DAIKIN

EDUS281120_a

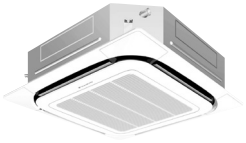
R-410A

Engineering Data

SkyAir

Cooling Only 60Hz
Heat Pump 60Hz

RZR-P, RZQ-P(9) series






INVERTER

DAIKIN AC (AMERICAS), INC.

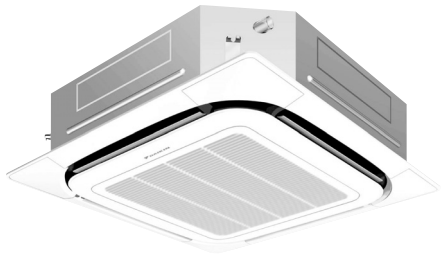
SkyAir Engineering Data

1. External appearance

1.1 Indoor unit

Ceiling mounted cassette type (Round flow)

FCQ18PAVJU / FCQ24PAVJU / FCQ30PAVJU
FCQ36PAVJU / FCQ42PAVJU



Ceiling suspended type

FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU

Wall mounted type

FAQ18PVJU / FAQ24PVJU

Ceiling mounted duct type

FBQ18PVJU / FBQ24PVJU / FBQ30PVJU
FBQ36PVJU / FBQ42PVJU

1.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

2. Model name, power supply and nomenclature

2.1 Model name and power supply

2.1.1 Cooling Only

Indoor unit		Outdoor unit	Power supply intake
Ceiling mounted cassette type (Round flow)	FCQ18PAVJU*	RZR18PVJU	Indoor unit: 1 phase, 208/230V, 60Hz Outdoor unit: 1 phase, 208/230V, 60Hz
	FCQ24PAVJU*	RZR24PVJU	
	FCQ30PAVJU*	RZR30PVJU	
	FCQ36PAVJU*	RZR36PVJU	
	FCQ42PAVJU*	RZR42PVJU	
Ceiling suspended type	FHQ18PVJU	RZR18PVJU	
	FHQ24PVJU	RZR24PVJU	
	FHQ30PVJU	RZR30PVJU	
	FHQ36MVJU	RZR36PVJU	
	FHQ42MVJU	RZR42PVJU	
Wall mounted type	FAQ18PVJU	RZR18PVJU	
	FAQ24PVJU	RZR24PVJU	
Ceiling mounted duct type	FBQ18PVJU*	RZR18PVJU	
	FBQ24PVJU*	RZR24PVJU	
	FBQ30PVJU*	RZR30PVJU	
	FBQ36PVJU*	RZR36PVJU	
	FBQ42PVJU*	RZR42PVJU	

