(O.D.)	LIQUID PIPE(O.D.)
FVPGR10,13NY1	*28.6(1 1/8") x t0.8, L=12	12.7(1/2") x t0.8, L= 8
FVPGR15,18,20NY1	*34.9(1 3/8") x t0.9, L=14	15.9(5/8") x t0.8, L= 8

Unit : mm

Note 1.*Temper grade of pipe is 1/2H type (material type specify in JIS H3300)

2.See FIG.4 in reference to L

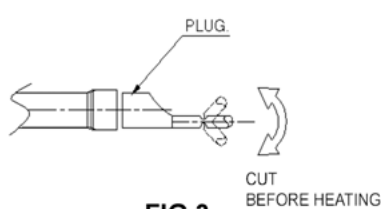


FIG 3

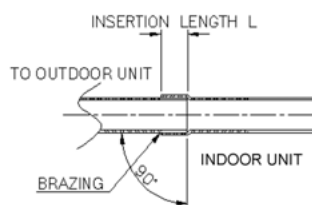


FIG 4

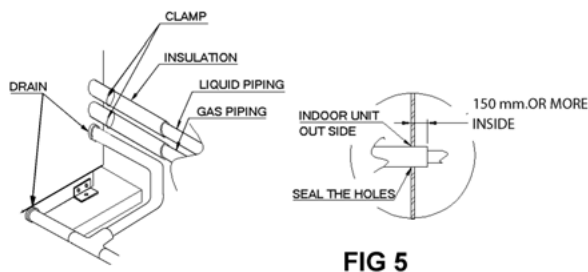


FIG 5

5. DRAIN PIPING WORK

⚠ WARNING

The drain pipe must be installed to avoid water damage caused by leaks and condensation.

- Assemble the unit as shown in FIG.6.
- The drain pipe outlet can be installed on either the left or right side. The drain plug can be removed and placed on either the left or right side as well.
- It is necessary to connect drain pipe both upper and lower point (FIG.6)
- For best results, try to keep the piping as short as possible. Slant the piping at an angle to improve airflow (the drain pipe provided with the indoor unit is PT 1 internal thread).
- Securely insulate the drain pipe.
- It is necessary to provide a drain trap in the drain outlet to relieve negative pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- After closing the drain pipe on the opposite side of the unit, completely wrap the drain pipes with insulation (FIG.6).
- Pour water in the drain pan to test for smooth drainage.

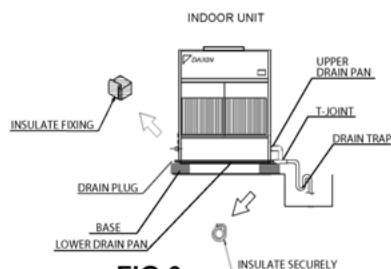


FIG 6

6. ELECTRIC WIRING

- All commercially available supplies, materials and electrical parts must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to the "WIRING DIAGRAM" FIG.7
- For remote controller wiring, refer to the remote controller's installation manual.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of controlling the power supply to the entire system must be installed. And be sure to switch on before operating the control.
- Refer to the installation manual attached to the outdoor unit for the size of the power supply electrical wire to be used to connect with the outdoor unit, the capacity of the circuit breaker/switch, and wiring instructions.

<< ⚠ WARNING >>

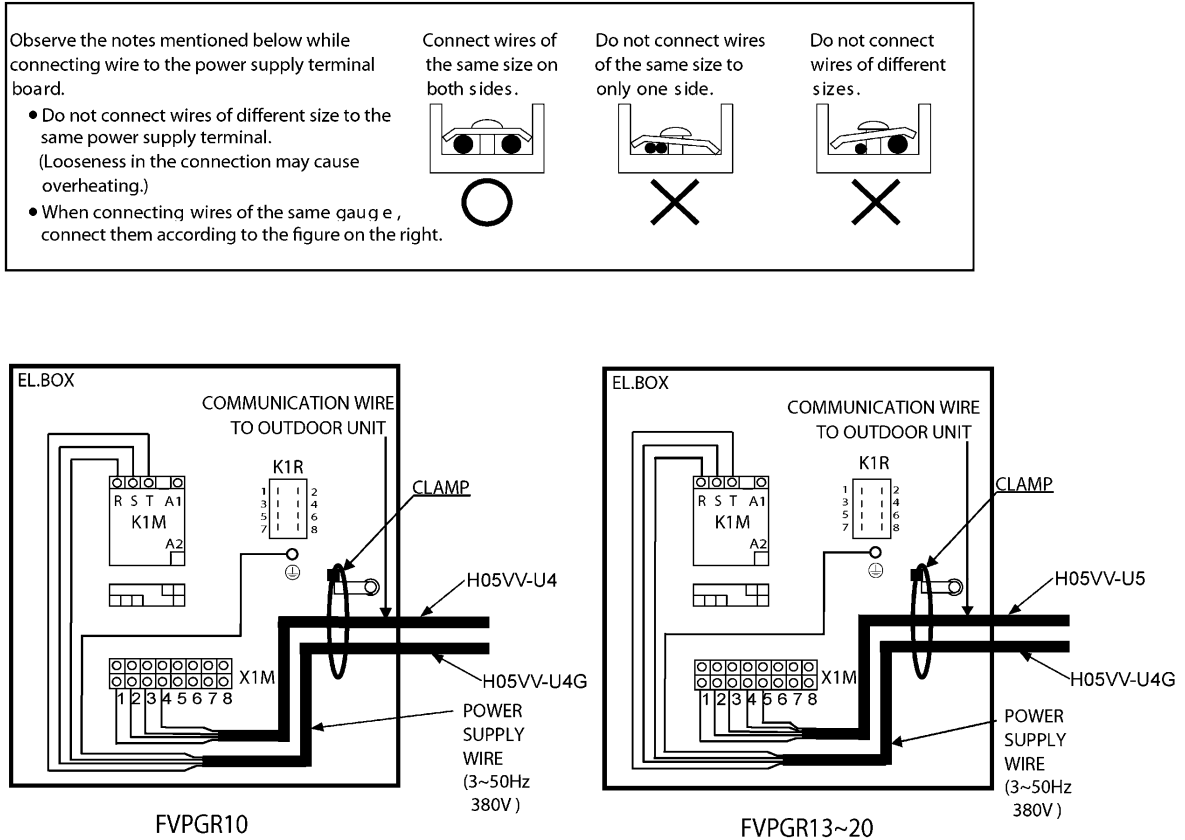


FIG 7 (WIRING DIAGRAM)

3PN10373-7A

2.3 FDR-N
2.3.1 Installation



FDR05NY1	FDR06NY1	SPLIT SYSTEM Air Conditioners	Installation manual
FDR08NY1	FDR10NY1		
FDR13NY1	FDR15NY1		
FDR18NY1	FDR20NY1		

CONTENTS

SAFETY CONSIDERATIONS..... 1

1. BEFORE INSTALLATION..... 3

2. SELECTING AN INSTALLATION SITE..... 4

3. PREPARATIONS BEFORE INSTALLATION..... 5

4. INDOOR UNIT INSTALLATION..... 5

5. REFRIGERANT PIPING WORK..... 6

6. DRAIN PIPING WORK..... 7

7. ELECTRIC WIRING..... 7

8. TEST OPERATION..... 9

9. MAINTENANCE (FOR SERVICE PERSONNEL)..... 9

10. NOT MALFUNCTION OF THE AIR CONDITIONER.....10


11. TROUBLE SHOOTING.....11


SAFETY CONSIDERATIONS

Please read these "SAFETY CONSIDERATIONS" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliance not accessible to the general public" .

Meaning of Warning and Caution notices.

 **WARNING** Failure to follow these instructions properly may result in personal injury or loss of life.

 **CAUTION** Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened.
Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.

⚠ WARNING

- Do not allow children to climb on the outdoor unit and avoid placing objects on the unit. Injury may result if the unit becomes loose and falls.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shocks.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.

**⚠ CAUTION**

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation. Improper drain piping may result in indoor water leakage and property damage.
- 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.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 3. Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 4. Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

Special notice of product**[REFRIGERANT]**

System use R410A refrigerant.

- The refrigerant R410A requires strict cautions for keeping the system clean, dry and tight. Read the chapter "REFRIGERANT PIPING WORK" carefully and follow these procedures correctly.
 - A. Clean and dry
Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting mixed into the system.
 - B. Tight
Take care to keep the system tight when installing.
R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection against harmful ultraviolet radiation.
R410A can contribute slightly to the greenhouse effect if it is released.
- Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition changes and the system will not work properly.

Note






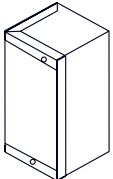
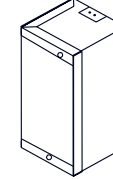
- Be sure to connect an R410A outdoor unit.
See the catalog for outdoor unit models which can be connected.

Disposal requirements

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

ACCESSORIES

Check if the following are included with your unit.

Name	Installation manual	Insulation for fitting	Clamp	Switch box <FDR05-10>	Switch box <FDR13-20>
Quantity	1 pc	1 each	2 pcs	1 pc	1 pc
Shape		 ① For gas pipe  ② For liquid pipe	 ③ 		

OPTIONS

The following optional remote controller is available for this indoor unit.

Remote controller	BRC1NU64
--------------------------	----------

NOTE) A commercially available remote controller can be used if its specifications are compatible with those shown in the wiring diagram and technical materials.

TAKE SPECIAL CARE DURING INSTALLATION AND CHECK THE FOLLOWING ITEMS AFTER INSTALLATION IS FINISHED.

Items to be checked	Result of improper installation	Checked
Is the indoor unit securely installed?	The unit may drop, vibrate or make noise.	
Has the gas leak test been performed?	Insufficient cooling may result.	
Is the unit properly insulated?	Condensate may drip.	
Is the drain flow smooth?	Condensate may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or components may burn out.	
Is the wiring and piping correct?	The unit may malfunction or components may burn out.	
Is the unit safely grounded?	Dangerous electric leakage may result.	
Are the wire sizes according to specifications?	The unit may malfunction or components may burn out.	
Are the air outlets and inlets of the indoor and outdoor units free of blockage?	Insufficient cooling may result.	
Are refrigerant piping lengths and additional refrigerant charges written down?	The system's refrigerant charge is not known.	

1 BEFORE INSTALLATION

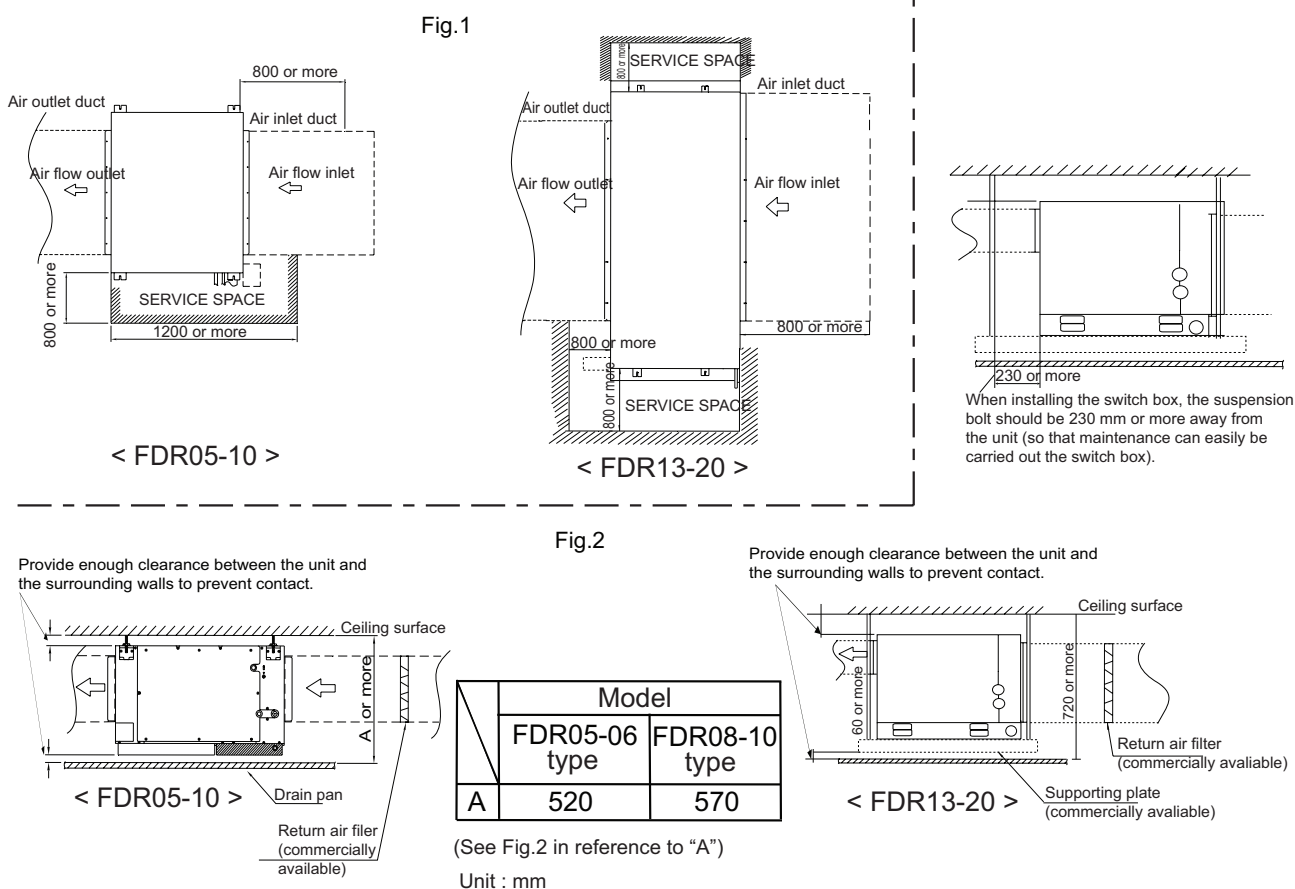
<Do not throw away any of the parts or contents packaged with this unit until installation is completed.>

- Plan a convenient path for transporting the unit prior to unpacking or installing it.
- Unpack the unit at the site of installation. In the event that the unit is unpacked away from the installation site, use a wrap sheet or some other device when lifting or transporting it to avoid scratches or other damage.

2 SELECTING AN INSTALLATION SITE

- (1) The installation site should be chosen considering the specifications of Fig.1 and 2, along with the individual preferences of the user.
 - Optimum air distribution is ensured.
 - Air outlet and inlet are not blocked.
 - Condensate can drain properly.
 - The ceiling is strong enough to bear the weight of the indoor unit
 - A ceiling with a sturdy level surface.
 - Sufficient clearance for maintenance and servicing is ensured
 - Piping between the indoor and outdoor units is within the allowable limits.
(Refer to the installation manual for the outdoor unit).
 - The indoor unit, outdoor unit, power supply wiring and transmission wiring is at least 1 meter away from televisions and radios .This prevent image interference and noise in electrical appliances.
(Noise may be generated depending on the conditions under which the electric wave is generated, even if a one-meter allowance is maintained)
 - Install in a machine room that is free of moisture. The unit is designed for indoor use.
- (2) Use suspension bolts to install the unit. Check whether or not the ceiling is strong enough to support the weight of the unit. If there is a risk that the ceiling is not strong enough, reinforce the ceiling before installing the unit
- (3) Filter (available commercially) must be installed within the duct (refer to Fig. 2)
Do not operate without a return air filter.

Required space for installation



3

PREPARATIONS BEFORE INSTALLATION

(1) Placement of the unit and suspension bolt in relation to the ceiling surface

	FDR05NY1	FDR06NY1	FDR08NY1	FDR10NY1
A	950	1180	1180	1380
B	900	1130	1130	1330
C	735	967	876	1076
D	756	756	732	732
E	920	920	928	926
F	266	266	294	294
G	450	450	500	500

Unit: mm

	FDR13NY1, FDR15NY1	FDR18NY1, FDR20NY1
A	1710	2070
B	1620	1980
C	1402	1762
D	1770	2220

Unit: mm

- (2) Install the suspension bolt (a W3/8 or M10 size is required for FDR05-10 and M12 size bolt is required for FDR13-20). Use anchors or other commercially available accessories to reinforce the ceiling against the weight of the unit.

4

INDOOR UNIT INSTALLATION

<For FDR05-10>

- Fit the hanger bracket into suspension bolt (refer to Fig. 5). Using washers. Secure and tighten bolt the upper and lower nuts to the suspension bolt
- Adjust the unit to the desired height.
- Make sure that the unit is level (refer to Fig. 6 on page 6)
 - Adjust the unit using a level. If it is installed unevenly, water may leak from the unit
 - When making adjustments, test all four corners of the unit with the level or use a vinyl tube filled with water.
- Secure and tighten the upper nuts

<For FDR13-20>

- Secure the unit and supporting plate (commercially available) at four places with M12 screws.
- Fit the supporting plate into the suspension bolt (refer to Fig. 5). Using washers, secure and tighten both the upper and lower nuts to the suspension bolt.
- Adjust the unit to the desired height.
- Make sure that the unit is level (refer to Fig. 6 on page 6)
 - Adjust the unit using level. If it is installed unevenly, water may leak from the unit.
 - When making adjustments, test all four corners of the unit with the level or use a vinyl tube filled with water.
- Secure and tighten the upper nuts.

5

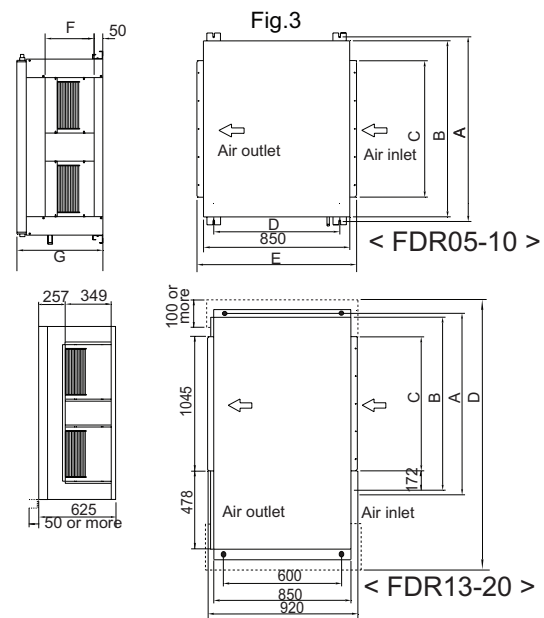
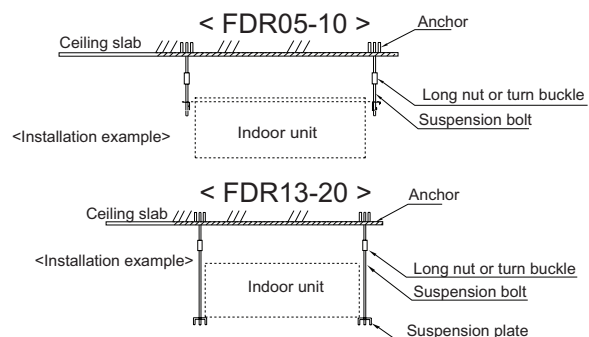
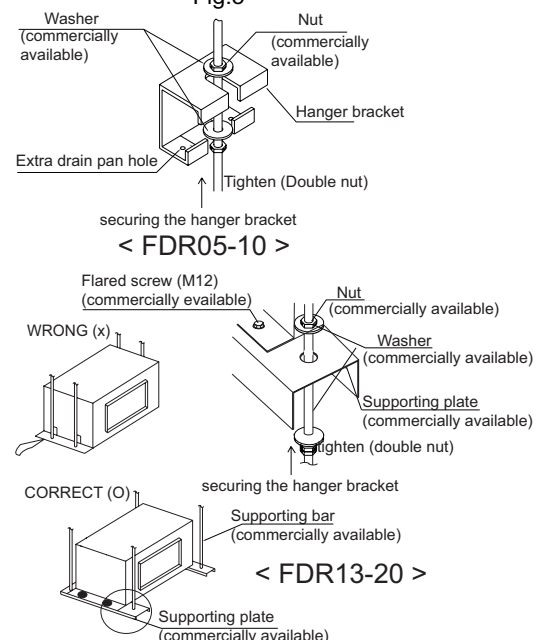


Fig.4



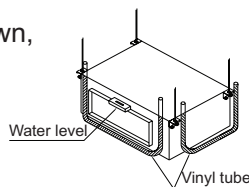
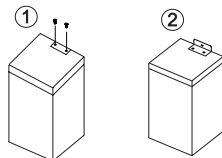
NOTE) all of the above parts are commercially available.

Fig.5



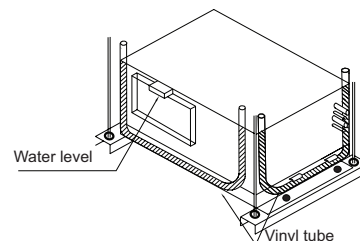
Switch box :

- ① Remove the screws and the bracket.
- ② Turn over the bracket so that it is upside-down, then re-install it.



< FDR05-10 >

Fig.6



< FDR13-20 >

⚠ WARNING

When attaching the switch box to the main unit, be sure to use the enclosed screws (M5x8)

5 REFRIGERANT PIPING WORK

(For outdoor units, see the outdoor unit installation manual)

⚠ WARNING

Do not mix gas other than the specified refrigerant into the refrigerant cycle.

Ventilate the area if any refrigerant leak during installation.

- Piping should be brazed onto the indoor unit. Check the size of the refrigerant piping with chart below.
- Use seamless copper piping only.

Model	Refrigerant piping size	
	Gas pipe	Liquid pipe
FDR05-06 type	∅19.1 x t0.8, L=10	∅ 9.5 x t0.7, L = 7
FDR08 type	∅22.2* x t0.8, L=10	∅ 12.7 x t0.8, L = 8
FDR10-13 type	∅28.6* x t0.8, L=10	∅ 12.7 x t0.8, L = 8
FDR15-20 type	∅ 34.9* x t0.9, L=14	∅ 15.9 x t0.8, L = 8

Unit: mm

Note 1. * Temper of pipe is 1/2H type (In the table indicate the material type specified in JIS H3300)

2. See Fig. 8 in reference to "L"

- Remove the card board and cut the end of the plug before heating the pipes to remove the plug (refer Fig.7).
- After brazing the pipes as show in Fig.8 use the fitting insulation to secure the pipe inside of the unit (see Fig.9, 10-1 and 10-2).
- Install the fitting insulation as close to the body as possible to absorb leaking condensation.
- Clamp the fitting insulation with the attached clamp ③ as shown in Fig. 9.
- Wrap the fitting insulation's joins with tape (commercially available), make sure that there is no gap between the fitting insulation (see Fig. 10-2).

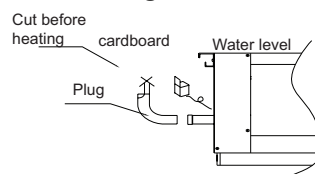


Fig.7

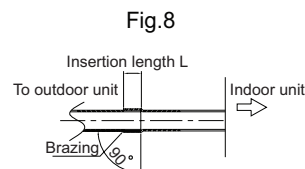


Fig.8

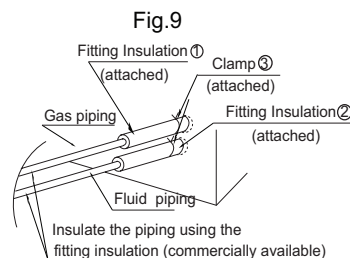


Fig.9

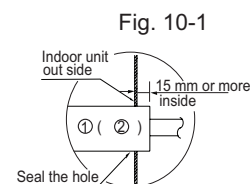


Fig. 10-1

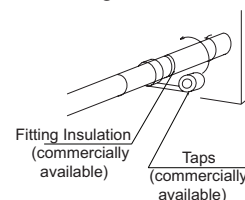


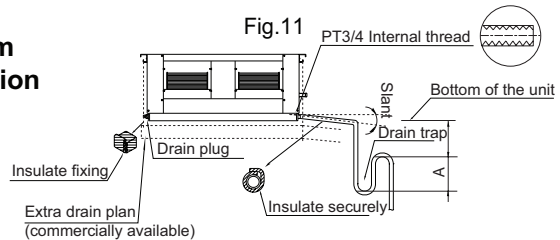
Fig. 10-2

6 DRAIN PIPING WORK

⚠ WARNING

The drain pipe must be installed as show in the diagram to avoid water damage caused by leaks and condensation

- Assemble the unit as shown in Figure. 11.
- The drain pipe outlet can be installed on either the left or right side. The drain plug can be removed and placed on either the left or right side as well.
- For best results, try to keep the piping as short as possible. Slant the piping at an angle to improve airflow (the drain pipe provided with the indoor unit is PT 3/4 internal thread). See Fig. 11.
- Securely insulate the drain pipe.
- It is necessary to provide a drain trap in the drain outlet to relieve negative pressure that exists within the unit compared to the outside atmospheric pressure when the unit is operating.
- Keep pipes as straight as possible for easy cleaning and to prevent the accumulation of dirt and debris.
- After closing the drain pipe on the opposite side of the unit, completely wrap the drain pipes with insulation (Fig.11)
- Pour water in the drain pan to test for smooth drainage
- In humid environments, use an extra drain plan to cover the entire area of the Indoor unit.



	FDR05-06 Type	FDR08-10 Type	FDR13-20 Type
A	50	85	100

7 ELECTRIC WIRING

- All commercially available supplies, materials and electrical parts must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to the "WIRING DIAGRAM" attach to the unit.
- For remote controller wiring, refer to the remote controller's installation manual.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of controlling the power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of the power supply electrical wire to be used to connect with the outdoor unit, the capacity of the circuit breaker/switch, and wiring instructions.

<Methods of unit wiring and connecting remote controller cords>

Open the switch box cover by removing the screws (see Fig.12 on page 8).

- For connection between the power supply and the motor, refer Fig.13 on page 8. Connect the wiring to the corresponding phase on the magnetic contactor.
- For connection between the indoor/outdoor remote controller, refer to Fig.13 on page 8. Use the corresponding numbers on the outdoor unit to connect the outdoor wires to the indoor terminal. Refer to the manual attached to the remote controller (optional) and the wiring diagram for the indoor unit.
- Push the wires through the wiring outlet located on the bottom of the switch box (see Figs.12 and 13 on page 8). After the wires are connected, keep them stored within the switch box to prevent damage.
- Use round crimp-style terminal for connection to the power supply terminal block. Where they can not be use, refer to the following.



<< ⚠ **WARNING** >>

Observe the notes mentioned below while connecting wire to the power supply terminal board.

- Do not connect wires of different gauges to the same power supply terminal. (Looseness in the connection may cause overheating.)
- When connecting wires of the same gauge, connect them according to the figure on the right.

Connect wires of the same size on both sides

Do not connect wires of the same gauge to only one side

Do not connect wires of different gauges.

Note) A commercially available remote controller can be used if its specifications are compatible with those shown in the wiring diagram and technical materials.

• REMOTE CONTROLER WIRING SPECIFICATIONS

	wire	size (mm ²)
Unit remote controller	UL1015 AWG18 or equivalent	0.75 each

⚠ CAUTION
Be sure to use 3 - minute delay timer when starting the compressor, otherwise the compressor may not start.

- Install the switch box in an easily accessible location (see Fig.14 on page 9). if there is no place nearby that might provide easy access to the switch box, install it onto the air inlet side of the indoor unit using the two holes on the side plate.

⚠ WARNING
Do not install the switch box on the air outlet side of coil (heat exchanger), or under any of the surrounding piping to avoid electric fire or shock caused by leaking condensation.

- Install the wiring of the switch box facedown.
- Clamp the earth and power supply wires together to provide support and relieve tension at the earth terminal (see Fig.15 on page 9).

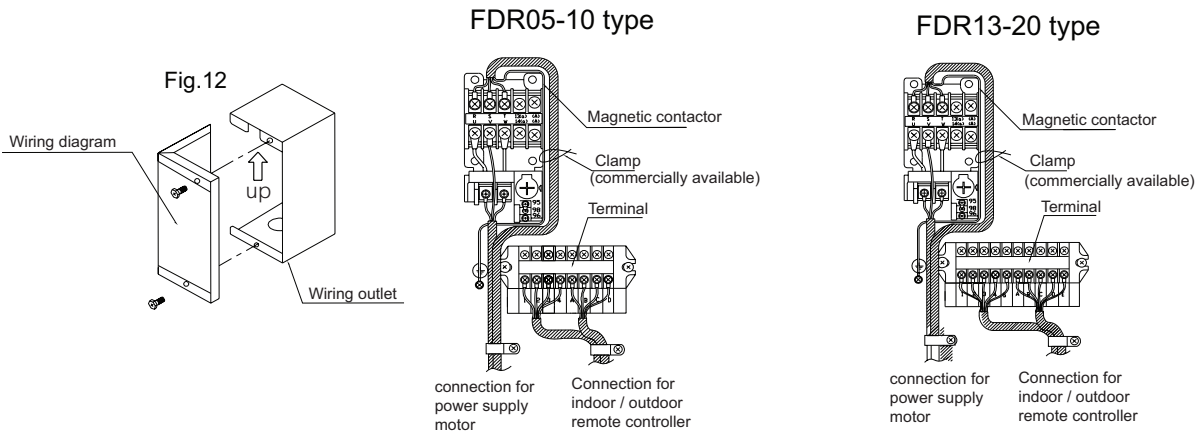


Fig.13

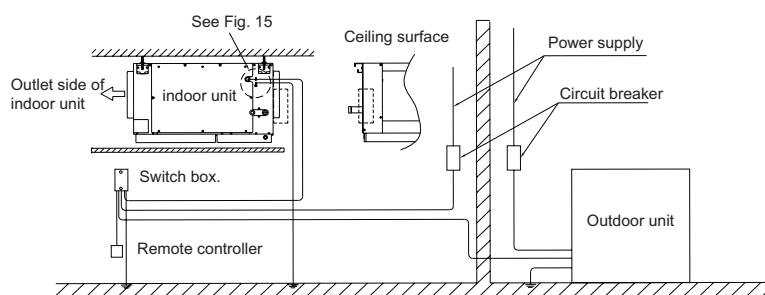


Fig.14

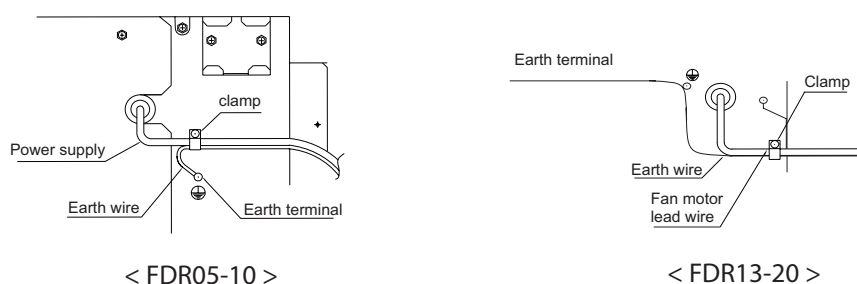


Fig.15

8 TEST OPERATION

- Check to make sure that all installation procedures have been completed according to the installation manual for the indoor unit, outdoor unit and the remote controller.
- Turn on the remote controller to check the rotational direction of the fan and for proper air flow. If the fan rotates in the wrong direction, change the power phase supply connection (3 phase models).
- After connection changes or any other adjustments are made, allow the unit to run in order to confirm that it is operating properly.
- Check tension of V-belt on indoor fan pulley after 24 hr. operation. (Refer to MAINTENANCE)

9 MAINTENANCE (FOR SERVICE PERSONNEL)

Only a qualified service person is allowed to perform maintenance

⚠ WARNING

- BEFORE OBTAINING ACCESS TO TERMINAL DEVICES, ALL POWER SUPPLY CIRCUITS MUST BE INTERRUPTED.
- To clean the air conditioner, be sure to stop operation, and turn the power switch off. Otherwise, an electric shock and injury may result.
- Do not wash the air conditioner with water doing so may result in an electric shock.
- Be careful with a scaffold or staging. Caution must be exercised because of work at a high place.

CLEANING THE AIR FILTER

- Be sure always to clean the unit before use at the beginning of summer (Dirt and dust caught in the air filter cause a drop in airflow, which leads to a decline in performance.).
- When using the unit in a location where dirt may easily accumulate, clean the unit more frequently. Once every 2 weeks is recommended.

NOTE

- The air filter and the suction grille are commercially available.
- Ask your dealer how to clean them.

START UP AFTER A LONG STOP

Confirm the following

- Check that the air inlet and outlet are not blocked. Remove any obstacle.
- Check if the earth is connected.

Clean the air filter

- After cleaning the air filter, make sure to attach it.

Turn on the main power supply switch

- The display on the remote controller will be shown when the power is turned on.

WHAT TO DO WHEN STOPPING THE SYSTEM FOR A LONG PERIOD

Turn on FAN OPERATION for a half day and dry the unit.

Cut off the power supply.

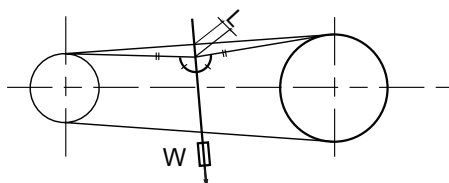
- When the main power switch is turned on, some watts of electricity is being used even if the system is not operating. Turn off the main power supply switch for saving energy.
- The display on the remote controller will vanish when the main power switch is turned off.

WARNING

It necessary to confirm tension per one fan V-belt after operate for 24~28 hours.

Fan V-belt confirmation method

1. Take off service cover.
2. Adjust nut of adjusting bolt to move motor pulley in order to adjust tension of V-belt.
 - The suitable tension per one fan V-belt (W) are shown in table.



	W (N)	V-BELT	L (mm)
FDR05 ~ 10	13.7~20.6	A type	5
FDR13 ~ 20	22.6~34.3	B type	4

10 NOT MALFUNCTION OF THE AIR CONDITIONER

The following symptoms do not indicate air conditioner malfunction

1) THE SYSTEM DOES NOT OPERATE

- **The system does not restart immediately after the ON/OFF button is pressed.**
If the OPERATION lamp lights, the system is in its normal operating condition.
It does not restart immediately because one of its safety devices actuates to prevent the system from being overloaded. The system will turn on again automatically after the passage of three minutes.
- **The system does not restart immediately when the TEMPERATURE SETTING button is returned to its former position after pushing.**
If the OPERATION lamp lights, the system is in its normal operating condition.
It does not restart immediately because one of its safety devices actuates to prevent the system from being overloaded. The system will turn on again automatically after the passage of three minutes.
- **The system does not start immediately after the power supply is turned on.**
Wait one minute until the microcomputer is prepared for operation.

2) WHITE MIST COMES OUT OF A UNIT

- **When humidity is high during cooling operation. (In oily or dusty places)**

If the inside of indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven.

It is necessary to clean the inside of the indoor unit. Ask your Daikin dealer for details on cleaning the unit. This operation requires a qualified service person.

3) NOISE OF AIR CONDITIONERS

- **A continuous flow "SHUH" sound is heard when the systems is in COOLING OPERATION.**

This is the sound of refrigerant gas flowing though both indoor and outdoor units.

- **A "SHUH" sound which is heard at the start or immediately after the stop of operation.**

This is the noise of refrigerant caused by flow stop and flow change.

4) DUST FROM THE UNITS

- **Dust may blow out from the unit after starting operation from long resting time.**

Dust absorbed by the unit blows out.

5) THE UNITS GIVE OFF ODORS

- The unit absorbs the smell of rooms, furniture, cigarettes, etc., and then emits them.

11 TROUBLE SHOOTING

1) If one of the following malfunctions occurs, take the measures shown below and contact your dealer.

The system must be repaired by qualified service person.

When the air conditioner is in abnormal conditions (something burning, etc), turn off the main breaker , and contact your dealer.

Continued operation under such circumstances may result in a failure, electric shock, and fire.

- If a safety device such as a fuse, a breaker, or an earth leakage breaker frequently actuates or ON/OFF switch does not properly work.

Measure: Turn off the main power switch

- If water leaks from unit.

Measure: Stop the operation.

2) If the system does not properly operate except for the above mentioned case, and none of the above mentioned malfunctions is evident, investigate the system according to the following procedures.

■ **If the system does not operate at all.**

- Check if there is a power failure. Wait until power is restored.
- Check if the fuse has blown or breaker has worked. Change the fuse or set the breaker.

■ **If the system stops operating after operating the system.**

- Check if the air inlet or outlet of outdoor or indoor unit is blocked by obstacles.
Remove the obstacle and make it well-ventilated.
- Check if the air filter is clogged. Contact qualified service person to clean the air filters.
(Refer to MAINTENANCE)

■ **The system operates but it does not sufficiently cool.**

- If the air inlet or outlet of the indoor or the outdoor unit is blocked with obstacles.
Remove the obstacle and make it well-ventilated.
- If the air filter is clogged.
Ask a qualified service person to clean the air filters. (Refer to MAINTENANCE)
- If the set temperature is not proper.

- If the door or the windows is open.
Shut doors or windows to prevent wind from outside coming in.
- If direct sunlight enters the room (when cooling).
Use curtains or blinds.
- When there are too many habitants in the room (when cooling). Cooling effect decreases if heat gain of the room is too large.
- If the heat source of the room is excessive (when cooling). Cooling effect decreases if heat gain of the room is too large.

3) In case of abnormal sound which may cause from low or high tension of fan V-belt after operate for long time, please contact your dealer to adjust fan V-belt.
(Refer to MAINTENANCE)

4) Moving and discarding the unit

- Contact your dealer for removing and reinstalling the system air conditioner since they require technical expertise.
- The system air conditioner uses fluorocarbon refrigerant.
Contact your dealer for discarding the system air conditioner since it is required by law to collect, transport and discard the refrigerant in accordance with relevant local and national regulations.
- Use recovery machine to recover refrigerant because outdoor unit does not have function of pump down.

3. Outdoor unit

3.1 RUR05NY1 / RUR06NY1

3.1.1 Installation

DAIKIN


Air Conditioner

<Cooling only> RUR05NY1(S), RUR06NY1(S)

Outdoor unit INSTALLATION MANUAL

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.
KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.


1PN10560-1B


SAFETY CONSIDERATIONS

Please read these "Safety considerations" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliances not accessible to the general public".

Meaning of Warning and Caution notices

 **Warning**.....Failure to follow these instructions properly may result in personal injury or loss of life.

 **Caution**.....Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened.
Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
- Do not allow children to climb on the outdoor unit and avoid placing objects on the unit.
Injury may result if the unit becomes loose and falls.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.



1PN10560B

CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.
(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- 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.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 3. Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 4. Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

Special notice of product

[REFRIGERANT]

System use R410A refrigerant.

- The refrigerant R410A requires strict cautions for keeping the system clean, dry and tight.
Read the chapter "REFRIGERANT PIPING" carefully and follow these procedures correctly.
 - A. Clean and dry
Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting mixed into the system.
 - B. Tight
Take care to keep the system tight when installing.
R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection against harmful ultraviolet radiation.
R410A can contribute slightly to the greenhouse effect if it is released.
- Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition changes and the system will not work properly.

Note

- Be sure to connect an R410A indoor unit.
See the catalog for indoor unit models which can be connected.

Disposal requirements

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

NOTE

- For details on installing the indoor unit, refer to the installation manual supplied with the indoor unit.
- The illustrations are for the RUR05 type models, but they apply to other models as well.
- Never remove the thermistor (RUR05) in the discharge pipe, otherwise the compressor could be burn out.

CONFIRMATION OF ACCESSORIES

- Check that the following accessories are present. If shortage occurred, please contact us.
 - Installation Manual..... 1pc. for NY1 and 2 pcs. for NY1S model.
 - Clamp material..... 2pcs.
- The indoor unit requires a remote controller (Optional accessory).

1PN10560B

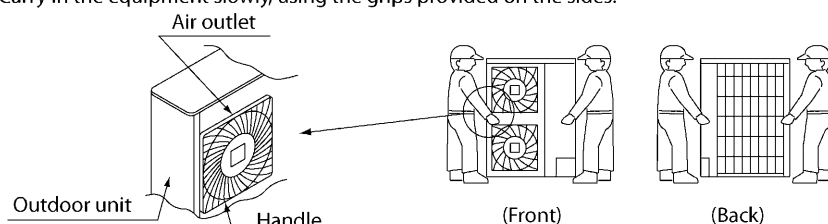
UNIT DIMENSION

Model Name	Unit Dimension H × W × D (mm)	Weight (kg)
RUR05NY1(S)	1345 × 900 × 320	92
RUR06NY1(S)	1345 × 900 × 320	105

1 CARRYING-IN

- Take care not let your hands and other objects touch the rear fins. Carry in the equipment slowly, using the grips provided on the sides.

WARNING



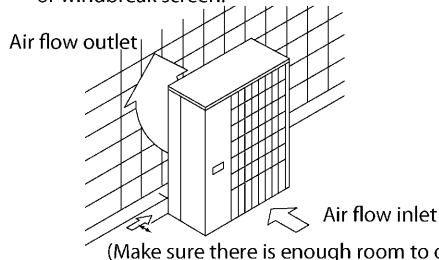
- Place your hands on the corner instead of holding the suction inlet in the side of the casing, otherwise the casing could be deformed.

2 SELECTION OF INSTALLATION SITE

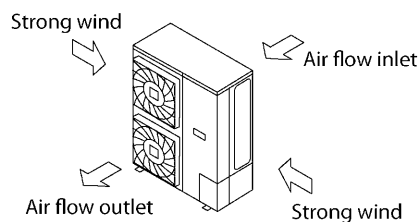
- Select a site where the following conditions can be satisfied and make sure the customer agrees to it.
 - where the space is well ventilated
 - where the unit does not cause a trouble to the neighbors
 - where the unit can be installed safely on a level base which withstand the weight and vibration
 - where the rain can be avoided as much as possible
 - where the sufficient space for installation is available
 - where the piping and wiring length between the indoor and outdoor unit is within the allowable distance
 - where there is no danger of flammable gas leak
- If the unit is to be installed where the strong wind may affect the unit, give consideration to the following cautions. When the wind stronger than 5m/s blows on the air outlet of the outdoor unit, the air flow rate may decrease or the exhaust air may recirculate (short circuit) and as a consequence the following results may occur.
 - The insufficient capacity
 - The rise of high pressure which cause to stop the operation
 - If wind blows continuously and directly into the outdoor unit air outlet with excessive force, there is the danger that the fan will rotate in reverse at high speed, damaging the unit. Be sure to refer to the diagram below when installing.

If the wind direction is predictable, install the equipment as shown below.

- Face the air outlet to the wall or windbreak screen.



- Orient the unit so that the air flow outlet is at right angles to the wind direction.



- If the local codes restrict the installation height from the ground level, follow the local codes at installation.

1PN10560B

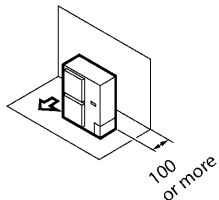
3 INSTALLATION SERVICE SPACE

1. Where there is an obstacle on the suction side:

(a) No obstacle above

(1) Stand-alone installation

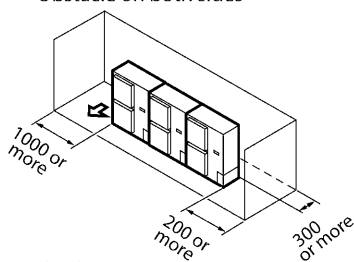
- Obstacle on the suction side only



(2) Series installation

(2 or more)

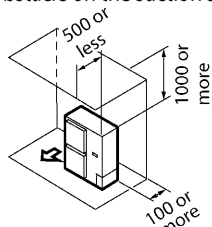
- Obstacle on both sides



(b) Obstacle above, too

(1) Stand-alone installation

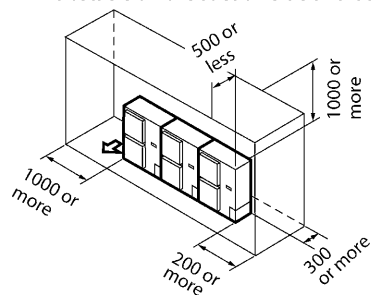
- Obstacle on the suction side, too



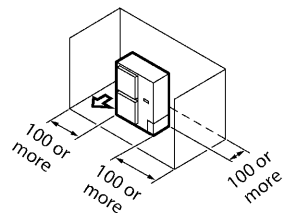
(2) Series installation

(2 or more)

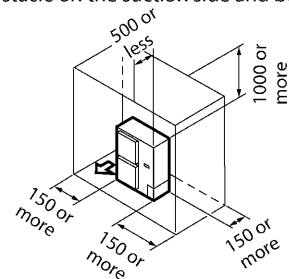
- Obstacle on the suction side and both sides



- Obstacle on both sides



- Obstacle on the suction side and both sides

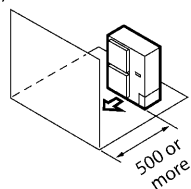


1PN10560B

2. Where there is an obstacle on the discharge side:

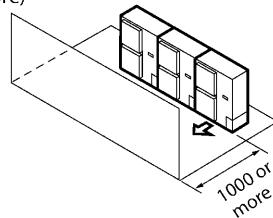
(a) No obstacle above

(1) Stand-alone installation



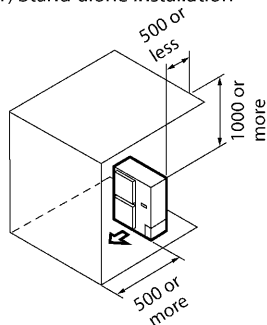
(2) Series installation

(2 or more)



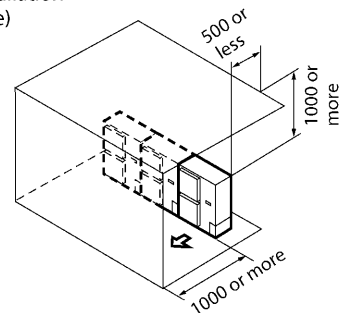
(b) Obstacle above, too

(1) Stand-alone installation



(2) Series installation

(2 or more)



3. Where there are obstacles on both suction and discharge sides:

Pattern 1

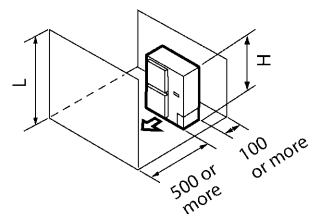
Where the obstacles on the discharge side is higher than the unit:

(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

(1) Stand-alone installation

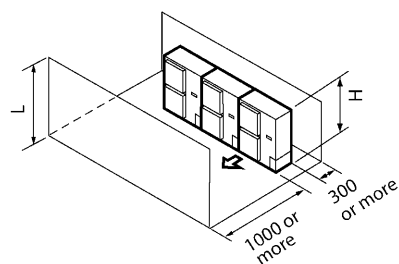
$$L > H$$



(2) Series installation

(2 or more)

$$L > H$$



1PN10560B

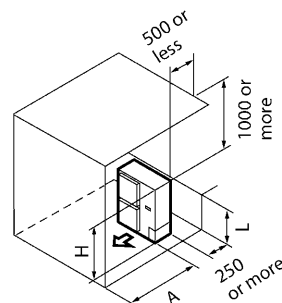
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	750
	$1/2H < L \leq H$	1000
$L > H$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.



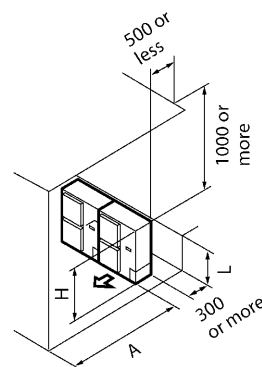
(2) Series installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	1000
	$1/2H < L \leq H$	1250
$L > H$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

Only two units can be installed for this series.

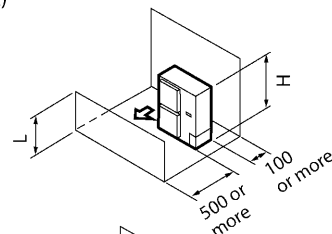
**Pattern 2**

Where the obstacle on the discharge side is lower than the unit:
(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

(1) Stand-alone installation

$$L \leq H$$

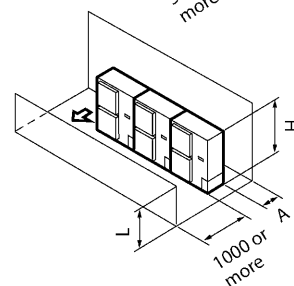


(2) Series installation

(2 or more)

The relations between H, A and L are as follows:

L	A
$0 < L \leq 1/2H$	250
$1/2H < L \leq H$	300



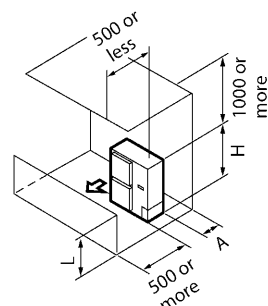
(b) Obstacle above, too

(1) Stand-alone installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	100
	$1/2H < L \leq H$	200
$L > H$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.

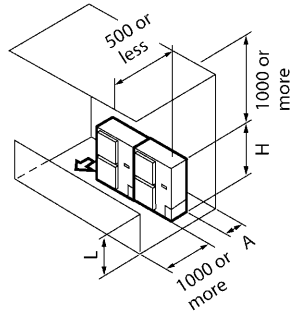


(2) Series installation

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	250
	$1/2H < L \leq H$	300
$L > H$	Set the stand as: $L \leq H$.	

Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Only two units can be installed for this series.

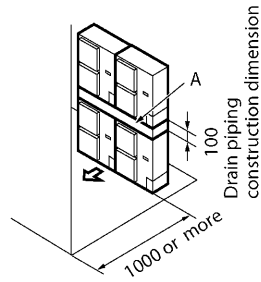


4. Double-decker installation

(a) Obstacle on the discharge side

Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

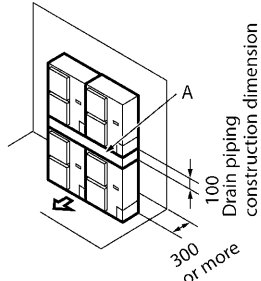
Do not stack more than two units.



(b) Obstacle on the suction side

Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

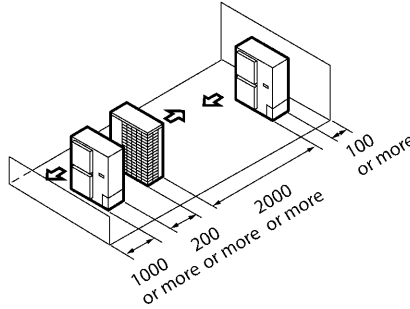
Do not stack more than two units.



5. Multiple rows of series installation

(on the rooftop, etc.)

(a) One row of stand-alone installation

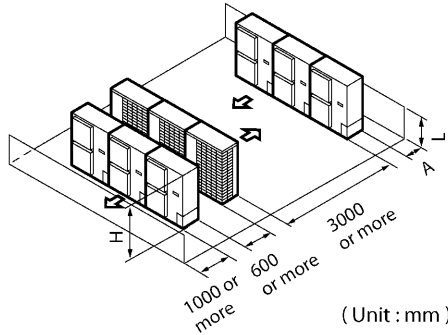


(b) Rows of series installation

(2 or more)

The relations between H, A and L are as follows:

	L	A
$L \leq H$	$0 < L \leq 1/2H$	200
	$1/2H < L \leq H$	300
$L > H$	Cannot be installed.	



(Unit : mm)

4 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 in Fig. 1, fix the unit securely by means of the foundation bolts (Prepare four sets of M12 foundation bolts, nuts and washers each which are available in the market.)
- It is best to screw in the foundation bolts until their length are 20 mm from the foundation surface.

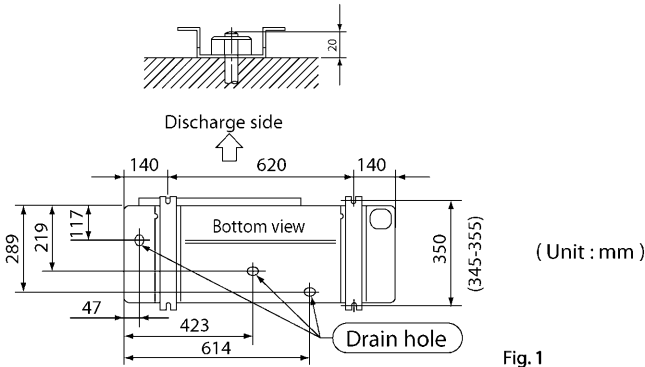


Fig. 1

<Drain pipe disposal>

- If drain pipe disposal from the outdoor unit causes trouble, (for example, if the drain water may splash on people) provide the drain piping by using of the drain plug (optional).
- Make sure the drain works properly.

5 REFRIGERANT PIPING SIZE AND PERMISSIBLE LENGTH

- (Using a chlorine flux may cause the pipes to corrode, and if it contains fluoride it may cause the refrigerant lubricant to deteriorate, adversely affecting the refrigerant piping system.)
- Use the phosphorus deoxidized seamless copper tube.
 1. Confirm the proper refrigerant piping size as follows.

(a) Refrigerant piping size

Refrigerant piping size (Outer diameter X Minimum thickness)		
Model	Gas pipe(O type)(mm)	Liquid pipe(O type)(mm)
RUR05, 06	ø19.1(3/4") × t 0.8	ø 9.5 × t 0.7

(b) Permissible piping length and height difference

Model	Permis- sible piping length (Parenthesis figure represents equivalent length)	Max. height difference
RUR05, 06	50 m (70 m)	30 m

The equivalent length is the value of the pressure loss for L joints and traps along the refrigerant piping converted for piping of the same size, and then added.

Note

Set the lower limit for the allowable piping length to 5 m. If it is shorter than 5 m, the piping will become overloaded with refrigerant, raising the possibility of malfunctions related to high-pressure.

SELECTION OF PIPING MATERIAL

Use the following material specifications for refrigerant piping :

- Quality of material : Phosphoric acid deoxidized seamless copper for refrigerant.
- Size : Determine the proper size referring to the diagram above.
- The wall thickness of the refrigerant piping should comply with relevant local and national regulations.
- For low pressure side of R410A the design pressure is 2.5 MPa.
- Temper grade(1/2H type, O type) in the table indicate the material type specified in JIS H3300

PROTECTION AGAINST CONTAMINATION WHEN INSTALLING PIPING

Protect the piping to prevent moisture, dirt, dust, etc. from entering the piping. Exercise special caution to prevent dirt or dust when passing piping through holes in walls and when passing pipe edges to the exterior.

Place	Installation period	Protection method
Outdoor	More than a month	Pinch the piping
	Less than a month	Pinch or tape the piping
Indoor	Regardless of the period	Pinch or tape the piping

CAUTION

- Do not use a flux when brazing the refrigerant piping.
For brazing, use phosphor copper brazing filler metal (BCuP) which does not require a flux.
(If a chlorine flux is used, the piping will corrode, and if the flux contains fluoride, it will cause the coolant oil to deteriorate, adversely affecting the coolant piping system.)

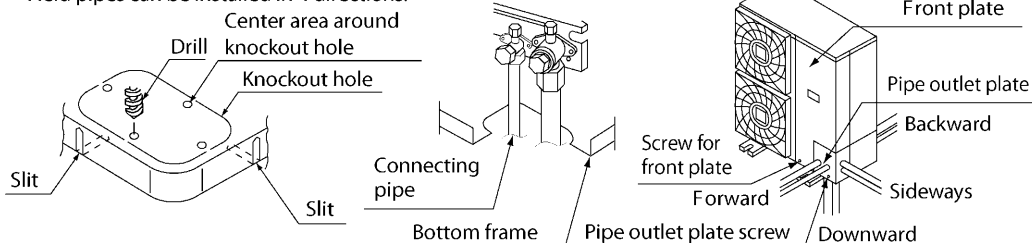
Precautions when using existing refrigerant piping

- Pay attention to the following points when using existing refrigerant piping.
Improper use can cause accidents.
- In the following situations, the existing piping should not be re-used and new piping should be installed.
 - If the previously used model had problems with its compressor (this might cause oxidized coolant oil, scale residue, and other adverse effects.)
 - If the indoor or outdoor units were disconnected from the piping for a long period of time (water or dirt might have gotten into the piping.)
 - If copper piping is corroded.
- Flares should not be re-used but rather new ones made in order to prevent leaks.
- Check welded connections for gas leaks, if the local piping has welded connections.
- Replace deteriorating insulation with new material.