Note:
1. * : New model or changed model

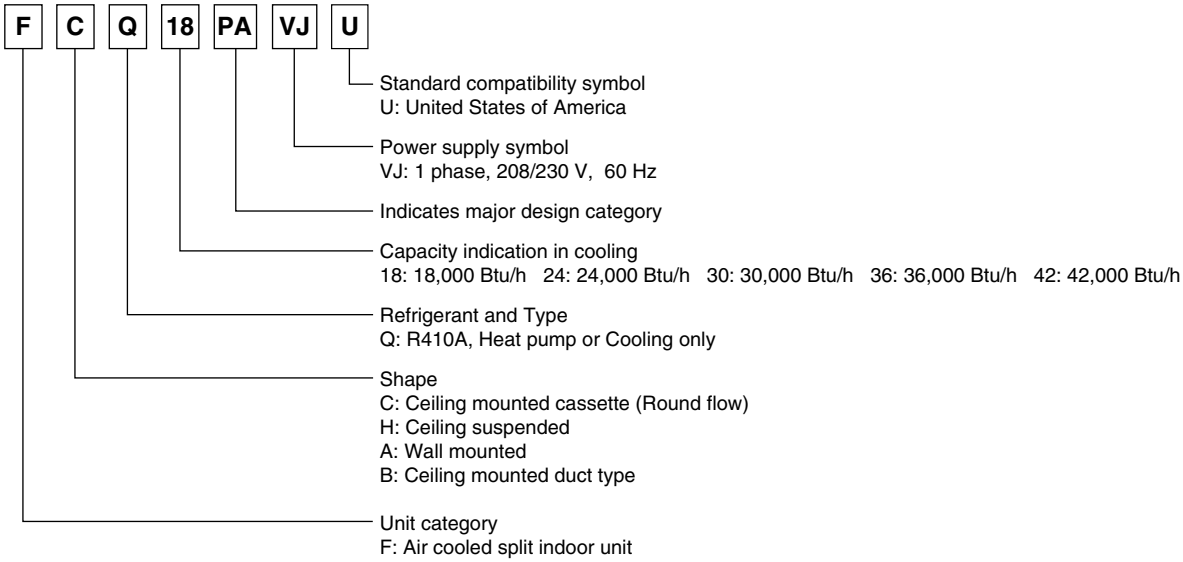
2.1.2 Heat Pump

Indoor unit		Outdoor unit	Power supply intake
Ceiling mounted cassette type (Round flow)	FCQ18PAVJU*	RZQ18PVJU9	Indoor unit: 1 phase, 208/230V, 60Hz Outdoor unit: 1 phase, 208/230V, 60Hz
	FCQ24PAVJU*	RZQ24PVJU9	
	FCQ30PAVJU*	RZQ30PVJU	
	FCQ36PAVJU*	RZQ36PVJU9	
	FCQ42PAVJU*	RZQ42PVJU9	
Ceiling suspended type	FHQ18PVJU	RZQ18PVJU9	
	FHQ24PVJU	RZQ24PVJU9	
	FHQ30PVJU	RZQ30PVJU	
	FHQ36MVJU	RZQ36PVJU9	
	FHQ42MVJU	RZQ42PVJU9	
Wall mounted type	FAQ18PVJU	RZQ18PVJU9	
	FAQ24PVJU	RZQ24PVJU9	
Ceiling mounted duct type	FBQ18PVJU*	RZQ18PVJU9	
	FBQ24PVJU*	RZQ24PVJU9	
	FBQ30PVJU*	RZQ30PVJU	
	FBQ36PVJU*	RZQ36PVJU9	
	FBQ42PVJU*	RZQ42PVJU9	