6 REFRIGERANT PIPING

*See the installation manual that came with the indoor unit for details on the indoor unit's refrigerant piping.

- Field pipes can be installed in 4 directions.



*Cutting out the two slits makes it possible to install as shown in the figure above.
(Use a metal saw to cut out the slits.)

- Do not allow any substances other than the specified refrigerant such as air to mix into the refrigerant circuit. **CAUTION**
- To install the connecting pipe to the unit in a downward direction, make a knockout hole by penetrating the center area around the knockout hole using a $\varnothing 6$ mm drill.
- After knocking out the knockout hole, we recommend applying a repair coating on edges, slits, and around side surfaces to prevent rusting.

Preventing foreign objects from entering

- Plug the pipe through-holes with putty or insulating material (procured locally) to stop up all gaps, as shown in Fig. 2.
Insects or small animals entering the outdoor unit may cause a shock in the electrical box.

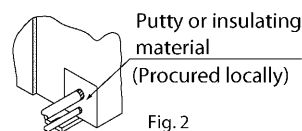


Fig. 2

1PN10561B

〈Cautions for handling Stop Valve for RUR05, 06〉

1. The stop valves for indoor-outdoor connecting piping are closed at shipment from the factory.
The names of parts are shown in Fig. 3.
2. Since the side boards may be deformed if only a torque wrench is used when loosening or tightening flare nuts, always lock the stop valve with a wrench and then use a torque wrench.
Do not place wrenches on the valve cover.
3. For cooling operation under low ambient temperature or any other operation under low pressure, apply silicon sealing pad, etc. to prevent the freezing of flare nut of gas pipe portion of the stop valve. (Refer to Fig. 4)

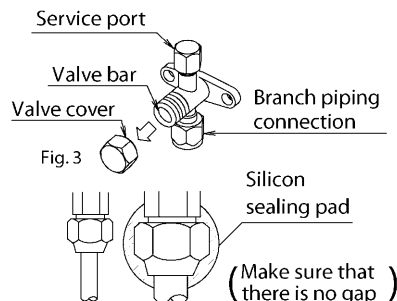


Fig. 4

〈How to use the stop valve - Fig. 5〉

Have a hex wrench ready (4 mm and 6 mm)

1. Opening the valve
 - a. Place the hex wrench on the valve bar and turn counter-clockwise.
 - b. Stop when the valve bar no longer turns. It is now open.
2. Close the valve
 - a. Place the hex wrench on the valve bar and turn clockwise.
 - b. Stop when the valve bar no longer turns. It is now closed.

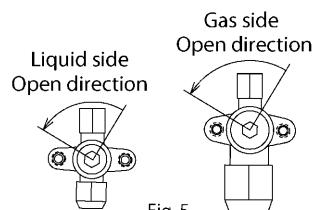


Fig. 5

CAUTIONS FOR HANDLING VALVE COVER

1. The valve cover is sealed where indicated by the arrow. (Refer to Fig. 6)
Take care not to damage it.
2. After operating the valve, be sure to tighten the valve cover properly.
Tightening torque : 19.6-24.5 N · m

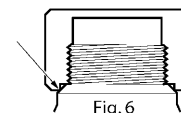


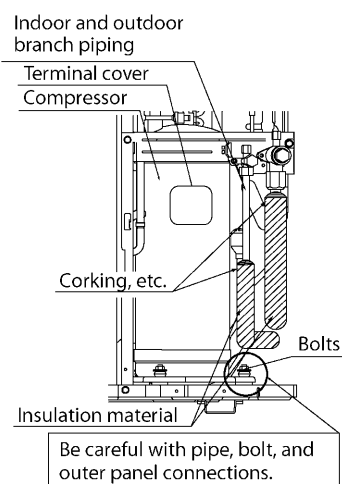
Fig. 6

CAUTIONS FOR HANDLING SERVICE PORT

1. Work with the charge hose with a pushbar.
2. After the work, tighten the valve cover in place.
Tightening torque : 10.8-14.7 N · m

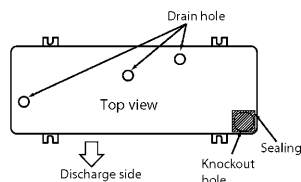
PRECAUTIONS REGARDING INSULATION

- Be careful not to let the indoor and outdoor branch piping come into contact with the compressor terminal cover.
If the liquid-side piping insulation might come into contact with it, adjust the height as shown in the figure at right. Also, make sure the branch piping does not touch the bolts of the compressor or outer panels.
- If there is a possibility that condensation on the stop valve might drip down into the indoor unit through gaps in the insulation and piping because the outdoor unit is located higher than the indoor unit, etc., this must be prevented by corking the connections, etc.
- Furthermore, if the temperature/humidity in the ceiling are expected to exceed 30°C / 80% RH, the insulation material of the refrigerant pipes should be strengthened (to be a thickness of 20 mm or more).
There may be some condensation on the surface of the insulation material.
- Be sure to insulate the liquid and gas-side branch piping and the refrigerant branch kit. (Not insulating them may cause leaking.)
- Use separate thermal insulation for gas and liquid refrigerant pipes.



1PN10561B

- ☆ After install pipe finished, please use sealing (field supply) to cover knockout hole to prevent dew drop.



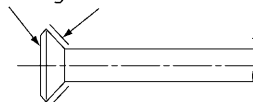
CAUTION

Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

CAUTIONS FOR FLARE CONNECTION

1. See the following table for the flare dimensions.
2. When connecting the flare nut, apply refrigerating machine oil to the flare (inside and outside) and first screw the nut 3 or 4 turns by hand. Coat here with ether or ester oil.
3. See the following table for the tightening torque. Excessive tightening could crack the flare.
4. After completing the installation, carry out a gas leak inspection of the piping connections with nitrogen and such.

Ester oil or ether oil coating



Pipe size	Tightening torque	Flare dimensions A (mm)	Flare form
ø9.5 mm (3/8")	32.7~39.9 N • m	12.8 – 13.2	
ø19.1 mm (3/4")	97.2~118.8 N • m	23.6 – 24.0	

- If a torque wrench is not available, use Table as a guide. When work is completed, be sure to check that there is no gas leakage. When a wrench is used to tighten the flare nuts, the tightening torque may increase suddenly. From this position tighten only to the angle shown in table.

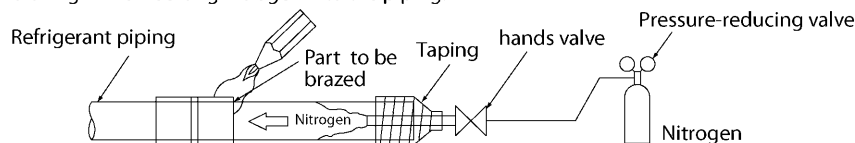
Pipe size	Further tightening angle	Recommended arm length of tool
ø9.5 mm (3/8")	60 to 90 degrees	Approx. 200mm
ø19.1 mm (3/4")	20 to 35 degrees	Approx. 450mm

●Be sure to carry out a nitrogen blow when brazing.

(Brazing without carrying out nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film on the inside of the pipes, adversely affecting valves and compressors in the refrigerating system and preventing normal operation.)

NOTES

1. Refer to the "Manual for Installation" for directions on how to carry out nitrogen replacement. (Inquire with your dealer.)
2. Nitrogen should be set to 0.02 Mpa (enough so that it can be felt on the skin) with a pressure-reducing valve if brazing while inserting nitrogen into the piping.



1PN10561B

7 LEAKAGE TEST AND VACUUM DRYING

CAUTION

The units were checked for leakage by the manufacturer. Confirm that the liquid side and the gas side valves are firmly closed before leakage test and vacuum drying. Make sure to perform leakage test and vacuum drying by using the service ports of the liquid side stop valve and the gas side stop valve.

To prevent entry of any impurities and insure sufficient pressure resistance, always use the special tools dedicated for R410A.

<Leakage test>

Make sure to use nitrogen gas.

Pressurize the liquid and gas pipes to 2.5MPa (do not pressurize more than 2.5MPa).

If the pressure does not drop within 24 hours, the system passes the test. If the pressure drops, check where the nitrogen leaks from, and prevent leakage.

<Vacuum drying>

Use a vacuum pump which can evacuate to -100.7 kPa(-755 mmHg) or less.

1. Evacuate the liquid pipe, the gas pipe and the indoor unit to -100.7 kPa or less by using a vacuum pump for more than 2 hours. After stopping the vacuum pump, confirm that the pressure don't rise for more than 1 hour. If the pressure rises, the system may either contain moisture inside or have leakage.

2. Following should be executed if there is a possibility of moisture remaining inside the pipes.

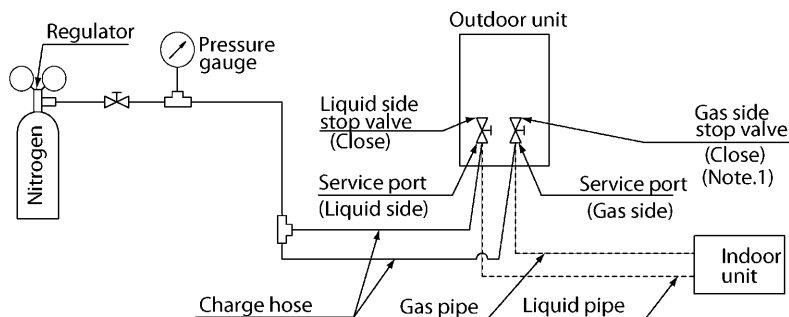
(if installation of refrigerant piping is carried out during the raining season or over a long period of time, or if rainwater may enter the pipe during installation, moisture may remain inside the pipes.)

After evacuating the liquid pipe, the gas pipe and the indoor unit for more than 2 hours, pressurize the liquid pipe, the gas pipe and the indoor unit to 0.05MPa with nitrogen gas (vacuum break) and evacuate the liquid pipe, the gas pipe and the indoor unit to -100.7 kPa or less for more than 1 hour by using the vacuum pump (vacuum drying) again.

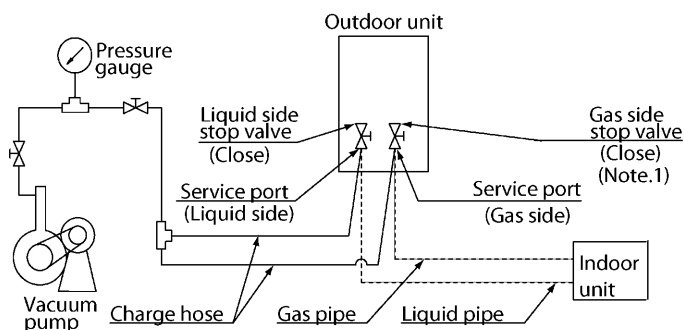
If the liquid pipe, the gas pipe and the indoor unit cannot be evacuated to -100.7 kPa or less within 2 hours, repeat the operation of vacuum break and vacuum drying. Then confirm that the pressure don't rise for more than 1 hour after stopping the vacuum pump.

(Note.1) Connect the charge hose to gas side stop valve.

LEAKAGE TEST





VACUUM DRYING



1PN10561B

8 CHARGING OF REFRIGERANT

Before working
[About the refrigerant tank]
Check whether the tank has a siphon pipe before charging and place the tank so that the refrigerant is charged in liquid form. (See the figure below.)

With siphon pipe	Other tanks
 Stand the tank upright and charge. (The siphon pipe goes all the way inside, so the tank does not need be put upside-down charge in liquid form.)	 Stand the tank upside-down and charge.

CAUTION

- Always use the proper refrigerant (R410A). If charged with the refrigerant containing an improper material, it may cause an explosion or accident.
- R410A is a mixed refrigerant, so charging it as a gas will cause the refrigerant composition to change, which may prevent normal operation.

- This unit requires additional charging of refrigerant according to the length of pipe connected at the site. When the entire refrigerant pipe length is within 7.5 meters, the additional charging is not needed.

Take the following steps for proper charging.

1. Refrigerant charge amount

Additional charging of refrigerant
Select the appropriate refrigerant charging amount from Table 1 and charge the refrigerant.
Write down the amount of extra refrigerant added in accordance with the precaution plate on the rear surface of the front plate, as this is necessary for after-sales service.

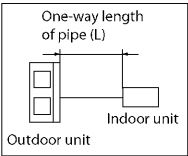


Table 1 Additional charging refrigerant amount

Additional charging
refrigerant amount

kg

=

Piping
length (L)

m

— A

× B

A = 7.5 m, for RUR05, 06 model

B = 0.03 kg/m, for RUR05, 06 model

CAUTION

To persons in charge of piping work:

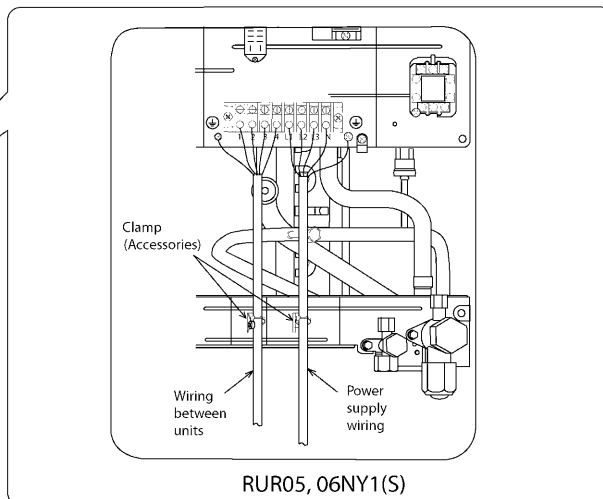
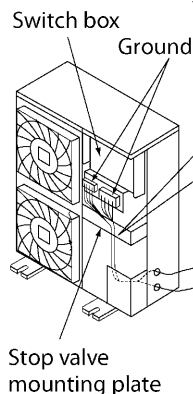
- Be sure to open the stop valve after piping work is complete.
(Running the system with the valve closed may break the compressor.)

1PN10561B

9 ELECTRICAL WIRING

⚠ Install the earth leakage circuit breaker.

- Electrical wiring must be carried out by **qualified personnel**. ⚠ **WARNING**
- Before obtaining access to terminal devices, all supply circuits must be interrupted. ⚠ **WARNING**
- Be sure to ground the air conditioner. ⚠ **CAUTION**
- Do not connect the earth wire to a gas pipe, water pipe, lightning conductor or telephone earth wire. ⚠ **CAUTION**
- Use only copper wires. ⚠ **CAUTION**
- The wiring between the indoor unit and outdoor unit must be for 220~240V.
- Do not turn on the main switch until all the wiring is completed.
- The resistance of the grounding must not exceed 100 Ω.
- When performing electrical wiring, refer also to the wiring diagram affixed to the unit.
- Use the specified wires and fix them with clamps so that no external forces act on the terminals. For clamping, push the hook in tail end of the clamp to loosen it, pass the wires through it, then fasten the clamp.
- Clamp the wiring as shown below, taking care that the wires do not touch the piping. (especially high-pressure piping)
- For 3 phase models
Make sure to connect power supply cables in normal phase. If connected in reverse phase, the equipment cannot operate (RUR05), abnormal sound of compressor will be happened or compressor will stop after run around 3 minutes (RUR06). Change any two of the three power supply cables (L1, L2, L3) to correct phase.
(If the contact in the magnetic switch should be forcibly turned on while the equipment is inoperative, the compressor will be damaged by a fire. Never try to forcibly turn on the contact.)
- Never squeeze extra wires into the unit.
- Protect the electric wiring with electric wiring pipes or tubes to prevent the edges of the knock holes from damaging it.
- Secure the electrical wiring with the included clamping material as shown in the figure below so that it does not come in contact with the piping, particularly on the high-pressure side.
Make sure no external pressure is applied to the terminal connectors.
Secure the wiring in the order shown below.
1. Secure the wiring between units to the stop valve mounting plate so that it does not slide.
2. Secure the wiring between units to the stop valve mounting plate one more time along with the power supply wiring.
- Lay the electrical wiring so that the front cover does not rise up when doing wiring work, and attach the front cover securely.
- Form the wires and fix the cover firmly so that the cover may be fit in properly.



Observe the notes mentioned below when wiring to the power supply terminal board.

(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.)

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
- When connecting wires of the same gauge, connect them according to the righthand figure.
- In wiring, make certain that prescribed wires are used, carry out complete connections, and fix the wires so that outside forces are not applied to the terminals.

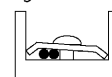
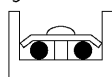
Round crimp-style terminal

Electric Wire

Connect wires of the same gauge to both side.

Do not connect wires of the same gauge to one side.

Do not connect wires of different gauges.

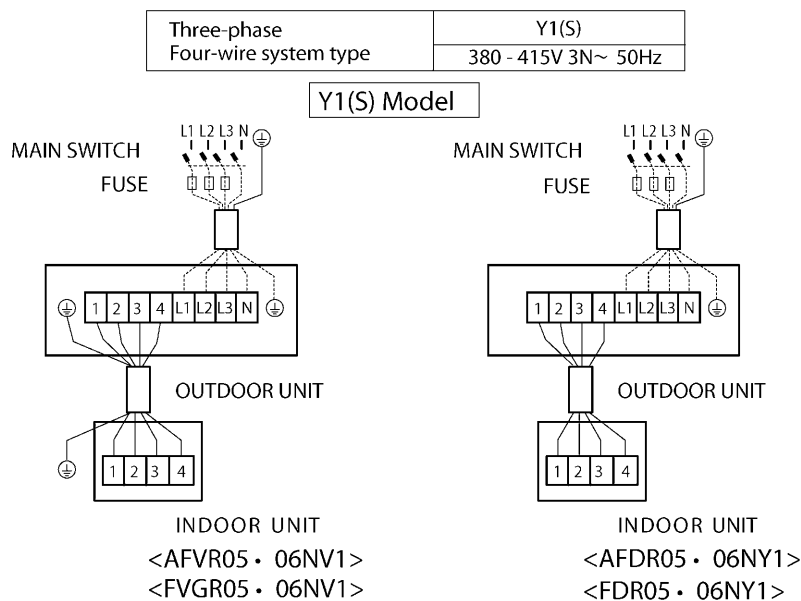


- Use the correct screwdriver to tighten the terminal screws. Small screwdrivers can damage the screw head and prevent appropriate tightening.
- Over-tightening the terminal screws can damage the screws.
- See the chart at right for tightening torques for the terminal screws.

Tightening torques (N · m)	
M4	1.18 – 1.44
M5	2.39 – 2.91

<How to Connect the Power Supply and Wire between Units>

1. For details on the wiring of the indoor unit and wiring between units, refer to the Installation Manual of the indoor unit.



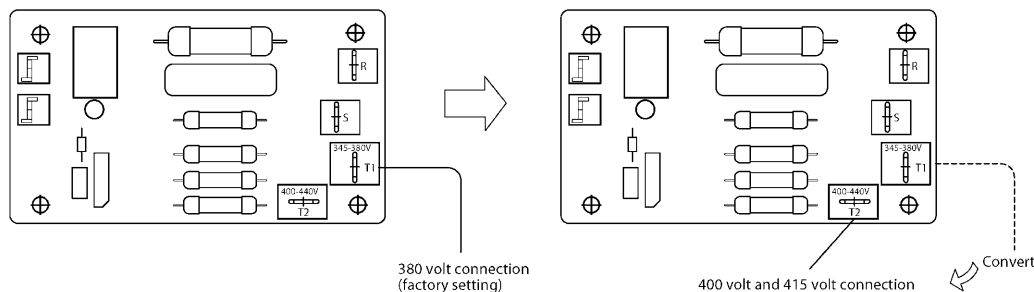
Specifications of standard wiring components

Model combination		Power supply (for outdoor unit)			Wire type of wiring between the units
Outdoor unit	Indoor unit	Field fuse	Wire type	Size	
RUR05N	AFVR05N, FVGR05N	20 A	H05VV-U5G	Wiring size must comply with the applicable local and national code.	H05VV-U5G2.5 (For AFVR05•06N, FVGR05•06N)
RUR06N	AFVR06N, FVGR06N	25 A			
RUR05N	AFDR05N, FDR05N	15 A	H05VV-U5G		H05VV-U4 (For AFDR05•06N, FDR05•06N)
RUR06N	AFDR06N, FDR06N	20 A			

- Instead of fuse, use circuit breaker.
- Refer to the engineering data for details.

CAUTION : (RUR05 Only)

- Make sure that the phase reversal protector's terminal connection is converted when switching to a 400 volt or 415 volt connection.



- Failing to convert to the proper voltage will cause serious damage to the unit.

CAUTION

To persons in charge of electrical wiring work:

- Do not operate the unit until the refrigerant piping is complete. (Running it before the piping is ready will break the compressor.)

10 TEST RUN PROCEDURE

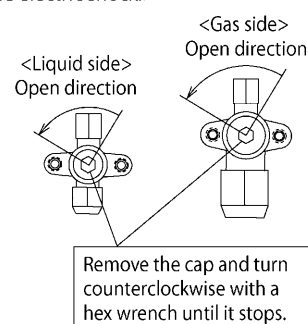
- Be sure to fully open the liquid-side and gas-side stop valves.
- For details on test operation, refer to the Installation Manual of the indoor unit.

Pre-run checks

	Item to check
<ul style="list-style-type: none"> • Power supply wiring • Wiring between units • Ground wire 	<ul style="list-style-type: none"> • Is the wiring as per the wiring diagram? Make sure no wiring has been forgotten and that there are no missing phases or reverse phases. • Is the unit properly grounded? • Are any of the wiring attachment screws loose? • Is the insulation resistance at least 1MΩ? • Use a 500V mega-tester when measuring insulation. • * Do not use a mega-tester for circuits which are not 220-240V.
<ul style="list-style-type: none"> • Refrigerant piping 	<ul style="list-style-type: none"> • Is the size of the piping appropriate? • Is the insulation material for the piping attached securely? Are both the liquid and gas pipes insulated? • Are the stop valves for both the liquid side and the gas side open?
<ul style="list-style-type: none"> • Extra refrigerant 	<ul style="list-style-type: none"> • Did you write down the extra refrigerant and the refrigerant piping length?

Test run

1. Make sure the liquid and gas stop valves are open.
<Be sure to close the outside cover before operation, as not doing so can cause electric shock.>
2. Turn on the remote controller or control panel (refer to indoor unit installation manual)
3. Make sure the compressor is not starting and stopping during the test-run by listening. If it is starting and stopping, immediately stop the machine using the remote control, and check the refrigerant level, etc. There may be some sort of malfunction.
 - There is a safety device against malfunctions in the compressor. If a malfunction occurs (including closed stop valves or no gas), the internal safety device may be activated due to the temperature in the compressor rising. Once this happens, the unit will not be able to be run until the temperature in the compressor drops (between 30 minutes and 2 hours), but this does not mean the machine is broken. Make sure the unit not being run without gas due to a closed stop valve or a gas leak.



1PN10561B

3.2 RUR08NY1 / RUR10NY1 / RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1

3.2.1 Installation



AIR CONDITIONER

< Cooling only > RUR08NY1(S), RUR10NY1(S), RUR13NY1(S), RUR15NY1(S), RUR18NY1(S), RUR20NY1(S)

OUTDOOR UNIT INSTALLATION MANUAL

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.
KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.


1PN10564-1C


SAFETY CONSIDERATIONS

Please read these "Safety considerations" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliances not accessible to the general public".

Meaning of Warning and Caution notices

 **Warning**..... Failure to follow these instructions properly may result in personal injury or loss of life.

 **Caution**..... Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened.
Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
- Do not allow children to climb on the outdoor unit and avoid placing objects on the unit.
Injury may result if the unit becomes loose and falls.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.



1PN10564C

CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- 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.
- Do not install the air conditioner in the following locations:
 - Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 - Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 - Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 - Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

Special notice of product

[REFRIGERANT]

System use R410A refrigerant.

- The refrigerant R410A requires strict cautions for keeping the system clean, dry and tight.
Read the chapter "REFRIGERANT PIPING" carefully and follow these procedures correctly.
 - Clean and dry
Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting mixed into the system.
 - Tight
Take care to keep the system tight when installing.
R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection against harmful ultraviolet radiation.
R410A can contribute slightly to the greenhouse effect if it is released.
- Since R410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition changes and the system will not work properly.

Note

- Be sure to connect an R410A indoor unit.
See the catalog for indoor unit models which can be connected.

Disposal requirements






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

NOTE

- Read this manual before installation and install the unit according to this manual.
- For installation of the indoor unit, refer to the installation manual attached to the indoor unit.

ACCESSORIES

Confirm the following accessories are attached.



Name	Gas side accessory pipe (1)	Gas side accessory pipe (2)	Gas side accessory pipe (3)	Gas side accessory pipe (4)	Clamp material	Other
Quantity	1 pc.	1 pc.	1 pc.	1 pc.	4 pcs.	
Shape	For RUR08N only 	For RUR10~18N only 		For RUR15~18N only 		Installation manual

1PN10564C

UNIT DIMENSION

Model Name	Unit Dimension H × W × D (mm)	Weight (kg)
RUR08NY1(S)	1680 × 930 × 765	203
RUR10NY1(S)	1680 × 930 × 765	206
RUR13NY1(S)	1680 × 1240 × 765	243
RUR15NY1(S)	1680 × 1240 × 765	319
RUR18NY1(S)	1680 × 1240 × 765	322
RUR20NY1(S)	1680 × 1240 × 765	329

1 CARRYING-IN

- At delivery, the package should be checked and any damage should be reported immediately to the carrier claims agent.
- When handling the unit, take into account the following :
 -  Fragile, handle the unit with care.  Keep the unit upright in order to avoid compressor damage.
 - Decide on the transportation route.
 - If a forklift is to be use, pass the forklift arms through the large openings on the bottom of the unit.
(Refer to Figure 1)
 - If hanging the unit, use a cloth sling to prevent damaging the unit. Keeping the following point in mind, hang the unit following the procedure shown in Figure 2.
 - Use a sling sufficiently strong to hold the mass of the unit.
 - Place extra cloth or boards in the locations where the casing comes in contact with the sling to prevent damage.
 - Hoist the unit making sure it is being lifted at its center of gravity.
 - After installation, remove the transportation clasp attached to the large openings. (Refer to Figure 2)

(Refer to Figure 1)

- Fork
- Hole (large)
- Transportation clasp (yellow)
- Fixed screws of transportation clasp

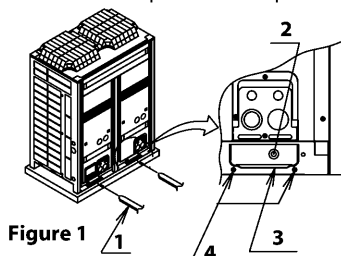


Figure 1

(Refer to Figure 2)

- Belt sling
- Board
- Hole (large)
- Hole (small)

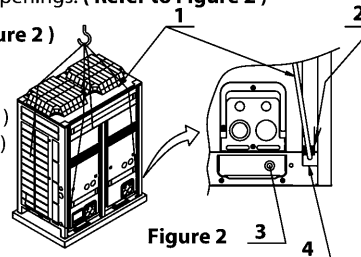


Figure 2

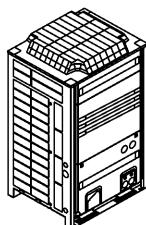
2 SELECTION OF INSTALLATION SITE

- Select a site where the following conditions can be satisfied and make sure the customer agrees to it.
 - where the space is well ventilated
 - where the unit does not cause a trouble to the neighbors
 - where the unit can be installed safely on a level base which withstand the weight and vibration
 - where the rain can be avoided as much as possible
 - where the sufficient space for installation is available
 - where the piping and wiring length between the indoor and outdoor unit is within the allowable distance .
 - where there is no danger of flammable gas leak .
- If the local codes restrict the installation height from the ground level, follow the local codes at installation.

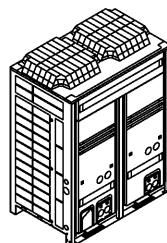
1PN10564C

3 INSTALLATION SERVICE SPACE

2

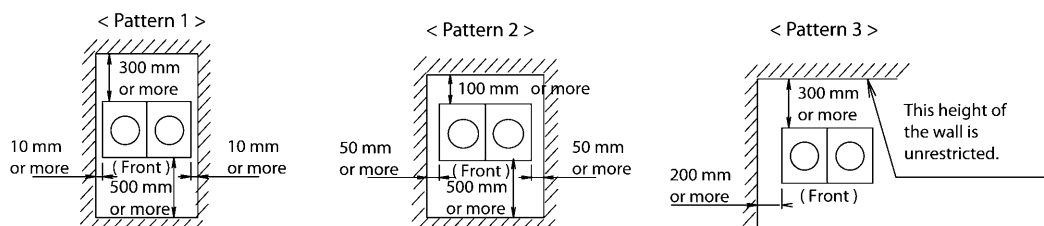


(RUR08,10N TYPE)

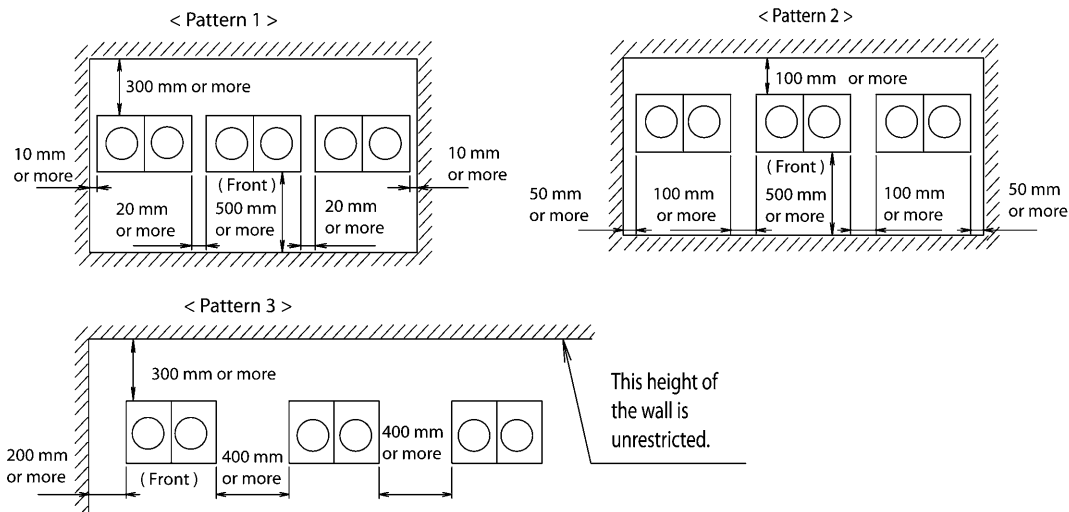


(RUR13,15,18,20N TYPE)

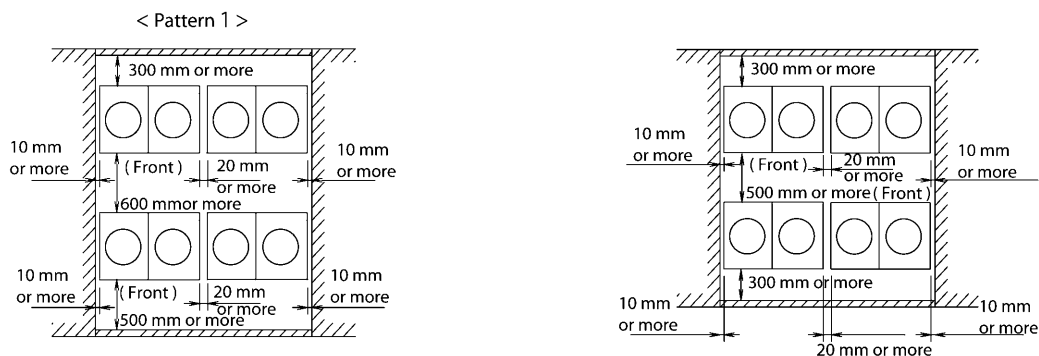
SINGLE INSTALLATION



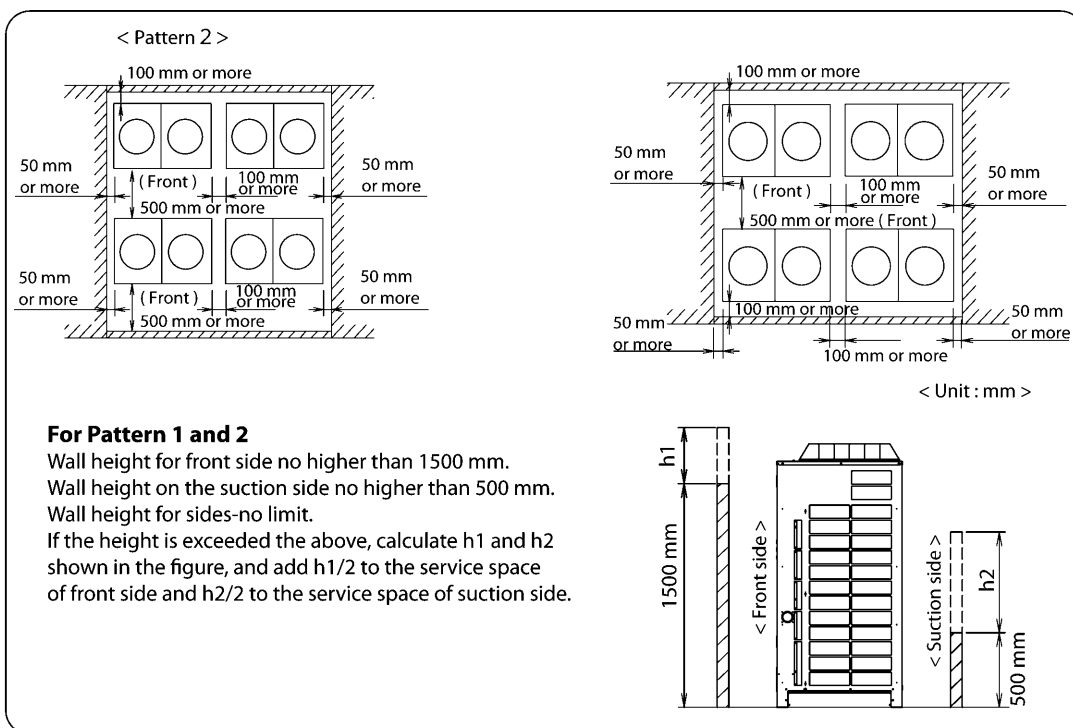
SERIAL INSTALLATION



FOR CENTRALIZED GROUP LAYOUT



1PN10564C



4 PRECAUTION ON INSTALLATION

- Make sure the unit is installed level on a sufficiently strong base to prevent vibration and noise.(Refer to Figure 3)
- The base should be bigger around than the width of the unit's legs (66mm),and should support the unit.
(Refer to Figure 4) If protective rubber is to be attached, attach it to the whole face of the base.
- The height of the base should be at least 150mm from the floor.
- Secure the unit to its base using foundation bolts.(Use four commercially available M12-type foundation bolts, nuts,and washers.)
- The foundation bolts should be inserted 20 mm.

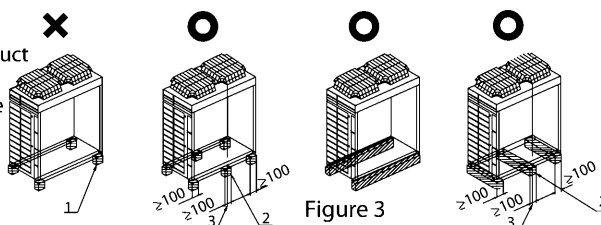
(Refer to Figure 3)

- 1.In the case of RUR08N type or more,the product cannot be supported with four corners.
- 2.It is need in the case of RUR08N type or more
- 3.Center of the product

(Refer to Figure 4)

- 1.Foundation bolt point ($\varnothing 15$ dia.:4 positions)
- 2.Depth of product
- 3.Width of support leg

Model	A	B
RUR08,10N	930	792
RUR13,15,18,20N	1240	1102



OUTDOOR UNIT INSTALLATION LEG SHARP AND FOUNDATION DIAGRAM

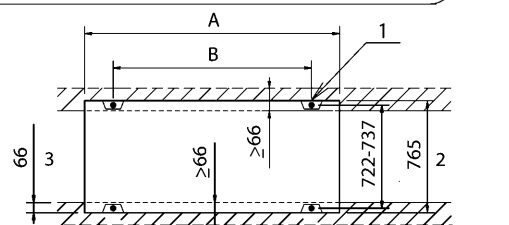


Figure 4

(Unit : mm)

CAUTION

Prepare the drainage ditch around the foundation to drain waste water from around the unit.
 When installing the unit on a roof, be sure to waterproof the floor and confirm the floor have enough strenght

5 REFRIGERANT PIPING SIZE AND PERMISSIBLE LENGTH

(Using a chlorine flux may cause the pipes to corrode, and if it contains fluoride it may cause the refrigerant lubricant to deteriorate, adversely affecting the refrigerant piping system)

- Use the phosphorus deoxidized seamless copper tube.
 1. Confirm the proper refrigerant piping size as follows.

Refrigerant piping size and permissible pipe length and height difference.

Outdoor unit	Refrigerant piping size (outer diameter x minimum thickness)		Maximum allowable length (Between outdoor unit and indoor unit)		Maximum allowable difference in height (Between outdoor unit and indoor unit)
	Gas pipe(1/2H type) (mm)	Liquid pipe(O type) (mm)	Actual pipe length	Equivalent length	
RUR08N	∅ 22.2 (7/8") x t 0.8	∅ 12.7 (1/2") x t 0.8	50 m	70 m	30 m
RUR10,13N	∅ 28.6 (1 1/8") x t 0.8	∅ 12.7 (1/2") x t 0.8			
RUR15,18,20N	∅ 34.9 (1 3/8") x t 0.9	∅ 15.9 (5/8") x t 0.8			

The equivalent length is the value of the pressure loss for L joints and traps along the refrigerant piping converted for piping of the same size and then added.

Note) Set the lower limit for the allowable piping to 5 m. If it is shorter than 5 m, the piping will become overloaded with refrigerant, raising the possibility of malfunctions related to high-pressure.

SELECTION OF PIPING MATERIAL

Use the following material specifications for refrigerant piping:

- Quality of material: Phosphoric acid deoxidized seamless copper for refrigerant.
- Size: Determine the proper size referring to the diagram above.
- The wall thickness of the refrigerant piping should comply with relevant local and national regulations.
- For low pressure side of R410A, the design pressure is 2.5 MPa.
- Temper grade(1/2H type, O type) in the table indicate the material type specified in JIS H3300.

PROTECTION AGAINST CONTAMINATION WHEN INSTALLING PIPING

Protect the piping to prevent moisture, dirt, dust, etc. from entering the piping. Exercise special caution to prevent dirt or dust when passing piping through holes in walls and when passing pipe edges to the exterior.

Place	Installation period	Protection method
Outdoor	More than a month	Pinch the piping
	Less than a month	Pinch or tape the piping
Indoor	Regardless of the period	

CAUTION

- Do not use a flux when brazing the refrigerant piping.
For brazing, use phosphor copper brazing filler metal (BCuP) which does not require a flux.
(If a chlorine flux is used, the piping will corrode, and if the flux contains fluoride, it will cause the coolant oil to deteriorate, adversely affecting the coolant piping system.)

Precautions when using existing refrigerant piping

- Pay attention to the following points when using existing refrigerant piping.
Improper use can cause accidents.
- In the following situations, the existing piping should not be re-used and new piping should be installed.
 - If the previously used model had problems with its compressor (this might cause oxidized coolant oil, scale residue, and other adverse effects.)
 - If the indoor or outdoor units were disconnected from the piping for a long period of time (water or dirt might have gotten into the piping.)
 - If copper piping is corroded.
- Flares should not be re-used but rather new ones made in order to prevent leaks.
- Check welded connections for gas leaks, if the local piping has welded connections.
- Replace deteriorating insulation with new material.

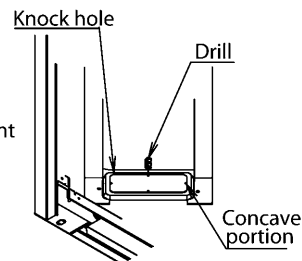
1PN10564C

6 REFRIGERANT PIPING

* See the installation manual that came with the indoor unit for details on the indoor unit's refrigerant piping

<PRECAUTION WHEN MAKING KNOCK HOLE>

- Open knock hole in the base frame by drilling the 4 concave around it with a 6mm bit.(Refer to figure)
- Be sure to avoid damaging the casing
- After Knocking out the holes, we recommend you remove any burrs and paint them using the repair paint to prevent rusting.
- When passing electrical wiring through the knock holes, protect the wiring with a conduit or bushing making sure not to damage the wiring.



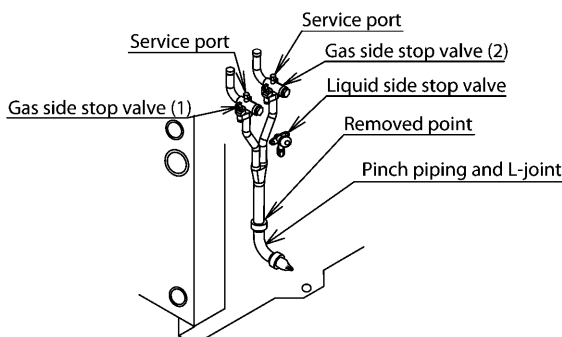
CONNECTING REFRIGERANT PIPING

< Direction to bring out the pipes >

The local interunit piping can be connected either forward or to the side as shown in the figure (when passing out through the bottom, use the knock hole in the bottom frame.) (taken out through the bottom)

< Removing Pinch Piping and L-joint > (only for RUR20N)

- When connecting refrigerant piping to the outdoor unit, remove the pinch piping and L-joint. (Refer to figure below)
- Pinch piping and L-joint should be removed using the procedure in the figure below.



<Only RUR20N >

(Refer to Figure)

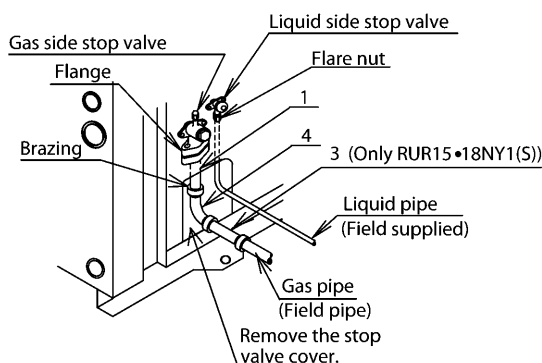
1. Procedure 1 :
Confirm the 2 gas side stop valves are closed.
2. Procedure 2 :
Connect a charge hose to one of the service port of gas side stop valve and remove the gas from the pinch piping.
3. Procedure 3 :
After removing the gas from the piping, dissolve the brazing using a burner and remove the pinch piping and L-joint.

⚠ CAUTION

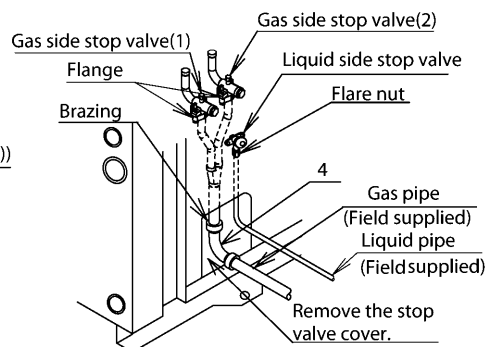
After removing the gass, remove the pinch piping and L-joint.
Any gas remaining inside may blow off the pinch piping when you dissolve the brazing, causing damage.

FRONT CONNECTION

< RUR08-18N >



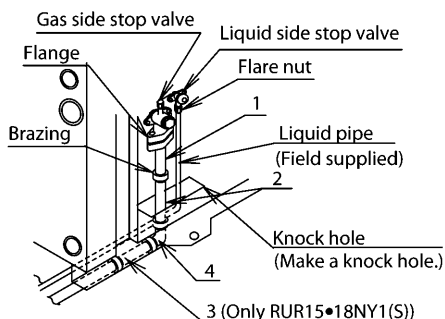
< RUR20N >



1PN10564C

BOTTOM CONNECTION

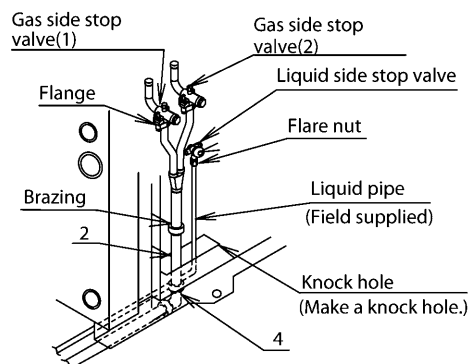
< RUR08-18N >



(Refer to Figure)

1. Gas side accessory pipe (1)
2. Gas side accessory pipe (2)
3. Gas side accessory pipe (3)
4. Gas side accessory pipe (4)

< RUR20N >

**⚠ WARNING**

- Be sure to use the accessory pipes when connecting the refrigerant piping.
- Be sure that the field piping does not contact other pipes, the bottom or front panel. Be sure to protect the field piping with the insulation, to prevent the field piping from contacting the casing.

〈 Preventing foreign objects from entering 〉

- Plug the pipe through-holes with putty or insulating material (procured locally) to stop up all gaps, insects or small animals entering the outdoor unit may cause a shock in the electrical box.

〈 Cautions for handling Stop Valve 〉

1. The stop valves for indoor-outdoor connecting piping are closed at shipment from the factory. The names of parts are shown in Figure 5.

2. Since the side boards may be deformed if only a torque wrench is used when loosening or tightening flare nuts, always lock the stop valve with a wrench and then use a torque wrench. Do not place wrenches on the valve cover.

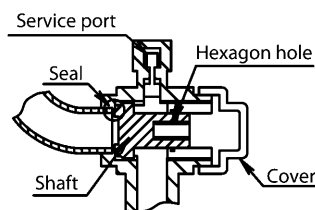


Figure 5

STOP VALVE OPERATION PROCEDURE

Confirm the size of the stop valves referring to the diagram right.

< OPENING STOP VALVE >

1. Remove the cap and turn the shaft counterclockwise with the hexagon wrench (JIS B4648).
2. Turn the shaft until the shaft stops. Do not apply excessive force to the shaft. Doing so may break the valve body, as the valve is not a backseat type. Always use the special tool.
3. Make sure the tighten the cap securely.

< CLOSING STOP VALVE >



1. Remove the cap and turn the shaft clockwise with the hexagon wrench (JIS B4648).
2. Securely tighten the shaft until the shaft contacts the seal.
3. Make sure to tighten the cap securely.

For the tightening torque, refer to the below diagram .

Continued overleaf

NOTE

- Always use the charge hose for service port connection.
- After tightening the cap, confirm that there is no refrigerant leakage.

	Outdoor unit	Stop valve hexagon wrench size(mm)	Tightening torque (N・m)			
			Stop valve			Service port Cover
			Shaft (Valve body)	Cover	Bolt (Flange)	
Liquid side	RUR08-13N	4	8.1 ~ 9.9	18 ~ 22		11.5 ~ 13.9
	RUR15-20N	6	13.5~ 16.5	23 ~ 27		
Gas side	RUR08-20N	10	17.7~ 19.6	36~ 43	22 ~ 28	

CAUTIONS FOR HANDLING VALVE COVER

1. The valve cover is sealed where indicated by the arrow. (Refer to Figure 6)
Take care not to damage it.
2. After operating the valve, be sure to tighten the valve cover properly.
Tightening torque : refer to the table

CAUTIONS FOR HANDLING SERVICE PORT

1. Work with the charge hose with a pushbar.
2. After the work, tighten the valve cover in place.
Tightening torque : refer to the table

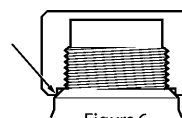


Figure 6

PRECAUTIONS REGARDING INSULATION

- If there is a possibility that condensation on the stop valve might drip down into the indoor unit through gaps in the insulation and piping because the outdoor unit is located higher than the indoor unit, etc., this must be prevented by corking the connections, etc.
- Furthermore, if the temperature/humidity in the ceiling are expected to exceed 30°C / 80% RH, the insulation material of the refrigerant pipes should be strengthened (to be a thickness of 20 mm or more). There may be some condensation on the surface of the insulation material.
- Be sure to insulate the liquid and gas-side branch piping and the refrigerant branch kit. (Not insulating them may leaking.)
- Use separate thermal insulation for gas and liquid refrigerant pipes.

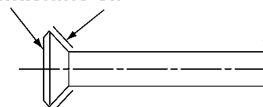
CAUTION

Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

CAUTIONS FOR FLARE CONNECTION

1. See the following table for the flare dimensions.
2. When connecting the flare nut, apply refrigerating machine oil to the flare (inside and outside) and first screw the nut 3 or 4 turns by hand.
3. See the following table for the tightening torque.
Excessive tightening could crack the flare.
4. After completing the installation, carry out a gas leak inspection of the piping connections with nitrogen and such.

Coated with refrigerating machine oil



1PN10565C

Piping size	Tightening torque	Dimension of A for flare	Flare shape
∅ 12.7 mm (1/2")	49.5 ~ 60.3 N • m	∅ 16.2 ~ 16.6mm	
∅ 15.9 mm (5/8")	61.8 ~ 75.4 N • m	∅ 19.3 ~ 19.7mm	

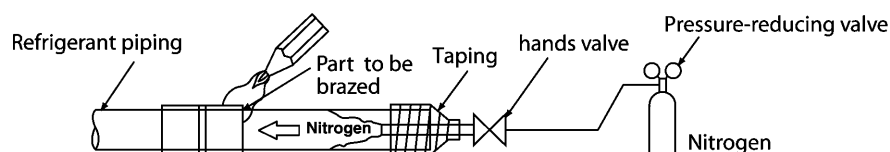
- If a torque wrench is not available, use Table as a guide.
When work is completed, be sure to check that there is no gas leakage.
When a wrench is used to tighten the flare nuts, the tightening torque may increase suddenly.
From this position tighten only to the angle shown in table.

Pipe size	Further tightening angle	Recommended arm length of tool
∅ 12.7 mm (1/2")	30 to 60 degrees	Approx. 250mm
∅ 15.9 mm (5/8")	30 to 60 degrees	Approx. 300mm

- Be sure to carry out a nitrogen blow when brazing. (Brazing without carrying out nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film on the inside of the pipes, adversely affecting valves and compressors in the refrigerating system and preventing normal operation.)

NOTES

1. Refer to the "Manual for Installation" for directions on how to carry out nitrogen replacement.
(Inquire with your dealer.)
2. Nitrogen should be set to 0.02 MPa (enough so that it can be felt on the skin) with a pressure-reducing valve if brazing while inserting nitrogen into the piping.



7 LEAKAGE TEST AND VACUUM DRYING

LEAKAGE TEST AND VACUUM DRYING

CAUTION

The units were checked for leakage by the manufacturer. Confirm that the liquid side and the gas side valves are firmly closed before leakage test and vacuum drying. Make sure to perform leakage test and vacuum drying by using the service ports of the liquid side stop valve and the gas side stop valve.

To prevent entry of any impurities and insure sufficient pressure resistance, always use the special tools dedicated for R410A.

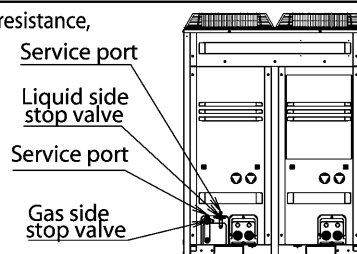
<LEAKAGE TEST>

Make sure to use nitrogen gas.
Pressurize the liquid and gas pipes to 2.5MPa (do not pressurize more than 2.5MPa).
If the pressure does not drop within 24 hours, the system passes the test. If the pressure drops, check where the nitrogen leaks from, and prevent leakage.

<VACUUM DRYING>

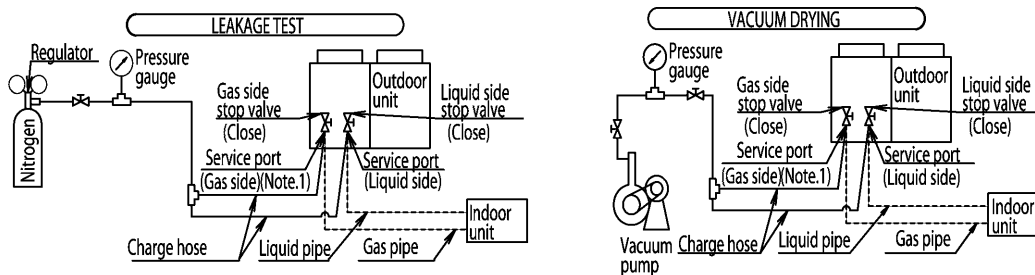
Use a vacuum pump which can evacuate to -100.7 kPa(-755 mmHg) or less.

1. Evacuate the liquid pipe, the gas pipe and the indoor unit to -100.7 kPa or less by using a vacuum pump for more than 2 hours. After stopping the vacuum pump, confirm that pressure don't rise for more than 1 hour.
If the pressure rises, the system may either contain moisture inside or have leakage.
2. Following should be executed if there is a possibility of moisture remaining inside the pipes.
(if installation of refrigerant piping is carried out during the raining season or over a long period of time, or if rainwater may enter the pipe during installation, moisture may remain inside the pipes.)



After evacuating the liquid pipe, the gas pipe and the indoor unit for more than 2 hours, pressurize the liquid pipe, the gas pipe and the indoor unit to 0.05MPa with nitrogen gas (vacuum break) and evacuate the liquid pipe, the gas pipe and the indoor unit to -100.7 kPa or less for more than 1 hour by using the vacuum pump (vacuum drying) again. If the liquid pipe, the gas pipe and the indoor unit cannot be evacuated to -100.7 kPa or less within 2 hours, repeat the operation of vacuum break and vacuum drying. Then confirm that the pressure don't rise for more than 1 hour after stopping the vacuum pump.

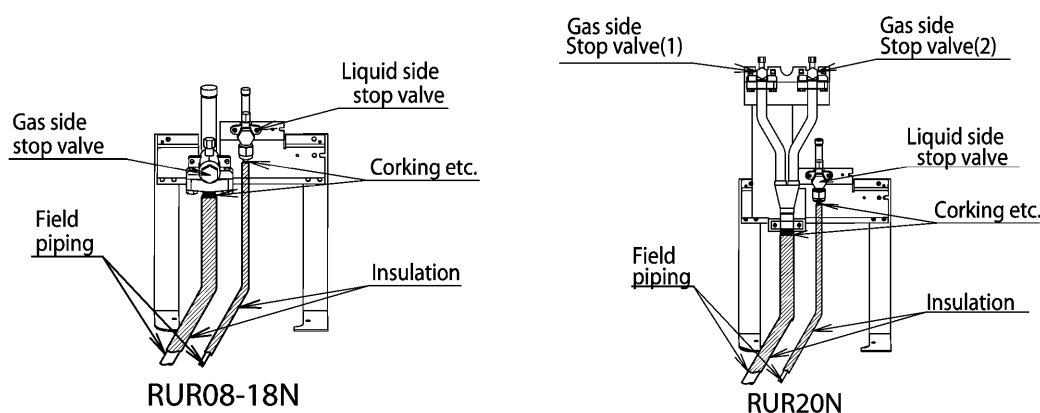
(Note.1) For RUR20N, connect the charge hose to service port of gas side stop valve either (1) or (2).