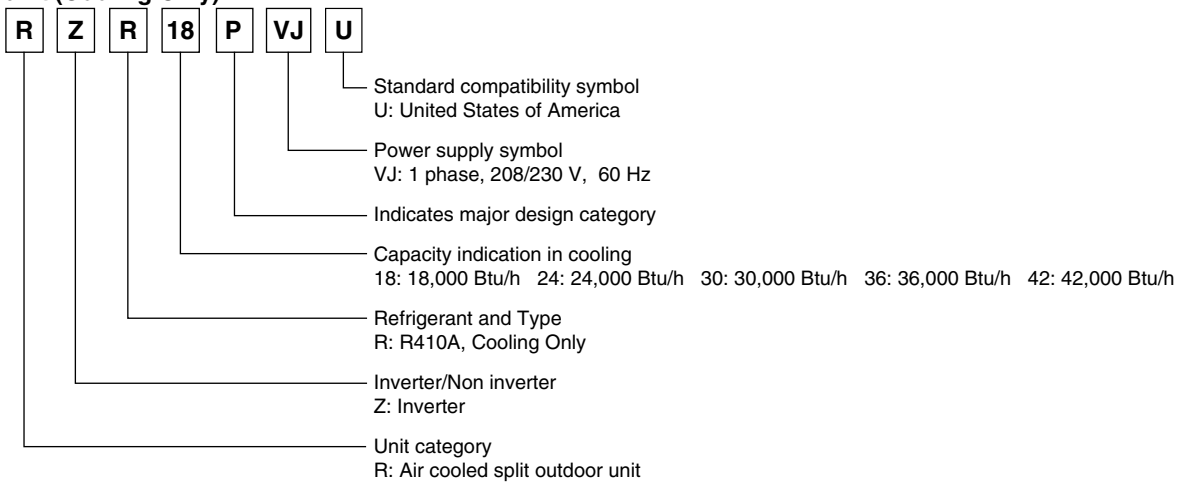
Note:
1. * : New model or changed model

2.2 Nomenclature

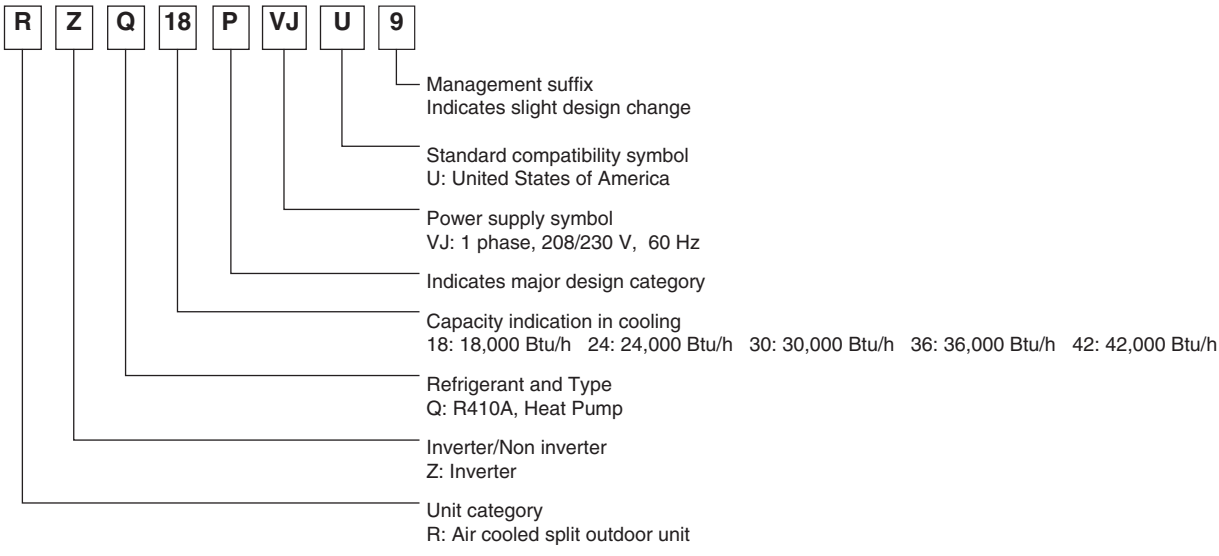
Indoor unit



Outdoor unit (Cooling Only)



Outdoor unit (Heat Pump)



3. Specifications

3.1 Cooling Only,

3.1.1 FCQ / Ceiling mounted cassette type (Round flow)

Model	Indoor unit			FCQ18PAVJU	FCQ24PAVJU	FCQ30PAVJU
	Outdoor unit			RZR18PVJU	RZR24PVJU	RZR30PVJU
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]			Btu/h	18,000	24,000	30,000
SEER (Rated)				17.2	16.8	15.8
EER (Rated)			Btu/h-W	13.9	12.0	10.2
Indoor unit				**FCQ18PAVJU**	**FCQ24PAVJU**	**FCQ30PAVJU**
Color				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D		in (mm)	9–11/16 × 33–1/16 × 33–1/16 (246 x 840 x 840)	9–11/16 × 33–1/16 × 33–1/16 (246 x 840 x 840)	9–11/16 × 33–1/16 × 33–1/16 (246 x 840 x 840)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 6 × 21	2 × 10 × 21	2 × 10 × 21
	Face area		ft² (m²)	2.87 (0.9)	4.80 (1.5)	4.80 (1.5)
Fan	Model			QTS48C15M	QTS48C15M	QTS48C15M
	Type			Turbo fan	Turbo fan	Turbo fan
	Motor output		W	56	56	56
	Airflow rate (HH/H/L)		cfm (m^3/min)	560/470/390 (16/13/11)	780/620/470 (22/13/11)	830/670/530 (24/13/11)
Air filter				—	—	—
Mass (Weight)			Lbs (kg)	43 (19.5)	48.5 (22)	48.5 (22)
Piping connections	Liquid		in (mm)	ϕ1/4 (6.4) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ1/2 (12.7) (Flare connection)	ϕ5/8 (15.8)(Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))
Remote controller (option)		Wired		BRC1E71	BRC1E71	BRC1E71
		Wireless		—	—	—
Decoration panels (option)	Model			BYCP125K–W1	BYCP125K–W1	BYCP125K–W1
	Color			Fresh white	Fresh white	Fresh white
	Dimensions	H×W×D	in (mm)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	12.2 (5.5)	12.2 (5.5)	12.2 (5.5)
Outdoor unit				**RZR18PVJU**	**RZR24PVJU**	**RZR30PVJU**
Color				Ivory	Ivory	Ivory
Dimensions	H×W×D		in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area		ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model			2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.7	1.7	1.7
Fan	Model			P47N11F	P47N11F	P47N11F
	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		W	70	70	70
	Airflow rate		cfm (m^3/min)	1,835 (52)	1,835 (52)	1,835 (52)
Mass (Weight)			Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid		in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ5/8 15.8)(Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	35-100	30-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference		ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model			R-410A	R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil		Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
		Charge	L (oz)	0.75 (25.4)	0.75 (25.4)	0.75 (25.4)
Drawing Number				C: 4D074132	C: 4D074132	C: 4D074132