PIPE INSULATION

After finishing the leakage test and vacuum drying, insulate the field piping. Take into account the following points:

- Be sure to insulate the liquid pipe and the gas pipe. Not insulating them may cause water leakage.
- Be sure the insulation used can withstand 80 °C.
- If there is a possibility that condensation on the stop valves might drip down into the indoor unit through gaps in the insulation and the pipe because the outdoor unit is located higher than the indoor unit, etc., prevent water leakage by caulking the connections, etc., as shown in the figure right.





8 CHARGING OF REFRIGERANT

Before working

[About the refrigerant tank]

Check whether the tank has a siphon pipe before charging and place the tank so that the refrigerant is charged in liquid form. (See the figure below.)

With siphon pipe	Other tanks
 <p>Stand the tank upright and charge. (The siphon pipe goes all the way inside, so the tank does not need be put upside-down charge in liquid form.)</p>	 <p>Stand the tank upside-down and charge.</p>

1PN10565C

CAUTION

- Always use the proper refrigerant (R410A). If charged with the refrigerant containing an improper material, it may cause an explosion or accident.
- R410A is a mixed refrigerant, so charging it as a gas will cause the refrigerant composition to change, which may prevent normal operation.

- This unit requires additional charging of refrigerant according to the length of pipe connected at the site. When the entire refrigerant pipe length is within 7.5 meters, the additional charging is not needed.

Take the following steps for proper charging.

1. Refrigerant charge amount

Additional charging of refrigerant

Select the appropriate refrigerant charging amount from Table 1 and charge the refrigerant.

Write down the amount of extra refrigerant added in accordance with the precaution plate on the rear surface of the control box cover plate, as this is necessary for after-sales service.

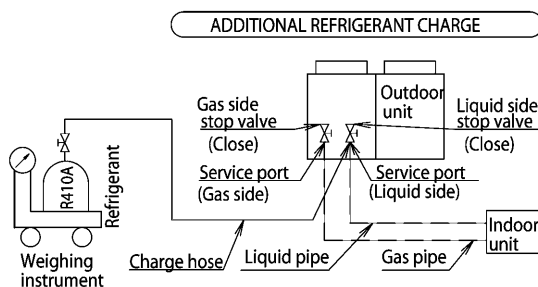


Table 1 Additional charging refrigerant amount

$$\begin{array}{l} \text{<OUTDOOR UNIT>} \rightarrow \text{RUR08,10,13N} \end{array} \rightarrow \begin{array}{|c|} \hline \text{ADDITIONAL REFRIGERANT} \\ \text{CHARGING AMOUNT} \\ \hline \text{kg} \\ \hline \end{array} = \left(\begin{array}{|c|} \hline \text{TOTAL LENGTH OF} \\ \text{LIQUID PIPE} \\ \hline \text{(m)} \\ \hline \end{array} - 7.5 \text{ (m)} \right) \times \begin{array}{|c|} \hline \text{ADDITIONAL REFRIGERANT} \\ \text{CHARGING AMOUNT PER 1m} \\ \hline 0.06 \text{ (kg/m)} \\ \hline \end{array}$$

$$\begin{array}{l} \text{<OUTDOOR UNIT>} \rightarrow \text{RUR15,18,20N} \end{array} \rightarrow \begin{array}{|c|} \hline \text{ADDITIONAL REFRIGERANT} \\ \text{CHARGING AMOUNT} \\ \hline \text{kg} \\ \hline \end{array} = \left(\begin{array}{|c|} \hline \text{TOTAL LENGTH OF} \\ \text{LIQUID PIPE} \\ \hline \text{(m)} \\ \hline \end{array} - 7.5 \text{ (m)} \right) \times \begin{array}{|c|} \hline \text{ADDITIONAL REFRIGERANT} \\ \text{CHARGING AMOUNT PER 1m} \\ \hline 0.09 \text{ (kg/m)} \\ \hline \end{array}$$

CAUTION

To persons in charge of piping work:

After finishing additional refrigerant charge, open the liquid side stop valve and the gas side stop valve (In case of RUR20N, the both gas side valve of (1) and (2)).
If the additional refrigerant charge is no need, open the liquid side stop valve and the gas side valve after finishing the vacuum drying

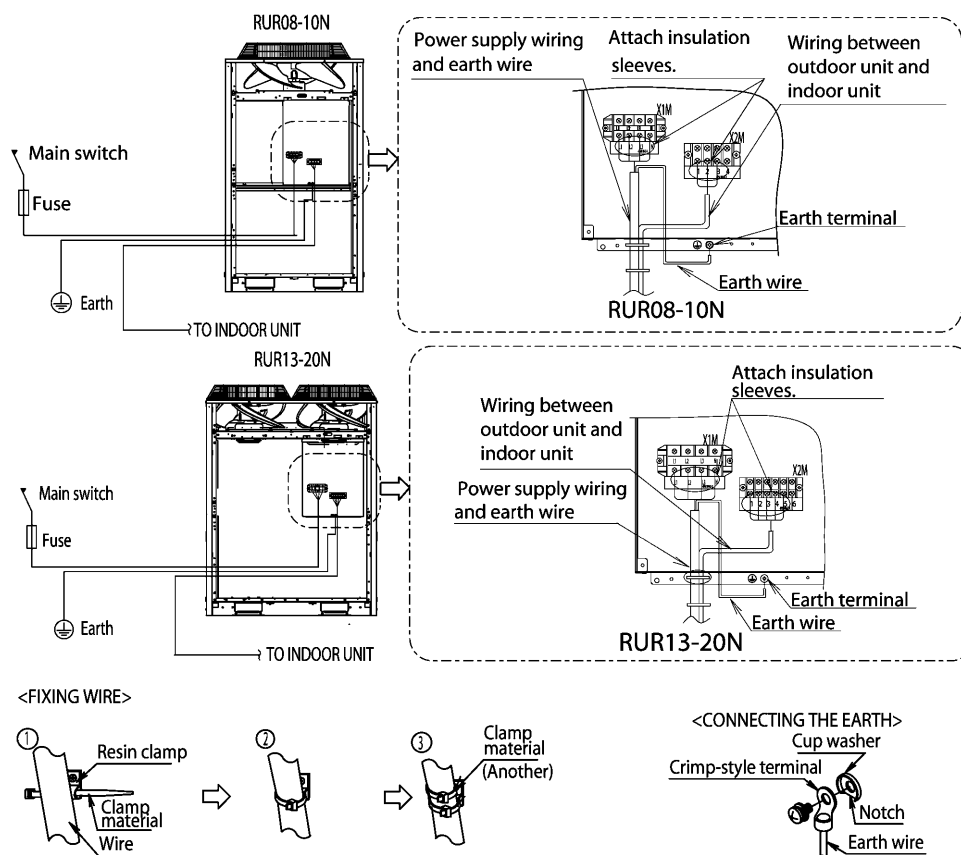
(Running the system with the valve closed may break the compressor.)

9 ELECTRICAL WIRING

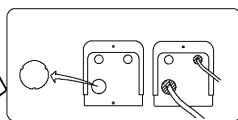
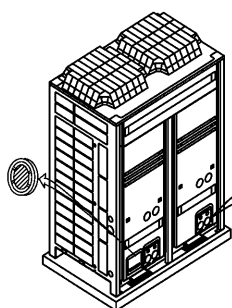
CAUTION Install the earth leakage circuit breaker.

- Electrical wiring must be carried out by qualified personnel. **WARNING**
- Before obtaining access to terminal devices, all supply circuits must be interrupted. **WARNING**
- Be sure to ground the air conditioner. **CAUTION**
- Do not connect the earth wire to a gas pipe, water pipe, lightning conductor or telephone earth wire. **CAUTION**
- Use only copper wires. **CAUTION**
- The wiring between the indoor unit and outdoor unit must be for 220~240V.
- Do not turn on the main switch until all the wiring is completed.
- The resistance of the grounding must not exceed 100 Ω.

- When performing electrical wiring, refer also to the wiring diagram affixed to the unit.
- Use the specified wires and fix them with clamps so that no external forces act on the terminals. For clamping, push the hook in tail end of the clamp to loosen it, pass the wires through it, then fasten the clamp.
- Clamp the wiring as shown below, taking care that the wires do not touch the piping. (especially high-pressure piping)
- For 3 phase models
Make sure to connect power supply cables in normal phase. If connected in reverse phase, abnormal sound of compressor will be happened or compressor will stop after run around 3 minutes . Change any two of the three power supply cables (L1, L 2, L 3) to correct phase.
(If the contact in the magnetic switch should be forcibly turned on while the equipment is inoperative,)
the compressor will be damaged by a fire. Never try to forcibly turn on the contact.
- Never squeeze extra wires into the unit.
- Protect the electric wiring with electric wiring pipes or tubes to prevent the edges of the knock holes from damaging it.
- Secure the electrical wiring with the included clamping material as shown in the figure below.



1PN10565C



<TAKING WIRING>

- The power wiring and ground wiring are passed out from the power wiring hole on the sides, the front (knock hole) or the bottom frame (knock hole).
- The transmission wiring is passed out from the wiring hole (knock hole) on the front of the unit or from a piping hole.

Note

- Open the knock holes with a hammer or the like.
- After knocking out the holes, we recommend you remove any burrs and paint them using the repair paint to prevent rusting.
- When passing wiring through the knock holes, remove burrs around the knock holes and protect the wiring with protective tape. (Refer to the Figure)
- If small animals might enter the unit, block off any gaps (hatching parts in left figure) with material (field supply).

Observe the notes mentioned below when wiring to the power supply terminal board.

(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.)

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
- When connecting wires of the same gauge, connect them according to the righthand figure.
- In wiring, make certain that prescribed wires are used, carry out complete connections, and fix the wires so that outside forces are not applied to the terminals.

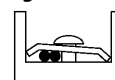
Round crimp-style terminal



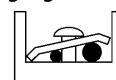
Connect wires of the same gauge to both side.



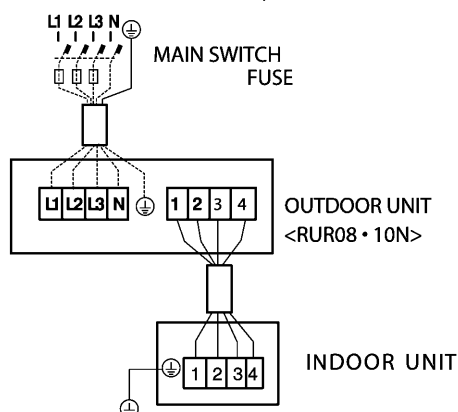
Do not connect wires of the same gauge to one side.



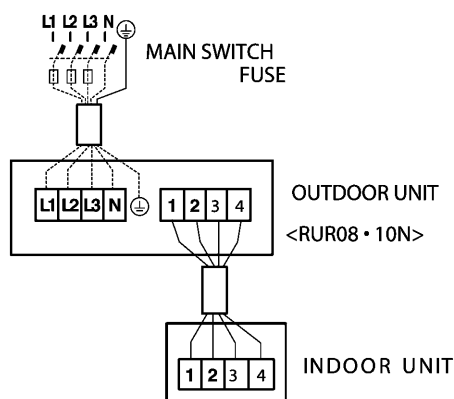
Do not connect wires of different gauges.



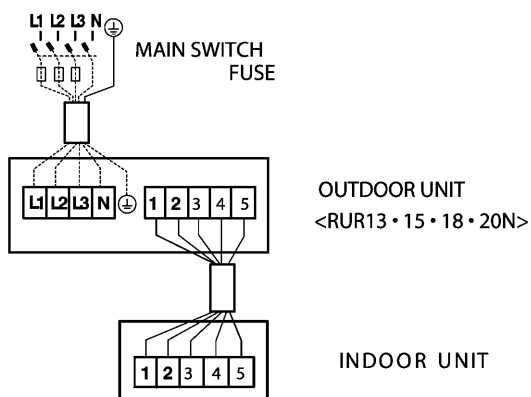
In case of connection with AFVR08 • 10N, FVGR08 • 10N



In case of connection with AFDR08 • 10N, AFVPR10N, FDR08 • 10N, FVPGR10N



In case of connection with AFDR13・15・18・20N, AFVPR13・15・18・20N,
FDR13・15・18・20N, FVPGR13・15・18・20N



Model combination		Power supply (for outdoor unit)					Wire type of wiring between the units
Outdoor unit	Indoor unit	Voltage (V)	Phase /Frequency	Field fuse	Wire type	Size	
RUR08N	AFVR08N, FVGR08N	380-415	3N~/50 Hz	35 A	H05VV-U5G	Wire size must comply with the application local and national code	H05VV-U4
	AFDR08N, FDR08N			30 A			H05VV-U4
RUR10N	AFVR10N, FVGR10N			45 A			H05VV-U4
	AFVPR10N, AFDR10N			40 A			H05VV-U4
	FVPGR10N, FDR10N			40 A			H05VV-U4
RUR13N	AFVPR13N, AFDR13N			30 A			H05VV-U5
	FVPGR13N, FDR13N			30 A			
RUR15N	AFVPR15N, AFDR15N			40 A			
	FVPGR15N, FDR15N			40 A			
RUR18N	AFVPR18N, AFDR18N			45 A			
	FVPGR18N, FDR18N			45 A			
RUR20N	AFVPR20N, AFDR20N			60 A			
	FVPGR20N, FDR20N			60 A			

- Instead of fuse, use circuit breaker.
- Refer to the engineering data for details.

⚠ CAUTION

To persons in charge of electrical wiring work:

- Do not operate the unit until the refrigerant piping is complete.
(Running it before the piping is ready will break the compressor.)

1PN10565C

10 TEST RUN PROCEDURE

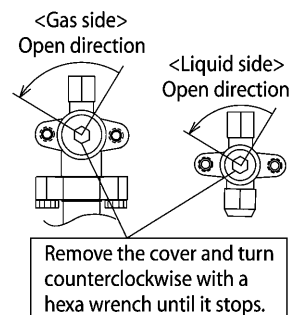
- Be sure to fully open the liquid-side and gas-side stop valves.
- For details on test operation, refer to the Installation Manual of the indoor unit.

Pre-run checks

	Item to check
<ul style="list-style-type: none"> • Power supply wiring • Wiring between units • Ground wire 	<ul style="list-style-type: none"> • Is the wiring as per the wiring diagram? Make sure no wiring has been forgotten and that there are no missing phases or reverse phases. • Is the unit properly grounded? • Are any of the wiring attachment screws loose? • Is the insulation resistance at least 1MΩ? • Use a 500V mega-tester when measuring insulation. • * Do not use a mega-tester for circuits which are not 220-240V.
<ul style="list-style-type: none"> • Refrigerant piping 	<ul style="list-style-type: none"> • Is the size of the piping appropriate? • Is the insulation material for the piping attached securely? Are both the liquid and gas pipes insulated? • Are the stop valves for both the liquid side and the gas side open?
<ul style="list-style-type: none"> • Extra refrigerant 	<ul style="list-style-type: none"> • Did you write down the extra refrigerant and the refrigerant piping length?

Test run

1. Make sure the liquid and gas stop valves are open.
<Be sure to close the outside cover before operation, as not doing so can cause electric shock.>
2. Turn on the remote controller or control panel (refer to indoor unit installation manual)
3. Make sure the compressor is not starting and stopping during the test-run by listening. If it is starting and stopping, immediately stop the machine using the remote control, and check the refrigerant level, etc. There may be some sort of malfunction.
 - There is a safety device against malfunctions in the compressor. If a malfunction occurs (including closed stop valves or no gas), the internal safety device may be activated due to the temperature in the compressor rising. Once this happens, the unit will not be able to be run until the temperature in the compressor drops (between 30 minutes and 2 hours), but this does not mean the machine is broken. Make sure the unit not being run without gas due to a closed stop valve or a gas leak.



1PN10565C

Part 3

Detail information of options

3

1. Accessories.....	142
1.1 Indoor unit	142
1.2 Outdoor unit.....	142
2. Remote controller.....	143
2.1 BRC1NU64 — Wired remote controller.....	143
3. RUR-N.....	149
3.1 KKPJ5F180 — Central drain plug	149
3.2 KWC26C280 / KWC26C450 — Central drain pan kit.....	150
4. Details of DTA107A55 (Central control adaptor kit)	154
4.1 Features	154
4.2 Combination of remote controllers with DTA107A55	154
4.3 Functions available by each combination.....	155
4.4 Dimension	156
4.5 Wiring diagram with optional central control adaptor	157
4.6 Installation manual	162
4.7 BRC1C62 — LCD wired remote controller.....	165

1. Accessories

1.1 Indoor unit

1.1.1 FDR-N

Optional accessories

Name of option		Model							
		FDR05NY1	FDR06NY1	FDR08NY1	FDR10NY1	FDR13NY1	FDR15NY1	FDR18NY1	FDR20NY1
Remote controller	Wired	BRC1NU64							
Central control adaptor kit		DTA107A55							
LCD remote controller (Note 1)	Wired	BRC1C62							
intelligent touch controller (Note 1)		DCS601C51							
Central remote controller (Note 1)		DCS302CA61							
Unified ON/OFF controller (Note 2)		DCS301BA61							
Schedule timer (Note 2)		DST301BA61							
Remote sensor (for indoor temperature) (Note 2)		KRCS01-1B							

C : 3D063589C

- Note:**
1. Need to use central control adaptor kit for option connection.
 2. Central control adaptor kit and LCD remote controller is necessary for option connection.

1.2 Outdoor unit

1.2.1 RUR-N

Optional accessories

Name of option	Model							
	RUR05NY1	RUR06NY1	RUR08NY1	RUR10NY1	RUR13NY1	RUR15NY1	RUR18NY1	RUR20NY1
Central drain plug	KKPJ5F180		—					
Central drain pan kit	—		KWC26C280		KWC26C450			

4D063706

2. Remote controller

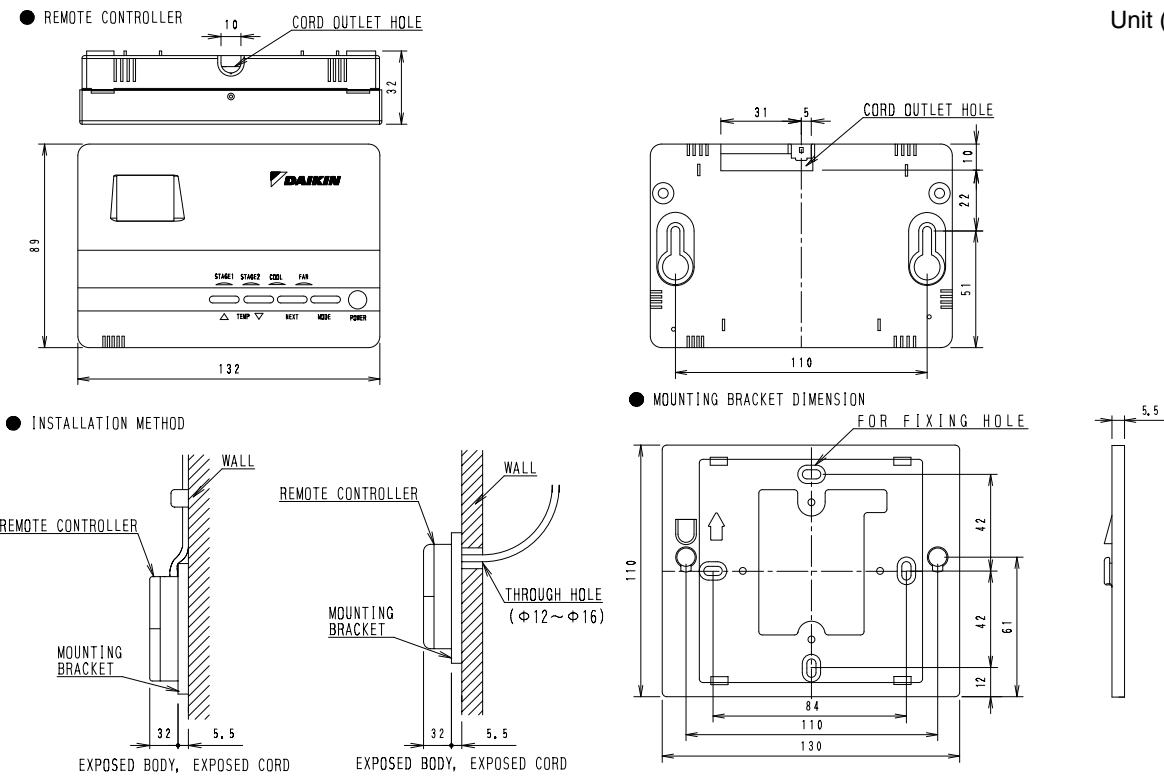
2.1 BRC1NU64 — Wired remote controller

2.1.1 BRC1NU64



3

2.1.2 Dimensions



3D063005

2.1.3 Names and functions of the operating section (Fig. 1)

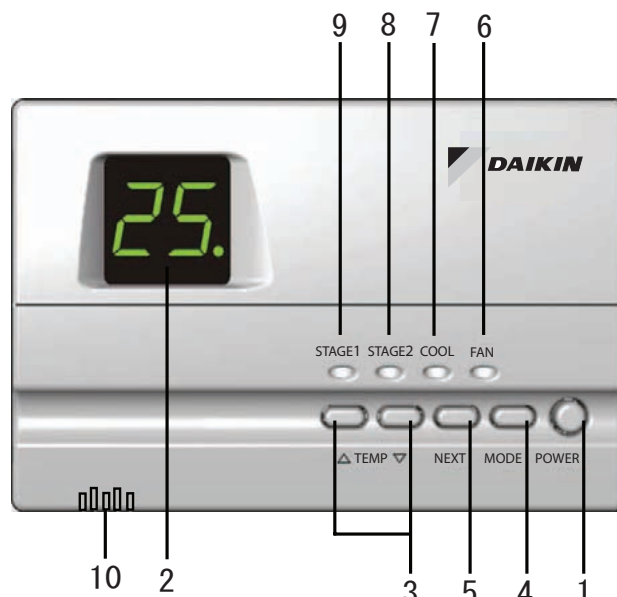


FIG. 1

1. Power

The system can be turned on /off by pressing POWER button.

2. Temperature scale

Degree C or F can be selected.

3. Temperature setting

The setting temperature can be set in a range of 18 - 30°C (64-86 F).

4. Mode setting

Operating mode can be changed by pressing MODE button.

5. Next setting

To confirm setting during programing press this NEXT button.

6. Fan indicator lamp (green)

This lamp stays lit while fan mode function is set.

7. Cool indicator lamp (green)

This lamp stay lit while cool mode function is set.

8. Compressor 2 indicator lamp (green) (Stage 2)

This lamp stay lit while 2nd compressor runs.

9. Compressor 1 indicator lamp (green) (Stage 1)

This lamp stay lit while 1st compressor runs.

10. Temperature sensor

2.1.4 Operation procedure

- To protect the unit, turn on the main power switch 6 hours before operation.

■ POWER button

Press "POWER" to turn on/off air conditioner.

■ MODE button

Press MODE to change mode of operation from FAN, COOL
Operating mode will be displayed on the remote.

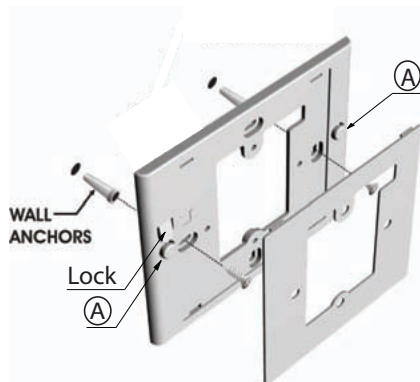
■ TEMPERATURE setting button

Press TEMP ▲▼ to change setting temperature.

2.1.5 Installation

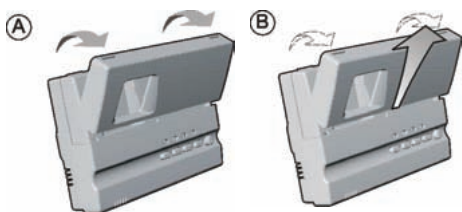
DAIKIN**INSTALLATION MANUAL****Wired Remote Controller Kit****MODEL : BRC1NU64****3****Mounting and Wiring**

1. Using the mounting bracket base as a guide, mark two mounting holes on the wall. Drill two mounting holes. Place anchors (provided) into the holes until flush with the hole. Position bracket on the wall and secure it using mounting screws (provided). Be sure that bracket arrow mark position upward. Mount remote controller to the mounting bracket by fitting it into (A) and slide downward until it secured by lock.

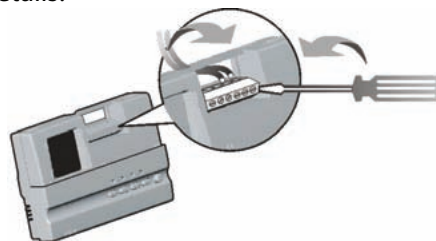
**Fig. 1. Mounting bracket on wall.**

Note : Remote controller can be removed using flat screw driver by pressing lock and pushing it upward.

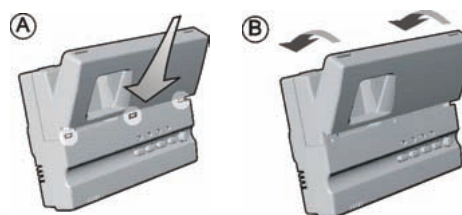
2. Lift and open the cover, pull it up to remove. See Fig. 2.

**Fig. 2. Remove the cover.**

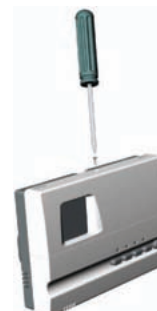
3. Use cable size 0.5-1 mm² connect the wires from indoor unit to the remote controller. See wiring diagram of indoor unit for location of remote controller terminals and refer to Fig. 6. for details.

**Fig. 3. Connect system wires to remote controller terminals (strip wire \approx 8 mm.).**

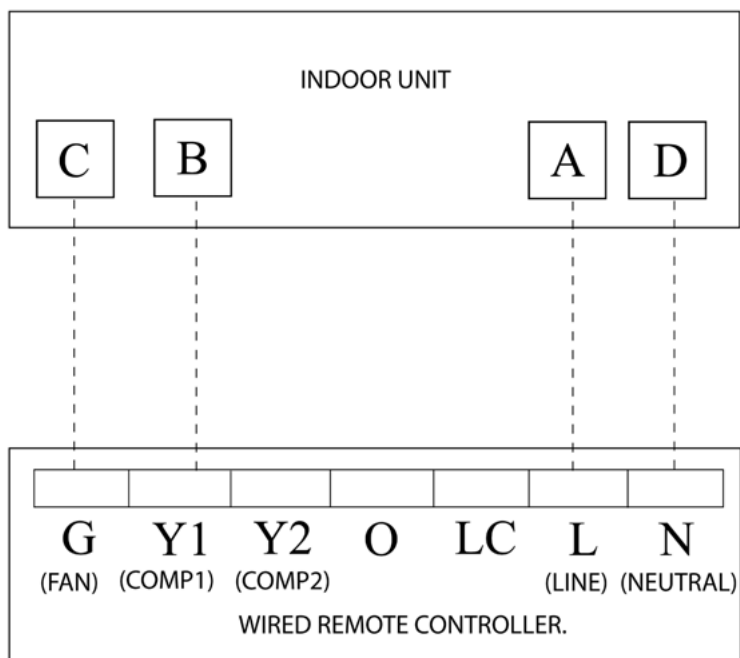
4. Put the cover back. See Fig. 4.