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.

Ceiling mounted cassette type (Round flow), continued

Model	Indoor unit			FCQ36PAVJU	FCQ42PAVJU
	Outdoor unit			RZR36PVJU	RZR42PVJU
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]			Btu/h	36,000	42,000
SEER (Rated)				17.5	16.0
EER (Rated)			Btu/h-W	11.2	10.2
Indoor unit				**FCQ36PAVJU**	**FCQ42PAVJU**
Color				Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D		in (mm)	11–5/16 × 33–1/16 × 33–1/16 (287 x 840 x 840)	11–5/16 × 33–1/16 × 33–1/16 (287 x 840 x 840)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 12 × 21	2 × 12 × 21
	Face area		ft² (m²)	5.76 (1.8)	5.76 (1.8)
Fan	Model			QTS48C15M	QTS48C15M
	Type			Turbo fan	Turbo fan
	Motor output		W	120	120
	Airflow rate (HH/H/L)		cfm (m^3/min)	1180/910/700 (33/26/20)	1220/970/790 (35/28/22)
Air filter				—	—
Mass (Weight)			Lbs (kg)	55 (25)	55 (25)
Piping connections	Liquid		in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))
Remote controller (option)		Wired		BRC1E71	BRC1E71
		Wireless		—	—
Decoration panels (option)	Model			BYCP125K–W1	BYCP125K–W1
	Color			Fresh white	Fresh white
	Dimensions	H×W×D	in (mm)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	12.2 (5.5)	12.2 (5.5)
Outdoor unit				**RZR36PVJU**	**RZR42PVJU**
Color				Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 60 × 13	2 × 60 × 13
	Face area		ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model			JT100G-VDLW@T	JT100G-VDLW@T
	Type			Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output		kW	2.5	3.0
Fan	Model			KFD–325–70–8C2	KFD–325–70–8C2
	Type			Propeller fan	Propeller fan
	Motor output		W	70 × 2	70 × 2
	Airflow rate		cfm (m^3/min)	3,740 (106)	3,740 (106)
Mass (Weight)			Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid		in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	25-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	230 (70)	230 (70)
	Max. height difference		ft (m)	164 (50)	164 (50)
Refrigerant	Model			R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil		Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
		Charge	L (oz)	1.5 (50.7)	1.5 (50.7)
Drawing Number				C: 4D074133	C: 4D074133

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB /19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.

3.1.2 FHQ

Ceiling suspended type

Model	Indoor unit		FHQ18PVJU	FHQ24PVJU	FHQ30PVJU
	Outdoor unit		RZR18PVJU	RZR24PVJU	RZR30PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]		Btu/h	18,000	24,000	30,000
SEER (Rated)			18.0	18.1	17.2
EER (Rated)		Btu/h-W	14.0	12.6	10.5
Indoor unit			**FHQ18PVJU**	**FHQ24PVJU**	**FHQ30PVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)
Fan	Model		—	—	—
	Type		Sirocco fan	Sirocco fan	Sirocco fan
	Motor output	W	130	130	130
	Airflow rate (H/L)	cfm (m^3/min)	790/670 (22/19)	790/670 (22/19)	790/670 (22/19)
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)	90 (41)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare Connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E71	BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83	BRC7E83
Outdoor unit			**RZR18PVJU**	**RZR24PVJU**	**RZR30PVJU**
Color			Ivory	Ivory	Ivory
Dimensions	H×W×D	in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7	1.7
Fan	Model		P47N11F	P47N11F	P47N11F
	Type		Propeller fan	Propeller fan	Propeller fan
	Motor output	W	70	70	70
	Airflow rate	cfm (m^3/min)	1,835 (52)	1,835 (52)	1,835 (52)
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D071679	C: 4D071679	C: 4D071679

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB /19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.

Ceiling suspended type, continued

Model	Indoor unit		FHQ36MVJU	FHQ42MVJU
	Outdoor unit		RZR36PVJU	RZR42PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]		Btu/h	36,000	40,500
SEER (Rated)			14.0	13.8
EER (Rated)		Btu/h-W	10.2	9.5
Indoor unit			**FHQ36MVJU**	**FHQ42MVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm (m^3/min)	830/670 (24/19)	850/700 (24/20)
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZR36PVJU**	**RZR42PVJU**
Color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D	in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 13	2 × 60 × 13
	Face area	ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model		JT100G-VDLW@T	JT100G-VDLW@T
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	2.5	3.0
Fan	Model		KFD–325–70–8C2	KFD–325–70–8C2
	Type		Propeller Fan	Propeller Fan
	Motor output	W	70×2	70×2
	Airflow rate	cfm (m^3/min)	3,740 (106)	3,740 (106)
Mass (Weight)		Lbs (kg)	283 (128)	283 (7.5 m)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	25-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	164 (50)	164 (50)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	1.5 (51)	1.5 (51)
Drawing Number			C: 4D071676	C: 4D071676

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB /19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.

3.1.3 FAQ

Wall mounted type

Model	Indoor unit		FAQ18PVJU	FAQ24PVJU
	Outdoor unit		RZR18PVJU	RZR24PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]		Btu/h	18,000	24,000
SEER (Rated)			18.6	17.6
EER (Rated)		Btu/h-W	12.7	10.2
Indoor unit			**FAQ18PVJU**	**FAQ24PVJU**
Color			White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)
Dimensions	H×W×D	in (mm)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 229)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 229)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 14 × 18	2 × 14 × 18
	Face area	ft² (m²)	2.29 (0.7)	2.29 (0.7)
Fan	Model		QCL9686M	QCL9686M
	Type		Cross flow fan	Cross flow fan
	Motor output	W	43	43
	Airflow rate (H/L)	cfm (m^3/min)	500/400 (14/11)	635/470 (18/13)
Air filter			Resin net (Washable)	Resin net (Washable)
Mass (Weight)		Lbs (kg)	31 (14)	31 (14)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5)(Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8)(Flare connection)
	Drain	in (mm)	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E818	BRC7E818
Outdoor unit			**RZR18PVJU**	**RZR24PVJU**
Color			Ivory	Ivory
Dimensions	H×W×D	in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7
Fan	Model		P47N11F	P47N11F
	Type		Propeller fan	Propeller fan
	Motor output	W	70	70
	Airflow rate	cfm (m^3/min)	1,835 (52)	1,835 (52)
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)
Ref. oil			Refer to the name plate of compressor.	Refer to the name plate of compressor.
Drawing Number			C: 4D071677	C: 4D071677

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB /19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.

3.1.4 FBQ

Model	Indoor unit		FBQ18PVJU	FBQ24PVJU	FBQ30PVJU
	Outdoor unit		RZR18PVJU	RZR24PVJU	RZR30PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]		Btu/h	18,000	24,000	30,000
SEER (Rated)			17.5	16.5	16.0
EER (Rated)		Btu/h-W	14.1	12.0	10.5
Indoor unit			**FBQ18PVJU**	**FBQ24PVJU**	**FBQ30PVJU**
Color			Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D	in (mm)	11–13/16 × 39–3/8 × 27–9/16 (300 x 1000 x 700)	11–13/16 × 39–3/8 × 27–9/16 (300 x 1000 x 700)	11–13/16 × 39–3/8 × 27–9/16 (300 x 1000 x 700)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m²)	2.68 (0.8)	2.68 (0.8)	2.68 (0.8)
Fan	Model		—	—	—
	Type		Sirocco fan	Sirocco fan	Sirocco fan
	Motor output	W	350	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	635/582/529 (18 / 16.5 /15)	688/618/565 (19.5 / 17.5 / 16)	882/794/706 (25 / 22.5 / 20)
	External static pressure	"Wg	Standard 0.40 (0.80–0.20 [3])	Standard 0.40 (0.80–0.20 [3])	Standard 0.40 (0.80–0.20 [3])
Air filter			Note [4]	Note [4]	Note [4]
Mass (Weight)		Lbs (kg)	80 (36)	80 (36)	80 (36)
Piping connections	Liquid	in (mm)	ϕ1/4 (6.4) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ1/2 (12.7) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))
Remote controller (option)	Wired		BRC1E71	BRC1E71	BRC1E71
	Wireless		BRC4C82	BRC4C82	BRC4C82
Outdoor unit			**RZR18PVJU**	**RZR24PVJU**	**RZR30PVJU**
Color			Ivory	Ivory	Ivory
Dimensions	H×W×D	in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7	1.7
Fan	Model		P47N11F	P47N11F	P47N11F
	Type		Propeller fan	Propeller fan	Propeller fan
	Motor output	W	70	70	70
	Airflow rate	cfm (m^3/min)	1,835 (52)	1,835 (52)	1,835 (52)
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A	R-410A
	Charge	Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	0.75 (25.4)	0.75 (25.4)	0.75 (25.4)
Drawing Number			C: 4D074134	C: 4D074134	C: 4D074134