**Fig. 4. Put the cover back.**

5. Tighten screw to secure the cover. See Fig. 5.

**Fig. 5. Tighten the screw.**

For FD(R)05~10 and AFD(R)05~10 type



For FD(R)13~20 and AFD(R)13~20 type

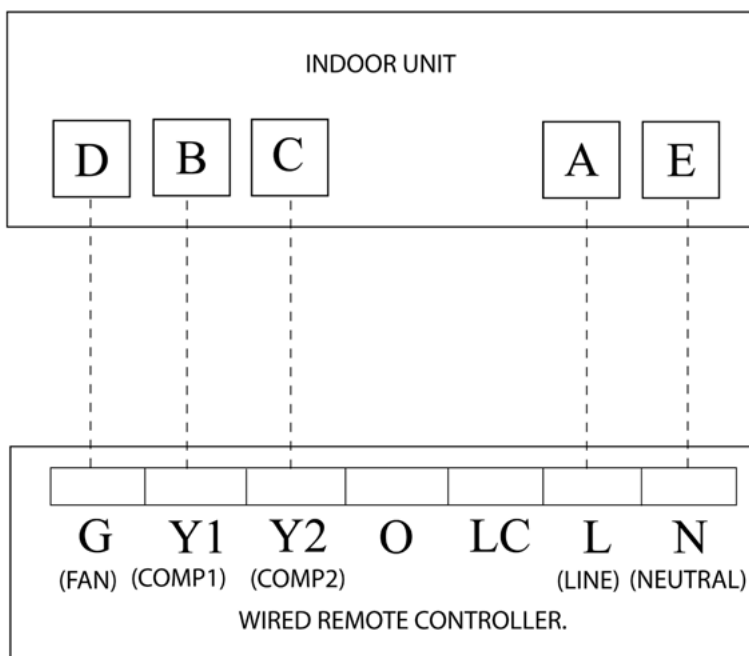


Fig. 6. Wiring connection

FEATURES

1. Power

The system can be turned on /off by pressing POWER button.

2. Temperature scale

Degree C or F can be selected.

3. Temperature setting

The setting temperature can be set in a range of 18 – 30°C (64-86 °F).

4. Mode setting

Operating mode can be changed by pressing MODE button.



5. Minimum cooling setpoint

The user can program the minimum cooling setpoint for energy saving purpose.

6. Dead band setting

The user can select the dead band temperature for Auxiliary to be 1, 2, 3, 4 °C (or 2, 3, 4, 5, 6, 7, 8 °F). This dead band is defined as follows.

Single compressor with unloader

COOL MODE	P2 (STAGE1)	P3 (STAGE2)	P4 (UNLOADER)
$T_{room} \leq T_{set}$	OFF	OFF	OFF
$T_{set} + 1 \leq T_{room} \leq T_{set} + \Delta T$	ON	OFF	ON
$T_{room} > T_{set} + \Delta T + 1$	ON	ON	OFF

Two compressors with Main compressor change over feature

COOL MODE	1 ST OPERATION		2 ND OPERATION	
	COMP 1 P2 (STAGE1)	COMP 2 P3 (STAGE2)	COMP 1 P2 (STAGE1)	COMP 2 P3 (STAGE2)
$T_{room} \leq T_{set}$	OFF	OFF	OFF	OFF
$T_{set} + 1 \leq T_{room} \leq T_{set} + \Delta T$	ON	OFF	OFF	ON
$T_{room} \geq T_{set} + \Delta T + 1$	ON	ON	ON	ON

Note : ΔT = Dead band Temperature.

7. Non-volatile memory

All parameters are saved in a non-volatile memory after 15 seconds.

8. Auto restart (option)

For Auto restart model (set in Program P5), during a power interruption controller will automatically resume its operation.

For Non-auto restart model, during a power interruption the user must press the power button to restart the controller.

9. Watchdog

There is a watchdog circuit to watch the operation of the microprocessor.

10. Compressor delay protection

Each time the compressor is off, there will always be a minimum of 3-minute delay before the compressor can restart. In case of power interruption, the system will have the compressor delay in the range of 3-4 minutes in random order.

Auxiliary compressor can turn on after main compressor turns on at least 1 minute.

11. Main compressor change over (option)

For 2-compressor model (set in Program P4), when both compressors are off, they will switch an operation duty between main and auxiliary on the next operation.

12. Installer mode

Installer mode is used to program all parameters to fit with the system used. There are 4 programs.

Program	Setting	Remark
P1	°C / °F display	C = °C display (default) F = °F display
P2	Dead band setting	1, 2, 3 or 4 °C (2, 3, 4, 5, 6, 7 or 8 °F) (1 °C default)
P3	Minimum cooling set point	18 – 30 °C (64 – 86 °F) (18 °C default)
P4	Configuration	1C – single compressor with unloader (default) 2C – 2 compressor with main comp change over feature
P5	Auto restart	0 – Non auto restart (default) 1 – Auto restart

Programming can be done by

- Press and hold \triangle , ∇ and **NEXT** buttons at the same time for 3 seconds to enter the installer mode. Display shows P1-P5 in blinking.
- Press \triangle or ∇ button for program selection.
- Press **NEXT** button to confirm.
- Press \triangle or ∇ button for setting.
- Press **NEXT** button to confirm and enter to the next program.
- Repeat steps (b) to (e) for other setting.

Note :

- If no button is pressed within 15 seconds, it will exit the installer mode automatically and new setting will be saved in memory.
- If "MODE" or "POWER" button is pressed in programming period, it will exit the installer mode but setting will not be saved in memory.

3PN10253-1A

3. RUR-N

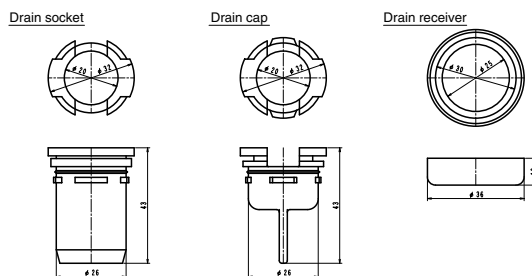
3.1 KKPJ5F180 — Central drain plug

KKPJ5F180



Dimensions

Unit:mm



J : D3K1342A

Model	KKPJ5F180
Item	
Connecting drain hose	φ25 (inside diameter)

Installation

DAIKIN Air Conditioners

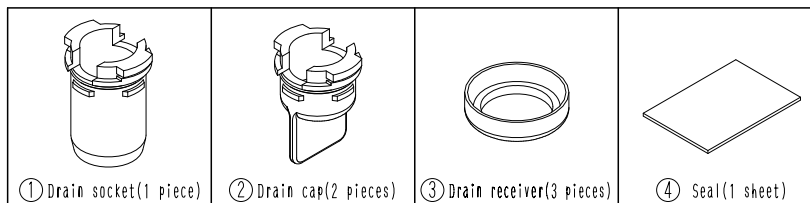
Central Drain Plug Installation Manual

3P066795-1B

<KKPJ5F180>

■ Use this plug to connect a drain hose to dispose the drain from the outdoor unit.

1 Before Installation Check that this Kit contains the following parts.



2 Installation Procedure

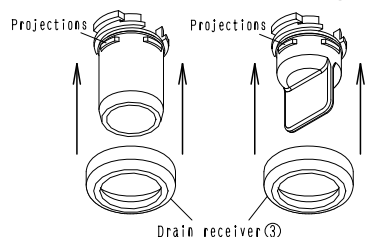
• Please refer to the installation manual of outdoor unit.

1. Insert drain receiver③ onto drain socket① and drain cap② beyond 4 projections around drain socket and drain cap.

Refer to a right picture(Note:2)

Drain socket ①

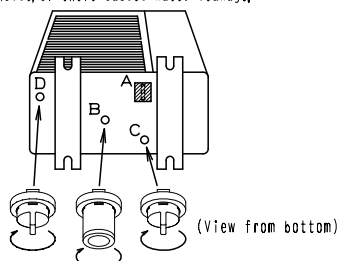
Drain cap ②



2. Insert drain socket and drain caps into their matching drain hole; Drain socket ① into drain hole B and drain caps ② into drain hole C and D. After insertion, turn them about 40° clockwise.

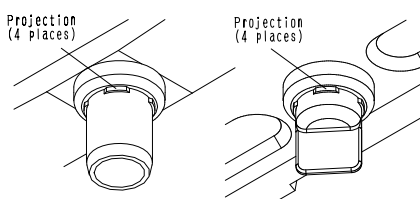
Note: 1

Note: 1
Be sure not to insert them into wrong drain
holse, or there causes water leakage.



Note:2

NOTE 2
Please check whether drain receiver③ is caught in four projections of drain socket① and drain cap② correctly. It will become the cause of the leak they are not attached correctly.



3. Connect vinyl hose on the market (internal diameter of 25mm) to drain socket ①.
(If the house is too long and hangs down, fix it carefully to prevent the kinks.)
4. Affix seals ④ to part A as shown on the above drawing,
(It is unnecessary when it is the Model which does not have opening in A.)
5. After join drainsocket ① and draincap ②, please check whether there is not any leak to A and the other parts by pouring water.

Note:3

- Note:3**
1. 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.
 2. Do not use this option in the cold latitudes.
At bottom frame, drained water is frozen up.

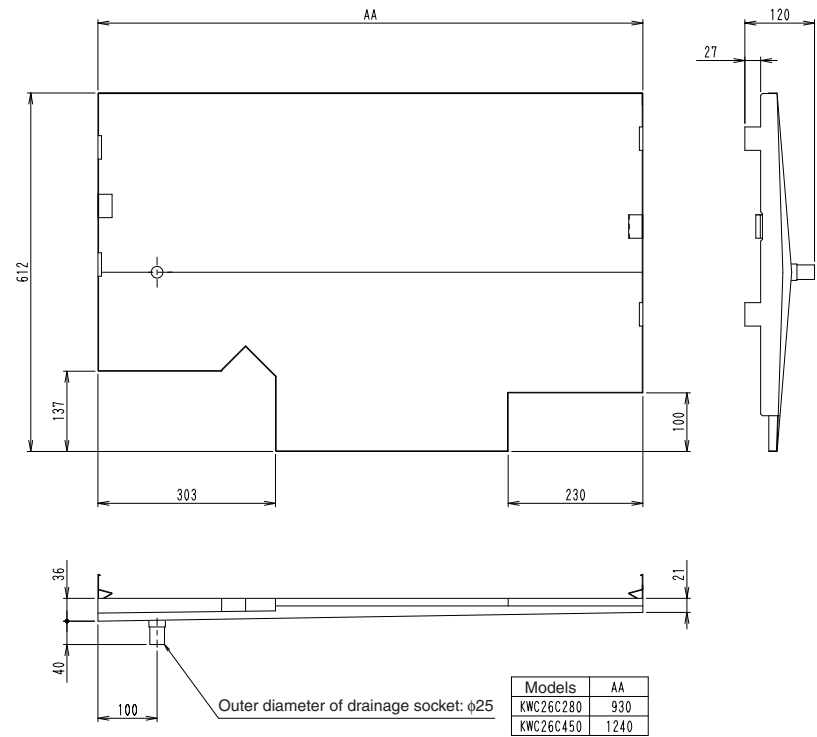
3P066795B

3.2 KWC26C280 / KWC26C450 — Central drain pan kit

3.2.1 Dimensions

KWC26C280 / KWC26C450

Unit (mm)

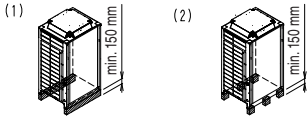


Specification:

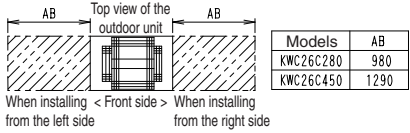
1. Material: Steel plate (SGCC)
2. Coating color: Ivory (5Y7.5/1)

Notes:

1. In order to install this kit, the outdoor unit needs to have the at least 150 mm high beam or independent base. (See the figures below.)



2. In order to install this kit, the outdoor unit needs to have a mounting space as shown in the figure below on either right or left side.



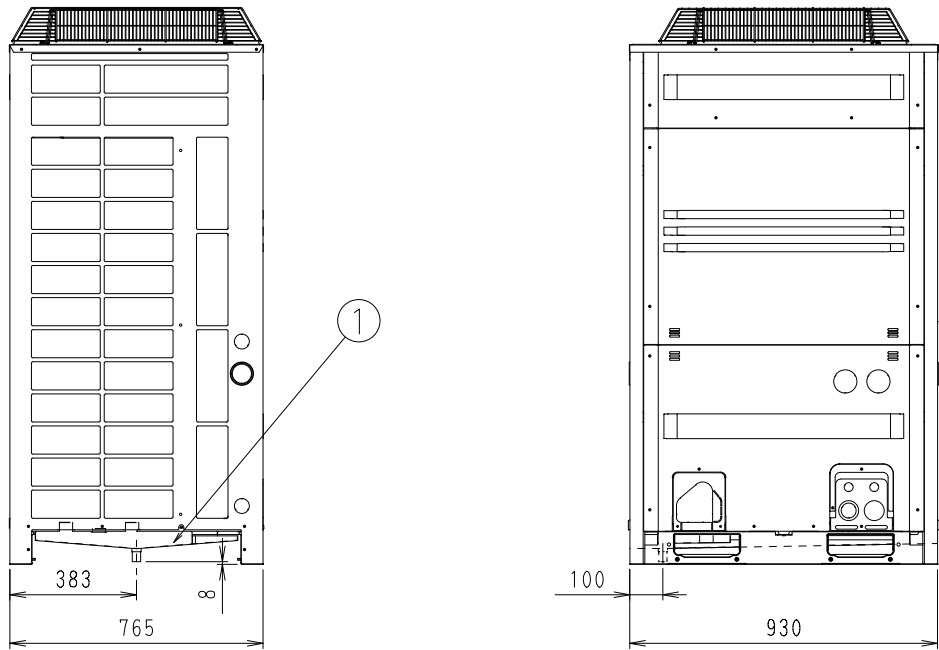
- * This kit can be installed only from the right side when the under-floor piping has been provided already.
- ** This kit can be installed only from the left side when the conduit has been provided already.

J : D3K05259A

3.2.2 Dimensions with outdoor unit

KWC26C280 with RUR08NY1 / RUR10NY1

Unit (mm)

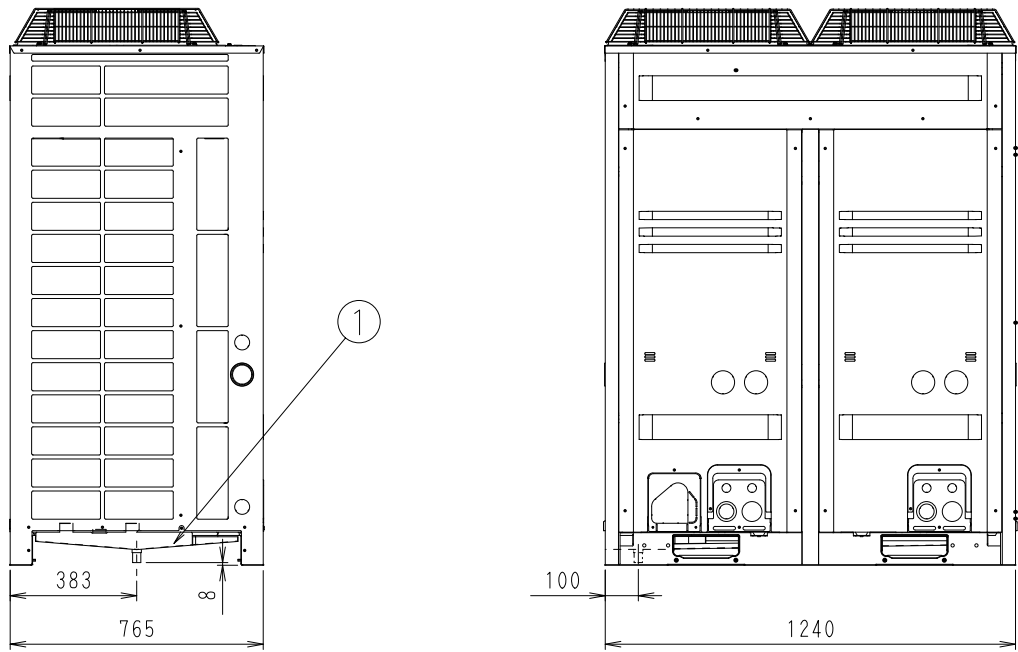


1	Central drain pan kit	KWC26C280
No.	Parts name	Remark

3D062888

KWC26C450 with RUR13NY1 / RUR15NY1 / RUR18NY1 / RUR20NY1

Unit (mm)

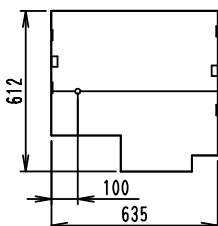
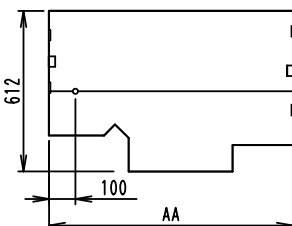
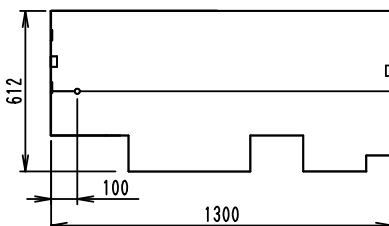


1	Central drain pan kit	KWC26C450
No.	Parts name	Remark

3D062889

3.2.3 Installation

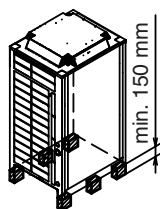
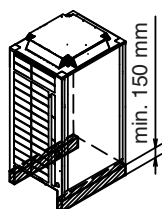
Components

Name		① Collective Drainage Pan Kit								
Outline			 <table><tr><td></td><td>AA</td></tr><tr><td>KWC26C280(E)(H)</td><td>930</td></tr><tr><td>KWC26C450(E)(H)</td><td>1240</td></tr></table>		AA	KWC26C280(E)(H)	930	KWC26C450(E)(H)	1240	
			AA							
		KWC26C280(E)(H)	930							
		KWC26C450(E)(H)	1240							
		Qty		KWC26C160(E)(H)	1	—	—			
		KWC26C280(E)(H)	—	1	—					
		KWC26C450(E)(H)	—	1	—					
		KWC25C450(E)(H)	—	—	1					

Note In order to install this kit, the outdoor unit needs to have the beam or independent base.

(1) Beam base

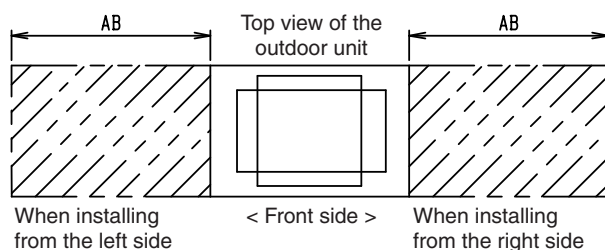
(2) Independent base



* Check the **mounting space** before installation.

Mounting space

In order to install this kit, the outdoor unit needs to have a mounting space as shown in the figure below on either right or left side.



	AB
KWC26C160(E)(H)	685
KWC26C280(E)(H)	980
KWC26C450(E)(H)	1290
KWC25C450(E)(H)	1350

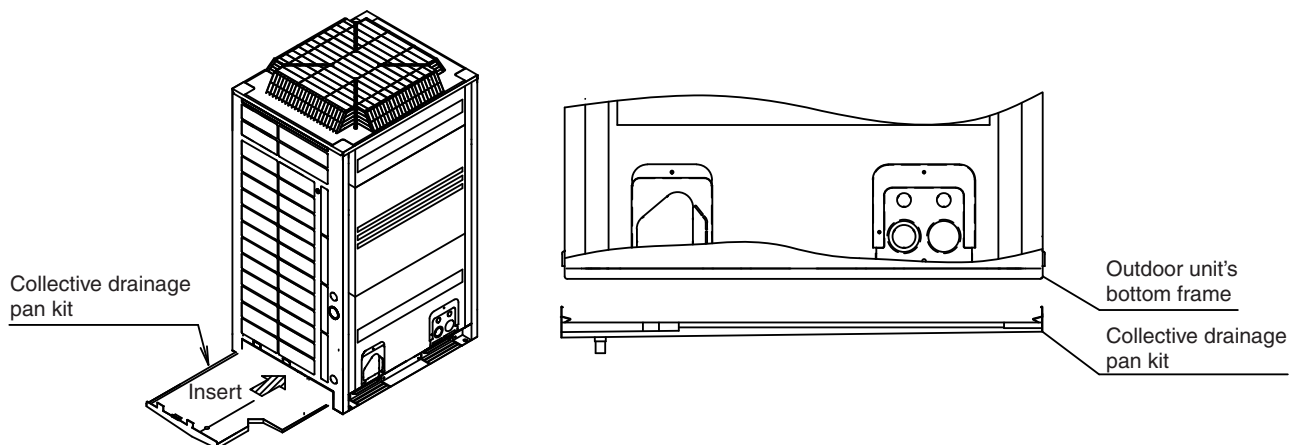
Notes:

1. This kit can be installed only from the right side when the under-floor piping has been provided already.
2. This kit can be installed only from the left side when the conduit has been provided already.

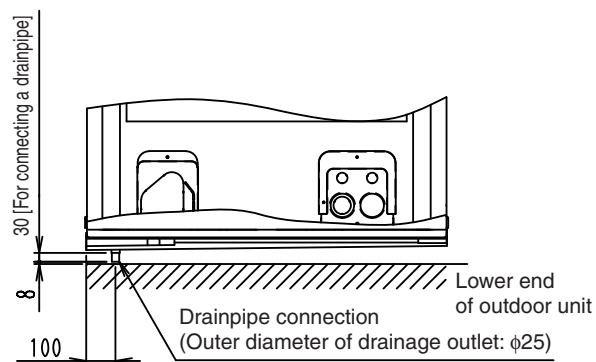
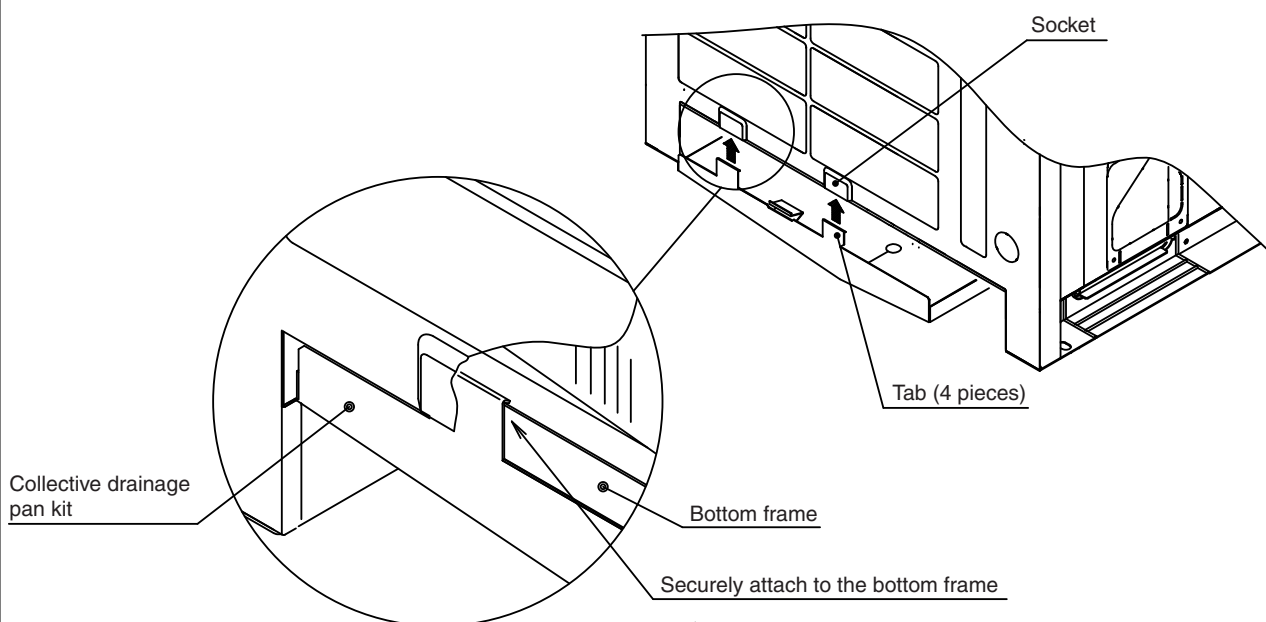
J : 3K017824A

1 Mounting Procedures

1. Place the kit below the outdoor unit's bottom frame so that the cutout part of the kit is on the front side.



2. Apply the tabs of the kit to the sockets on the outdoor unit, and then push up the kit until the tabs are securely held by the bottom frame.



< View of Installed Kit >

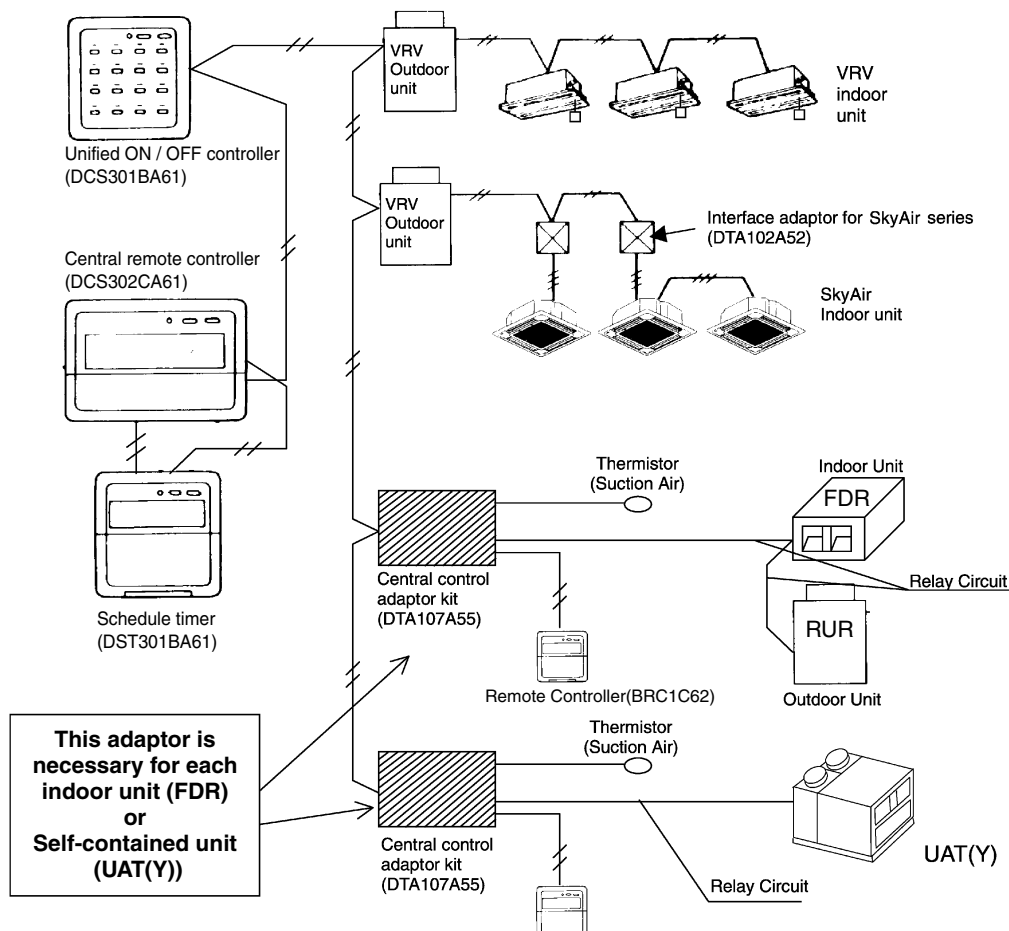
J : 3K017824A

4. Details of DTA107A55 (Central control adaptor kit)

4.1 Features

By adopting this optional kit, you can control FDR and UAT(Y) by VRV controller.

[Example of Combination A] Refer to 4.2 and 4.3.



Applicable model : FDR05-20N

4.2 Combination of remote controllers with DTA107A55

The following 7 combinations can be selectable.

Model	Name	A	B	C	D	E	F	G
DTA107A55	Central Control Adaptor Kit	○	○	○	○	○	○	○
BRC1C62	Remote Controller	○	▲	▲	○	○	▲	○
DCS302CA61	Central Remote Controller	○	○	○	—	—	○	—
DST301BA61	Schedule Timer	○	○	—	○	—	—	—
DCS301BA61	Unified ON/OFF Controller	○	—	○	—	○	—	—

○ : Required

▲ : Required only for address setting of the unit

(P0020)

4.3 Functions available by each combination

Functions	A	B	C	D	E	F	G
1.Operation and Monitoring ON/OFF	○	○	○	○	○	○	○
2.Setting and monitoring of Operation mode	○	○	○	○	○	○	○
3. Temperature setting	○	○	○	○	○	○	○
4. Forced shut down	○	○	○	—	○	○	○
5. Group control (*1)	○	○	○	○	○	○	○
6. Indication of alarm (*4)	○	○	○	○	○	○	○
7. Setting of Timer	○	○	○	○	○	○	○
8. Setting and cleaning sign of Air filter	○	○	○	○	○	○	○
9.ON/OFF group control (*2)	○	—	○	—	○	—	—
10. Scheduled timer	○*5	○*5	—	○*3	—	—	—

*1: It can control up to 128 units.

*2: It can control up to 16 groups. (Max.128 units)

Combination of controllers (Using number and Max. groups)

Model	Name	Using number	Max. groups to be controlled
DCS302CA61	Central Remote Controller	1	64
		2	128
DST301BA61	Schedule Timer	1	128
DCS301BA61	Unified ON/OFF Controller	1	16
		8	128

*3: 2 Setting of ON/OFF per day is available by the Schedule Timer.

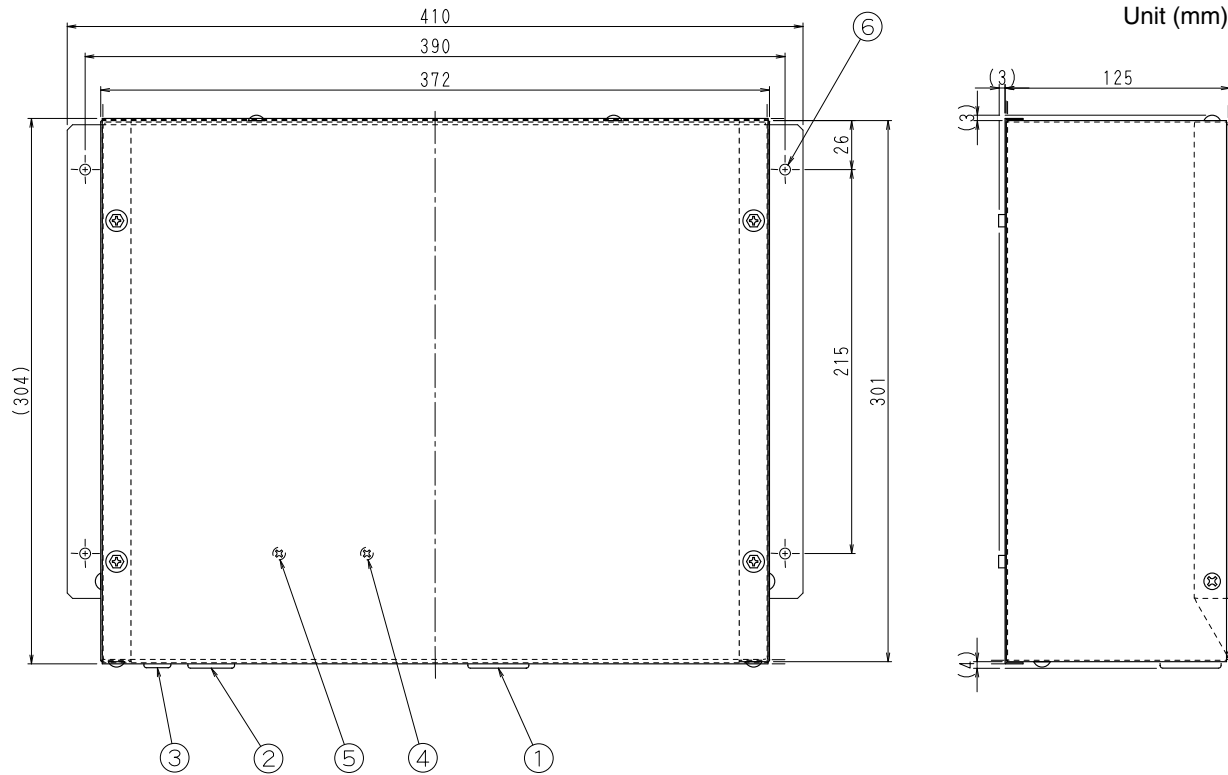
(It can set $2 \times 7 = 14$ times per week.)

*4: Error code:"A0" only (Unified display of indoor unit malfunction)

*5: Using the Schedule Timer with the Central Remote Controller makes it possible to set ON/OFF time four times a day.
 (Four times of ON/OFF time can be set up per day, because two settings of ON/OFF time are possible to one Schedule Timer, and two Schedule Timers can be registered into a Central Remote Controller.)

(P0021)

4.4 Dimension

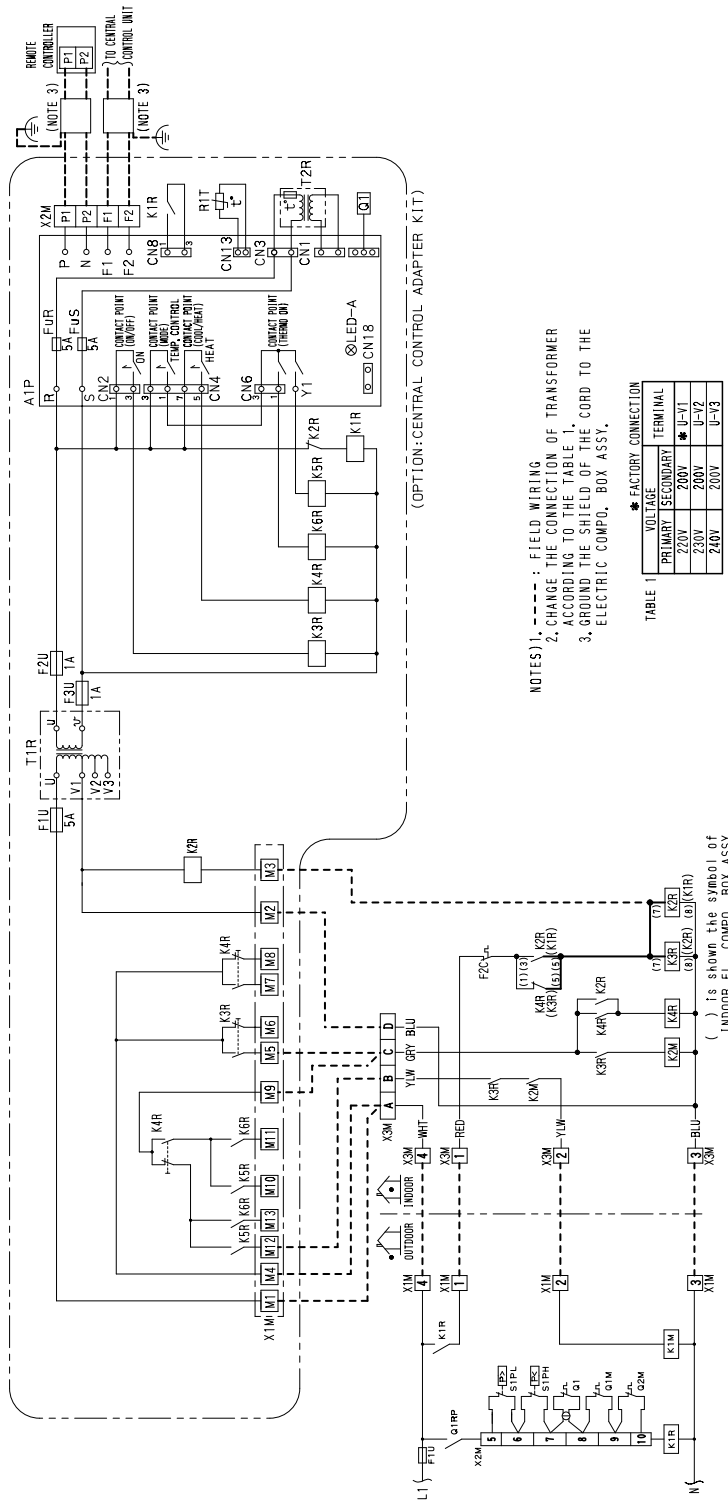


6	FIXING HOLE	4- ϕ 7 (USING M5 BOLTS)
5	EARTH TERMINAL (FOR SHIELD CODE)	M4 (IN THE EL_COMPO,BOX ASSY)
4	EARTH TERMINAL (FOR EL_COMPO,BOX ASSY)	M4 (IN THE EL_COMPO,BOX ASSY)
3	WIRING INTAKE (FOR THERMISTOR)	(ϕ 8)
2	WIRING INTAKE (FOR CONTROLLER)	(ϕ 15)
1	WIRING INTAKE (FOR AIR CONDITIONER)	(ϕ 20)
ITEM	PARTS NAME	REMARK

3D019850

4.5 Wiring diagram with optional central control adaptor

(FDR05NY1 + RUR05NY1) + DTA107A55



NOTES). - - - - : FIELD WIRING
2. CHANGE THE CONNECTION OF TRANSFORMER
ACCORDING TO THE TABLE 1.
3. AROUND THE SHIELD OF THE CORD TO THE
ELECTRIC COMPO, BOX ASSY.

TABLE 1

* FACTORY CONNECTION	
VOLTAGE	TERMINAL
220V	200V
230V	200V
240V	200V

CENTRAL CONTROL ADAPTER KIT

A1P	PRINTED CIRCUIT BOARD
F1U	FUSE (250V 5A)
F2U • F3U	FUSE (250V 1A)
K1R	MAGNETIC RELAY (ALARM)
K2R	MAGNETIC RELAY (ALARM)
K3R	MAGNETIC RELAY (OPERATION)
K4R	MAGNETIC RELAY (COOL/HEAT)
K5R	MAGNETIC RELAY
K6R	MAGNETIC RELAY
R1T	THERMISTOR
T1R	TRANSFORMER
T2R	TRANSFORMER
X1M • X2M	TERMINAL STRIP

AIR CONDITIONER

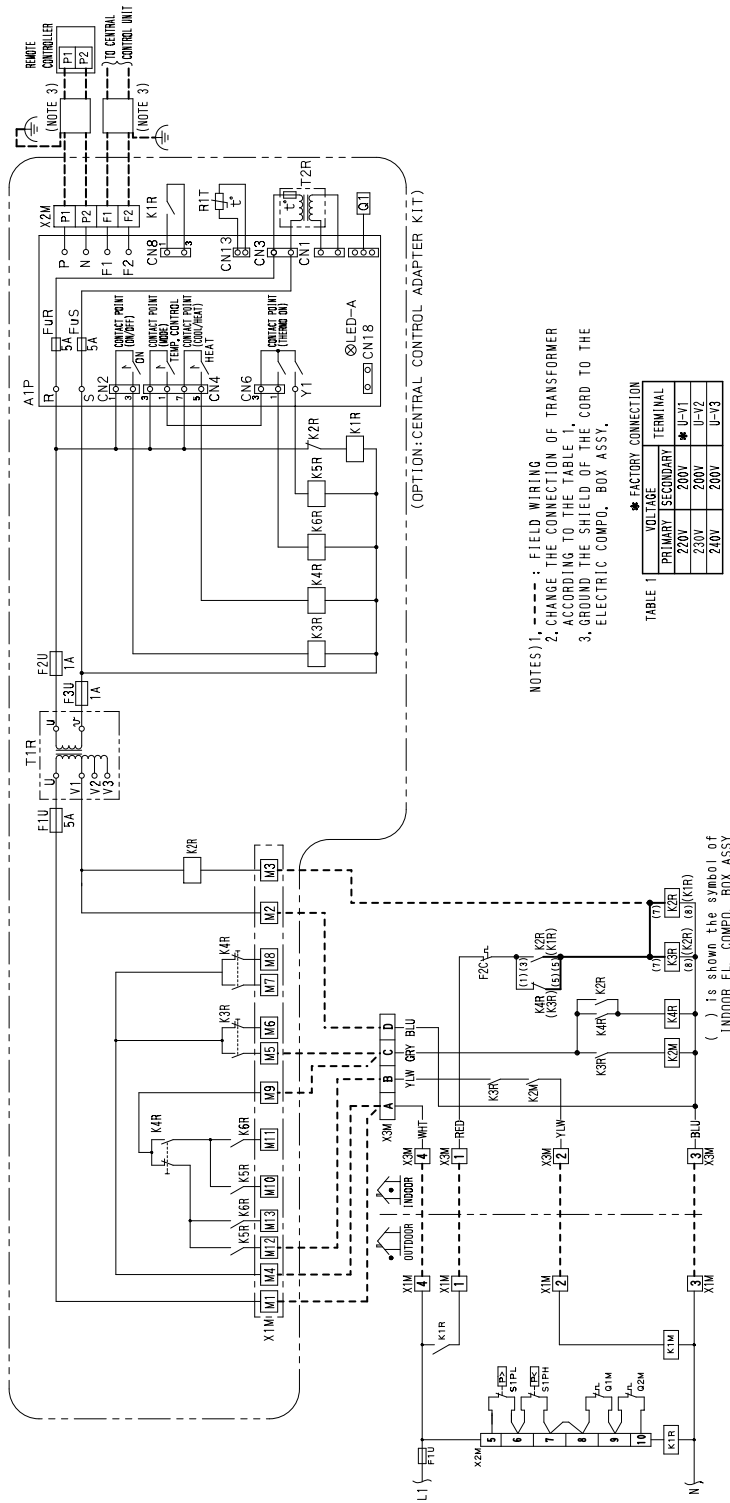
F1U	FUSE (250V 5A)
K1M	MAGNETIC CONTACTOR (M1C)
K1R	MAGNETIC RELAY (ALARM)
Q1M	THERMO SWITCH (M1F)
Q2M	THERMO SWITCH (M2F)
Q1	THERMO SWITCH (DISCHARGE PIPE)
Q1RP	REVERSE PHASE PROTECTOR
S1PL	PRESSURE SWITCH (LOW)
S2PH	PRESSURE SWITCH (HIGH)
X1M • X2M	TERMINAL STRIP
F2C	OVERCURRENT RELAY (M3F)
K2M	MAGNETIC CONTACTOR (M3F)
K2R • K3R	MAGNETIC RELAY (ALARM)
K4R	MAGNETIC RELAY (OPERATION)
X3M	TERMINAL STRIP

APPLICABLE MODEL

RUR05NY1	FDR05NY1
RUR05NY1S	AFDR05NY1

3D063483A

(FDR06NY1 + RUR06NY1) + DTA107A55



NOTES) 1. --- : FIELD WIRING
2. CHANGE THE CONNECTION OF TRANSFORMER
ACCORDING TO THE TABLE 1.
3. GROUND THE SHIELD OF THE CORD TO THE
ELECTRIC COMPO. BOX ASSY.

TABLE 1	
* FACTORY CONNECTION	
VOLTAGE	TERMINAL
PRIMARY	SECONDARY
200V	200V
230V	200V
240V	200V

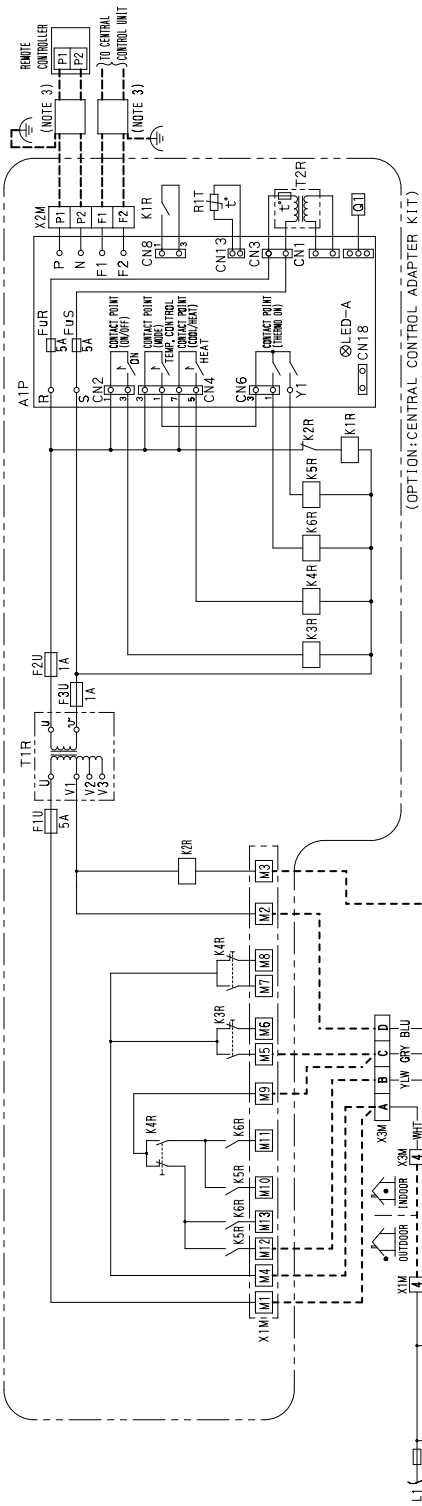
AIR CONDITIONER	
F1U	FUSE (250V 5A)
K1M	MAGNETIC CONTACTOR(M1C)
K1R	MAGNETIC RELAY(ALARM)
Q1M	THERMO SWITCH (M1F)
Q2M	THERMO SWITCH (M2F)
S1PL	PRESSURE SWITCH (LOW)
S2PH	PRESSURE SWITCH (HIGH)
X1M • X2M	TERMINAL STRIP
F2C	OVERCURRENT RELAY(M3F)
K2M	MAGNETIC CONTACTOR(M3F)
K2R • K3R	MAGNETIC RELAY(ALARM)
K4R	MAGNETIC RELAY(OPERATION)
X3M	TERMINAL STRIP

CENTRAL CONTROL ADAPTER KIT	
A1P	PRINTED CIRCUIT BOARD
F1U	FUSE (250V 5A)
F2U • F3U	FUSE (250V 1A)
K1R	MAGNETIC RELAY(ALARM)
K2R	MAGNETIC RELAY(ALARM)
K3R	MAGNETIC RELAY(OPERATION)
K4R	MAGNETIC RELAY(COOL/HEAT)
K5R	MAGNETIC RELAY
K6R	MAGNETIC RELAY
R1T	THERMISTOR
T1R	TRANSFORMER
T2R	TRANSFORMER
X1M • X2M	TERMINAL STRIP

APPLICABLE MODEL	
RUR06NY1	FDR06NY1
RUR06NY1S	AFDR06NY1

3D063484A

(FDR08NY1 + RUR08NY1) + DTA107A55



- NOTES) 1. --- : FIELD WIRING
2. CHANGE THE CONNECTION OF TRANSFORMER
ACCORDING TO THE TABLE 1.
3. GROUND THE SHIELD OF THE CORD TO THE
ELECTRIC COMPO. BOX ASSY.

TABLE 1

VOLTAGE		TERMINAL
PRIMARY	SECONDARY	
220V	200V	U-Y1
230V	200V	U-Y2
240V	200V	U-Y3

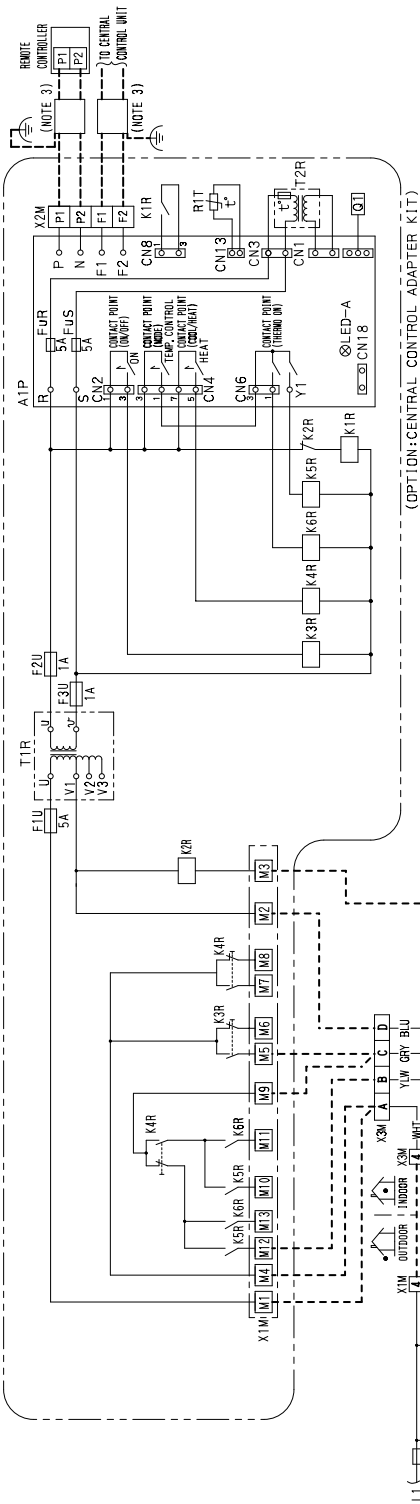
AIR CONDITIONER	
F1U	FUSE (250V 5A)
K1M	MAGNETIC CONTACTOR(M1C)
K1R	MAGNETIC RELAY(ALARM)
Q1M	THERMO SWITCH (W1F)
S1PL	PRESSURE SWITCH (LOW)
S2PH	PRESSURE SWITCH (HIGH)
X1M • X2M	TERMINAL STRIP
F2C	OVERCURRENT RELAY(M3F)
K2M	MAGNETIC CONTACTOR(M3F)
K2R • K3R	MAGNETIC RELAY(ALARM)
K4R	MAGNETIC RELAY(OPERATION)
X3M	TERMINAL STRIP
INDOOR UNIT	
OUTDOOR UNIT	

CENTRAL CONTROL ADAPTER KIT	
A1P	PRINTED CIRCUIT BOARD
F1U	FUSE (250V 5A)
F2U • F3U	FUSE (250V 1A)
K1R	MAGNETIC RELAY(ALARM)
K2R	MAGNETIC RELAY(ALARM)
K3R	MAGNETIC RELAY(OPERATION)
K4R	MAGNETIC RELAY(COOL/HEAT)
K5R	MAGNETIC RELAY
K6R	MAGNETIC RELAY
R1T	THERMISTOR
T1R	TRANSFORMER
T2R	TRANSFORMER
X1M • X2M	TERMINAL STRIP

APPLICABLE MODEL	
RUR08NY1	FDR08NY1
RUR08NY1S	AFDR08NY1

3D063481A

(FDR10NY1 + RUR10NY1) + DTA107A55



NOTES) 1. ----- : FIELD WIRING
2. CHANGE THE CONNECTION OF TRANSFORMER
ACCORDING TO THE TABLE 1.
3. GROUND THE SHIELD OF THE CORD TO THE
ELECTRIC COMPO. BOX ASSY.

TABLE 1

* FACTORY CONNECTION		TERMINAL
PRIMARY	SECONDARY	
220V	200V	U-Y1
230V	200V	U-Y2
240V	200V	U-Y3

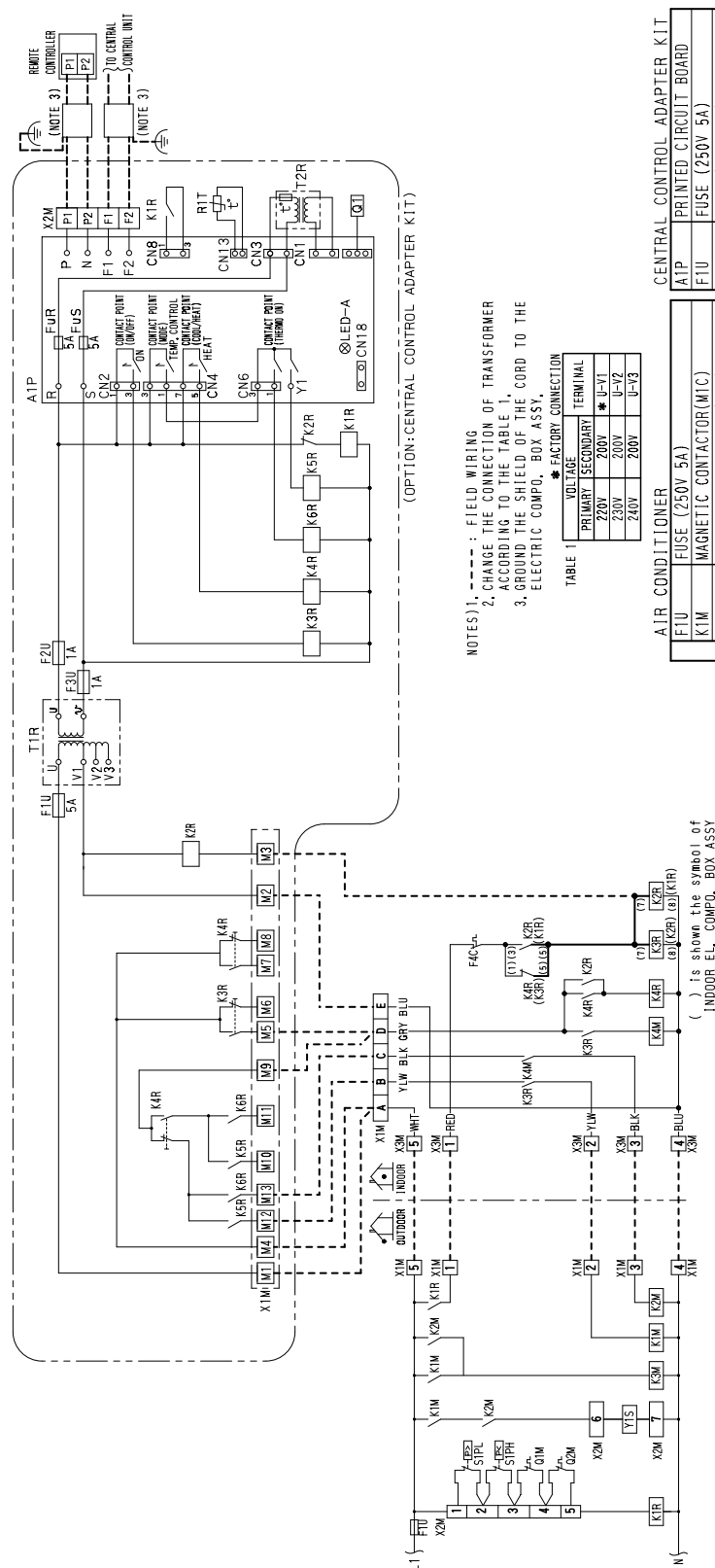
AIR CONDITIONER	
F1U	FUSE (250V 10A)
K1M	MAGNETIC CONTACTOR(M1C)
K1R	MAGNETIC RELAY(ALARM)
Q1M	THERMO SWITCH (W/F)
S1PL	PRESSURE SWITCH (LOW)
S2PH	PRESSURE SWITCH (HIGH)
X1M • X2M	TERMINAL STRIP
F2C	OVERCURRENT RELAY(M3F)
K2M	MAGNETIC CONTACTOR(M3F)
K2R • K3R	MAGNETIC RELAY(ALARM)
K4R	MAGNETIC RELAY(OPERATION)
X3M	TERMINAL STRIP

CENTRAL CONTROL ADAPTER KIT	
A1P	PRINTED CIRCUIT BOARD
F1U	FUSE (250V 5A)
F2U • F3U	FUSE (250V 1A)
K1R	MAGNETIC RELAY(ALARM)
K2R	MAGNETIC RELAY(ALARM)
K3R	MAGNETIC RELAY(OPERATION)
K4R	MAGNETIC RELAY(COOL/HEAT)
K5R	MAGNETIC RELAY
K6R	MAGNETIC RELAY
R1T	THERMISTOR
T1R	TRANSFORMER
T2R	TRANSFORMER
X1M • X2M	TERMINAL STRIP

APPLICABLE MODEL	
RUR10NY1	FDR10NY1
RUR10NY1S	AFDR10NY1

3D063482A

(FDR13NY1 + RUR13NY1) + DTA107A55
(FDR15NY1 + RUR15NY1) + DTA107A55
(FDR18NY1 + RUR18NY1) + DTA107A55
(FDR20NY1 + RUR20NY1) + DTA107A55



APPLICABLE MODEL
RUR13NY1
RUR15NY1
RUR18NY1
RUR20NY1
RUR13NY1S
RUR15NY1S
RUR18NY1S
RUR20NY1S

AIR CONDITIONER		CENTRAL CONTROL ADAPTER KIT	
F1U	FUSE (250V 5A)	A1P	PRINTED CIRCUIT BOARD
K1M	MAGNETIC CONTACTOR(M1C)	F1U	FUSE (250V 5A)
K2M	MAGNETIC CONTACTOR(M2C)	F2U • F3U	FUSE (250V 1A)
K1R	MAGNETIC RELAY(ALARM)	K1R	MAGNETIC RELAY(ALARM)
K3M	MAGNETIC CONTACTOR(M1F • M2F)	K2R	MAGNETIC RELAY(OPERATION)
Q1M	THERMO SWITCH (M1F)	K3R	MAGNETIC RELAY(COOL/HEAT)
Q2M	THERMO SWITCH (M2F)	K4R	MAGNETIC RELAY
S1PL	PRESSURE SWITCH (LOW)	K5R	MAGNETIC RELAY
S2PH	PRESSURE SWITCH (HIGH)	K6R	MAGNETIC RELAY
X1M • X2M	TERMINAL STRIP	R1T	THERMISTOR
Y1S	SOLENOID VALVE	T1T	TRANSFORMER
F4C	OVERCURRENT RELAY(M3F)	T2R	TRANSFORMER
K4M	MAGNETIC CONTACTOR(M3F)	X1M • X2M	TERMINAL STRIP
K2R • K3R	MAGNETIC RELAY(ALARM)		
K4R	MAGNETIC RELAY(OPERATION)		
X2M	TERMINAL STRIP		

3D063297A

4.6 Installation manual

INSTALLATION MANUAL

⚠ WARNING

- Ask your dealer or qualified personnel to carry out installation work. Do not try to install this kit yourself. Improper installation may result in electric shocks or fire.
- Perform installation work in accordance with this installation manual. Improper installation may result in electric shocks or fire.
- All electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual. An improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured and no external forces act on the terminal connection or wires. When connecting the wiring between the units and remote controller, position the wires so that switch box cover can be securely fastened. Improper connections or positioning may result in electric shocks or fire.
- Before touching electrical parts, turn off the unit.

⚠ CAUTION

- Ground this kit. Do not connect the ground wire to gas or water pipes, a lightning conductor or a telephone ground wire. Incomplete grounding may result in electric shocks.
 - Gas pipe - Ignition or an explosion may occur if the gas leaks
 - Water pipe - Hard vinyl tubes are not effective grounds.
 - Lightning conductor or telephone ground wire - Electric potential may rise abnormally if struck by a lightning bolt.
- Install this kit, power cord and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise.
- Use the terminal cover when you connect the field wiring. Incomplete setting may result in electric shocks.



Meaning of warning and caution symbols

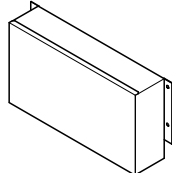
⚠ WARNING.....Failure to observe a warning may result in death.

⚠ CAUTION.....Failure to observe a caution may result injury or damage to the equipment.

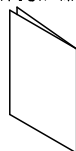
COMPONENTS

Check the following components are included in this optional accessory before installation.

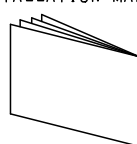
CONTROL BOARD BOX



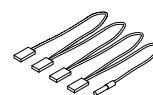
OPERATION MANUAL



INSTALLATION MANUAL



WIRE HARNESS



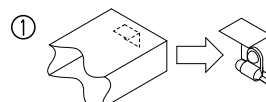
Give to the customer this OPERATION MANUAL certainly.

INSTALLATION

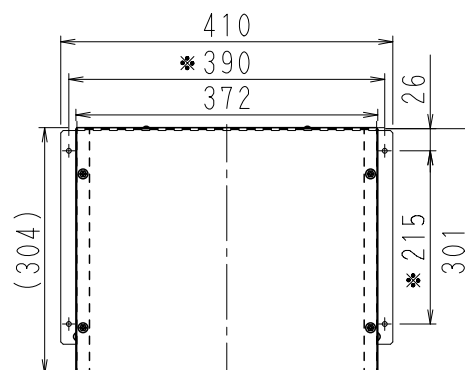
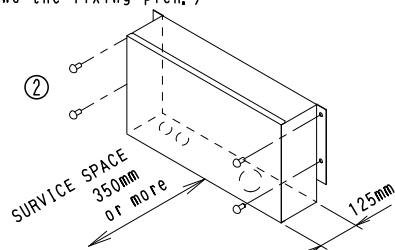
Deside the situation of Control Board Box.
It is affected the situations of the thermistor.

The length of lead wire - Thermistor:2.5m

- ① Install the thermistor (in the control board box) at the inlet duct or the suction grille. Use the kit:remote sensor(KRCS01-1B), if you need the longer length than it, (Can use it untill 12m,)
- ② Install the control board box on the wall or the pillar. Make sure the wire inlet is at the bottom of the box. Use 4 bolts(M5) for fixing the box. Install the box in the indoor side. (Example:Set it in the ceiling or in the room.) Do not install the box in the air conditioner. Fixing situation : See right Fig. (Height:125mm) (* shows the fixing pich,)



Example:Set the thermistor into the inlet duct and clamped by resin clamp and fix plate.



C : 2P042157

ELECTRIC WIRING

GENERAL INSTRUCTIONS

- All wiring, components and materials to be procured on site must comply with the applicable local and national codes.
- Use copper conductors only.
- All field wiring and components must be provided by licensed electrician.
- Unit shall be grounded in compliance with the applicable local and national codes.
- After wiring work, check power to the equipment shuts OFF when switch is shut OFF.

⚠ WARNING

Use ring type crimp style terminal for connection to power supply terminal block.

If is not used, satisfy the following conditions:

- Do not connect wires of different gauge to the same power supply terminal.
(Looseness in the connection may cause overheating.)
- When connecting wires of the same gauge, connect them according to the righthand figure.

Ring type crimp style terminal

Connect wires of the same gauge to both sides



Do not connect wires of the same gauge at one side



Do not connect wires of different gauges



Wiring specification

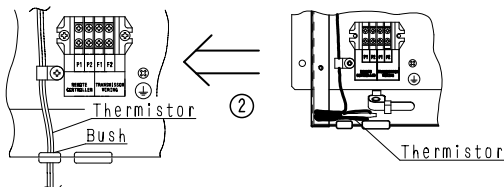
Use the wire shown right for between the unit and the control board box.

Type	Size
UL1015 AWG18 equivalent	0.75mm ² each

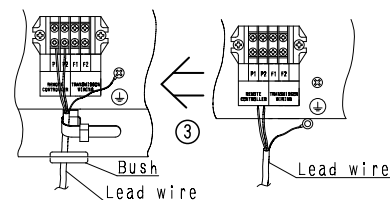
Connect the wiring between indoor and outdoor units, central controllers and remote controller.

For details, refer to the installation manual of them.

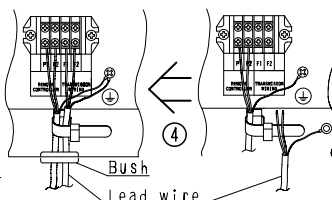
- ① Remove the cover of the control board box, after setting it. (Parts situation is shown right Fig.)
- ② Install the thermistor through the bush.
(It is in the control board box. See below Fig.)



- ③ Connect the read wires of Remote Controller.
(See the below Fig.)
Ground the shield of the cords to the control board box.



- ④ Connect the read wires of Central Control Unit.
(See the below Fig.)
Ground the shield of the cords to the control board box.

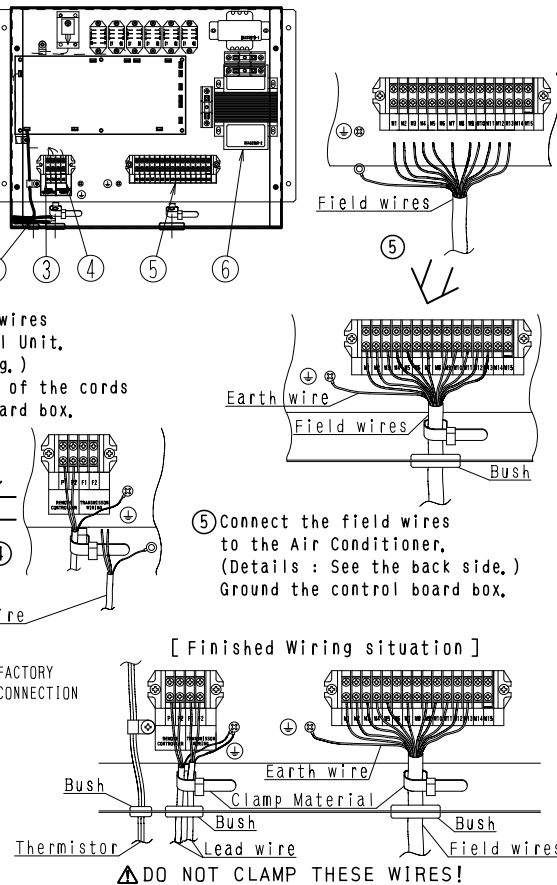


- ⑥ Change the connection of transformer according to the right table.
(Especially for Y1 Model.)

VOLTAGE		TERMINAL
PRIMARY	SECONDARY	
220V	200V	* U-V1
230V	200V	U-V2
240V	200V	U-V3

* FACTORY CONNECTION

Clamp these wires by clamp materials certainly.
(Clamp the earth wire.) (See right Fig.)
Do not clamp the high voltage wires (Field wires) and the low voltage wires (Lead wire and Thermistor) both inside and outside of the control board box.



NOTE

- Prepare the remote controller (BRC1C62).
REASON: The remote controller is needed per each kit for setting the address.

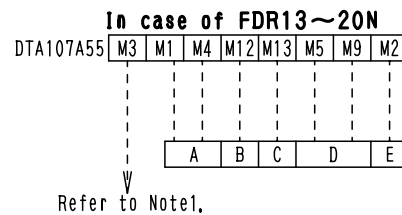
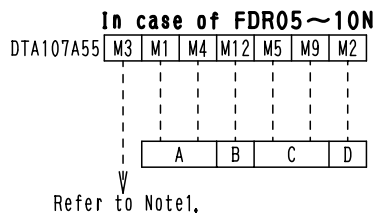
C : 2P042157

INSTALLATION MANUAL

FIELD WIRING CONNECTION BETWEEN
CENTRAL CONTROL ADAPTER KIT MODEL DTA107A55(OPTION)
AND EL. COMPO. BOX ASSY. OF INDOOR UNIT

* IN CASE OF CONNECTING THIS INDOOR TO CENTRAL CONTROL ADAPTER KIT(DTA107A55), PLEASE FOLLOW THIS MANUAL.*

This connection instructions applies to the Model shown below,
Other instructions can refer to the installation manual of DTA107A55



Note1 : Connecting terminal "M3" .(Alarm signal output)
Use the attached wire harness that are connected between K1R(5), K1R(7), K2R(7), and K3R(5).
[This () show the terminal.], Disconnect K3R(5) and cut the straight type crimp terminal within it,
Strip this wire and join this wire together with the wire that is connected to "M3" terminal
by using straight type crimp terminal (S187) and reconnect this terminal to K3R(5) again.
(Refer to wiring diagram of air conditioner.)

3PN10678B

4.7 BRC1C62 — LCD wired remote controller

4.7.1 BRC1C62



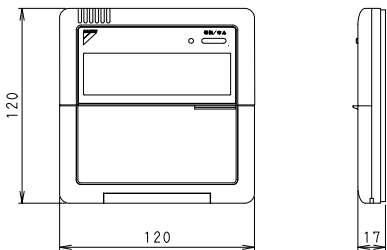
3

4.7.2 Dimensions

Unit (mm)

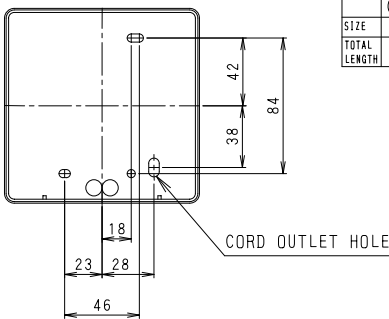
NOTE) 1. REMOTE CONTROLLER CORD AND STAPLE ARE NOT ATTACHED, THEY ARE FIELD SUPPLIED PARTS.

• REMOTE CONTROLLER DIMENSIONS

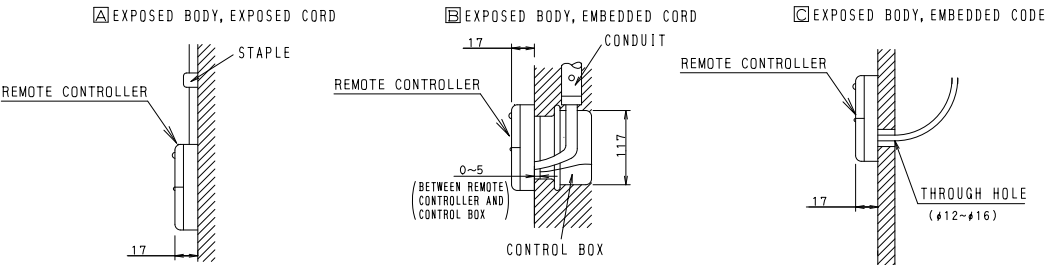


• SPECIFICATIONS OF CORD

	FOR AUSTRALIA	FOR OTHER COUNTRIES
TYPE	SHIELD WIRE (INSULATED THICKNESS:1mm OR MORE)	VINYL CORD WITH SHEATH OR CABLE (INSULATED THICKNESS:1mm OR MORE)
SIZE	0.75~1.25mm ²	
TOTAL LENGTH	500m	

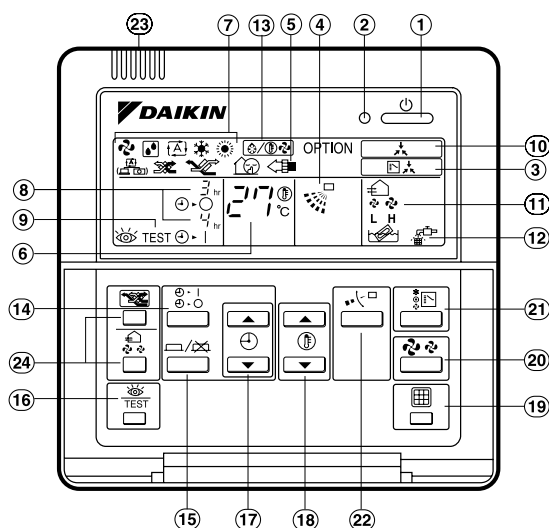


• INSTALLATION METHOD



3D028952

4.7.3 Names and functions of each switch and display



1. On/off button

Press the button and the system will start. Press the button again and the system will stop.

2. Operation lamp (red)

The lamp lights up during operation.

3. Display “ ” (changeover under control)

It is impossible to changeover heat/cool with the remote controller which display this icon.

4. Display “ ” (air flow flap)

5. Display “ OPTION ” (ventilation/air cleaning)

This display shows that the ventilation unit are in operation. (these are optional accessories)

6. Display “ ” (set temperature)

This display shows the temperature you have set.

7. Display “ ” “ ” “ ” “ ” “ ” (operation mode)

This display shows the current operation mode.

8. Display “ ” (programmed time)

This display shows the programmed time of the system start or stop.

9. Display “ TEST ” (inspection/test operation)

When the inspection/test operation button is pressed, the display shows the mode in which the system actually is.

10. Display “ ” (under centralized control)

When this display shows, the system is under centralized control. (This is not a standard specification.)

11. Display “ ” (fan speed)

This display shows the fan speed you have selected.

12. Display “ ” (time to clean air filter)

Refer to the operation manual of indoor unit.

13. Display “ ” (defrost/hot start)

14. Timer mode start/stop button

15. Timer on/off button

16. Inspection/test operation button

This button is only used by qualified service persons for maintenance purposes.

17. Programming time button

Use this button for setting the programming start and/or stop time.

18. Temperature setting button

Use this button for setting the desired temperature.

19. Filter sign reset button

Refer to the operation manual of indoor unit.

20. Fan speed control button

Press this button to select the fan speed of your preference.

21. Operation mode selector button

Press this button to select the operation mode of your preference.

22. Air flow direction adjust button

23. Thermistor

It senses the room temperature around the remote controller.

24. These buttons are used when the ventilation units are installed. (These are optional accessories.)

Refer to the operation manual of the ventilation unit.

NOTE

- In contradistinction to actual operating situations, the display on above figure shows all possible indications.
- Above figure shows the remote controller which is opened the cover.

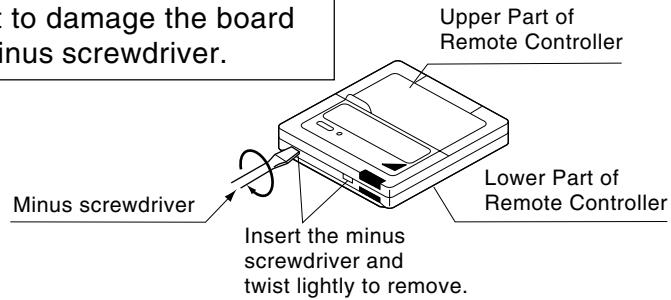
C : 3P226891-1F

4.7.4 Installation

1. Remove the upper part of remote controller.

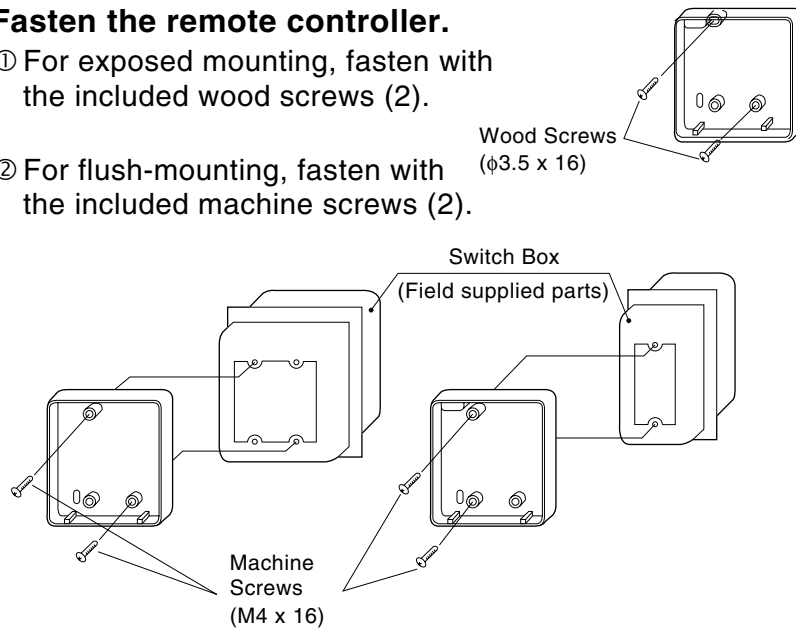
Insert minus screwdriver into the slots in the lower part of remote controller (2 places), and remove the upper part of remote controller.

The PC board is mounted in the upper part of remote controller. Be careful not to damage the board with the minus screwdriver.



2. Fasten the remote controller.

- ① For exposed mounting, fasten with the included wood screws (2).
- ② For flush-mounting, fasten with the included machine screws (2).



For the field supplied switch box, use optional accessories KJB111A or KJB211A.

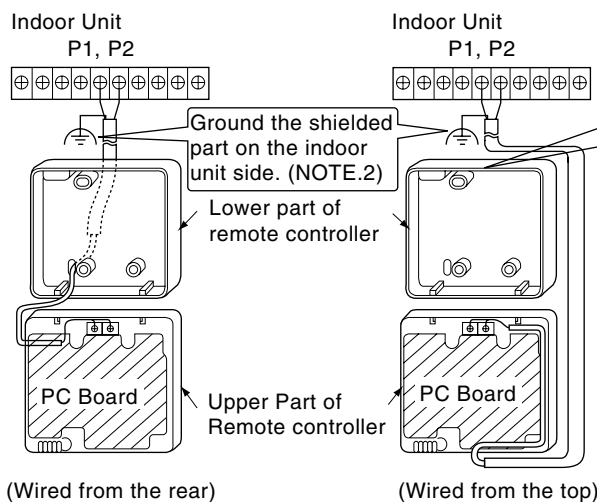
NOTE

Choose the flattest place possible for the mounting surface. Be careful not to distort the shape of the lower part of remote controller by over-tightening the mounting screws.

2P068938

3. Wire the indoor unit.

Connect the terminals on top of the upper part of remote controller (P1, P2), and the terminals of the indoor unit (P1, P2). (P1 and P2 do not have polarity.)



NOTE

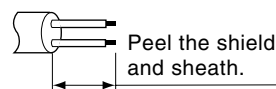
When wiring, run the wiring away from the power supply wiring in order to avoid receiving electric noise (external noise).

Notch the part for the wiring to pass through with nippers, etc.

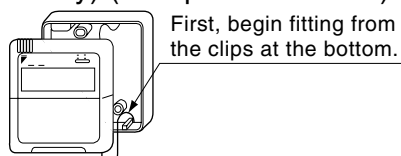
Wiring Specifications

Wiring Type	Sheathed vinyl code or cable (2 wire) (NOTE.2)
Size	0.75 – 1.25 mm ²

NOTE) 1. Peel the shield and sheath for the part that is to pass through the inside of the remote controller case, as shown in the figure below.



2. Shield wire (2 wire) can be used for remote controller wiring, but it must confirm to EMC (Electromagnetic Compatibility) (European Directive).



4. Reattach the upper part of remote controller.

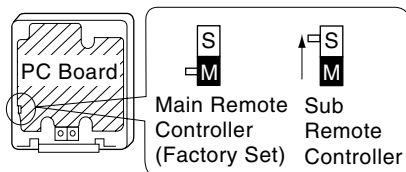
Be careful not to pinch the wiring when attaching.

NOTE

1. The switch box and wiring for connection are not included.
2. Do not directly touch the PC board with your hand.

If controlling one indoor unit with two remote controllers

Change the MAIN/SUB changeover switch setting as described below.



Set one remote controller to "main," and the other to "sub."

NOTE

- If controlling with one remote controller, be sure to set it to "main."
- Set the remote controller before turning power supply on.








"88" is displayed for about one minute when the power supply is turned on, and the remote controller cannot be operated in some cases.

2P068938

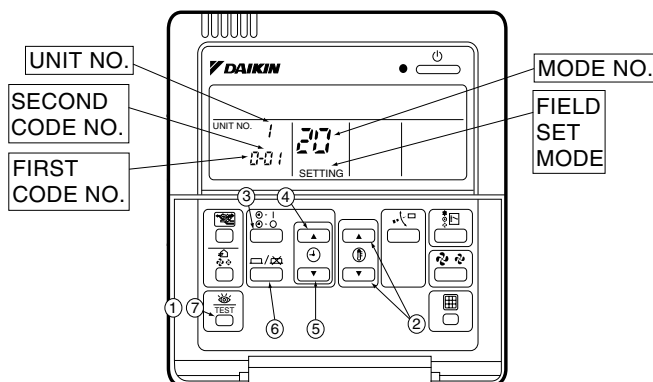
4.7.5 Field setting

(If optional accessories are mounted on the indoor unit, the indoor unit setting may have to be changed. Refer to the instruction manual for each optional accessory.)

Procedure

- ① When in the normal mode, press the “ ” button for a minimum of four seconds, and the FIELD SET MODE is entered.
- ② Select the desired MODE NO. with the “ ” button.
- ③ During group control, when setting by each indoor unit (mode No. 20, 21 and 23 have been selected), push the “ ” button and select the INDOOR UNIT NO. to be set. (This operation is unnecessary when setting by group.)
- ④ Push the “ ” upper button and select FIRST CODE NO.
- ⑤ Push the “ ” lower button and select the SECOND CODE NO.
- ⑥ Push the “ ” button once and the present settings are SET.
- ⑦ Push the “ ” button for about one second to return to the NORMAL MODE.

(Example) If during group setting and the time to clean air filter is set to FILTER CONTAMINATION - HEAVY, SET MODE NO. to “10,” FIRST CODE NO. to “0,” and SECOND CODE NO. to “02.”



Mode No. Note) 1	FIRST CODE NO.	Description of Setting	SECOND CODE No. Note) 2		
			01	02	03
10(20)	0	Filter Contamination - Heavy/Light (Setting for spacing time of display time to clean air filter) (Setting for when filter contamination is heavy, and spacing time to clean air filter is to be halved)	Ultra-long-life type Long-life type Standard type	Approx. 10,000 hours Approx. 2,500 hours Approx. 200 hours	Approx. 5,000 hours Approx. 1,250 hours Approx. 100hours
	1	Long-life filter type (Setting of filter sign indication time) (Change setting when Ultra-long-life filter is installed)	Long-life filter	Ultra-long-life filter (1)	—
	3	Spacing Time of Display Time to Clean Air Filter Count (Setting for when the filter sign is not to be displayed)	Display	Do Not Display	—
11(21)	0	Setting Number of Connected Skyair Simultaneous Operation System Indoor Units(Setting for Simultaneous Operation System)	Pair	Twin	—
13(23)	0	High Ceiling Setting (Setting for when installed in a Ceiling higher than 2.7m)	Normal	High Ceiling 1	High Ceiling 2
	1	Selection of Air Flow Direction (Setting for when a blocking pad kit has been installed)	F	T	W
	3	Air Flow Direction Adjust Function (To be set when decoration panel for air outlet is installed)	Equipped	No Equipped	—
	4	Air Flow Direction Range Setting	Upper	Normal	Lower
	6	Setting the External Static Pressure (Setting according to the connected duct resistance) (For FHYK, follow the High Ceiling Setting)	Normal (Normal)	High Static Pressure (High Ceiling)	Low Static Pressure —

Note:

1. Setting is carried out in the group mode, however, set the mode number inside the () for individual setting of the each indoor unit or confirmation after setting.
2. The SECOND CODE number is set to “01” when shipped from the factory.
However for the following cases it is set to “02”.
●Air flow direction range setting.
3. Do not make any settings not given in the table above.
4. Not displayed if the indoor unit is not equipped with that function.
5. When returning to the normal mode, “88” may be displayed in the LCD in order for the remote controller to initialize itself.

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

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF
COMMERCIAL AIR CONDITIONING, HEATING, COOLING,
REFRIGERATING EQUIPMENT, COMMERCIAL HEATING
EQUIPMENT, RESIDENTIAL AIR CONDITIONING
EQUIPMENT, HEAT RECLAIM VENTILATION, AIR
CLEANING EQUIPMENT, MARINE TYPE CONTAINER
REFRIGERATION UNITS, COMPRESSORS AND VALVES.



JQA-1452

Organization:
DAIKIN INDUSTRIES
(THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT
AND MANUFACTURE OF AIR
CONDITIONERS AND THE
COMPONENTS INCLUDING
COMPRESSORS USED FOR THEM



EC99J2044

All of the Daikin Group's business facilities and subsidiaries in Japan are certified under the ISO 14001 international standard for environment management.

Dealer

DAIKIN INDUSTRIES, LTD.

Head Office:
Umeda Center Bldg., 2-4-12, Nakazaki-Nishi,
Kita-ku, Osaka, 530-8323 Japan

Tokyo Office:
JR Shinagawa East Bldg., 2-18-1, Konan,
Minato-ku, Tokyo, 108-0075 Japan

http://www.daikin.com/global_ac/

©All rights reserved