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB /19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. External static pressure is changeable in 14 stages within the ( ) range by remote controller.
4. An air filter is not a standard accessory, but should be mounted in the duct system of the suction side. Select dust collection efficiency of (gravity method) 50% or more.

Model	Indoor unit		FBQ36PVJU	FBQ42PVJU
	Outdoor unit		**RZR36PVJU**	**RZR42PVJU**
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 2]		Btu/h	36,000	42,000
SEER (Rated)			17.5	16.0
EER (Rated)		Btu/h-W	11.2	10.2
Indoor unit			**FBQ36PVJU**	**FBQ42PVJU**
Color			Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D	in (mm)	11–13/16 × 55–1/8 × 27–9/16 (300 x 1400 x 700)	11–13/16 × 55–1/8 × 27–9/16 (300 x 1400 x 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m²)	4.12 (1.3)	4.12 (1.3)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	1130/953/812 (32/27/23)	1377/1165/988 (39/33/28)
	External static pressure	"Wg	Standard 0.40 (0.80–0.20[3])	Standard 0.40 (0.80–0.20[3])
Air filter			Note [4]	Note [4]
Mass (Weight)		Lbs (kg)	102 (46)	102 (46)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZR36PVJU**	**RZR42PVJU**
Color			Ivory white (5Y7. 5/1)	Ivory white (5Y7. 5/1)
Dimensions	H×W×D	in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 13	2 × 60 × 13
	Face area	ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model		JT100G-VDLW@T	JT100G-VDLW@T
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	2.5	3.0
Fan	Model		KFD-325-70-8C2	KFD-325-70-8C2
	Type		Propeller fan	Propeller fan
	Motor output	W	70×2	70×2
	Airflow rate	cfm (m^3/min)	3,740 (106)	3,740 (106)
Mass (Weight)		Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	25-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	164 (50)	164 (50)
Refrigerant	Model		R-410A	R-410A
	Charge	Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	1.5 (50)	1.5 (50)
Drawing Number			C: 4D074135	C: 4D074135

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. External static pressure is changeable in 14 stages within the ( ) range by remote controller.
4. An air filter is not a standard accessory, but should be mounted in the duct system of the suction side. Select dust collection efficiency of (gravity method) 50% or more.

3.2 Heat Pump

3.2.1 FCQ / Ceiling mounted cassette type (Round flow)

Model	Indoor unit			FCQ18PAVJU	FCQ24PAVJU	FCQ30PAVJU
	Outdoor unit			RZQ18PVJU9	RZQ24PVJU9	RZQ30PVJU
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 4]			Btu/h	18,000	24,000	30,000
Heating capacity [2, 4]			Btu/h	20,000	27,000	34,000
Heating capacity [3, 4]			Btu/h	12,000	18,000	22,000
SEER (Rated)				17.2	16.8	15.8
EER (Rated)			Btu/h-W	13.9	12.0	10.2
HSPF (Rated)				10.1	9.7	9.7
Indoor unit				**FCQ18PAVJU**	**FCQ24PAVJU**	**FCQ30PAVJU**
Color				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D		in (mm)	9–11/16 × 33–1/16 × 33–1/16 (246 x 840 x 840)	9–11/16 × 33–1/16 × 33–1/16 (246 x 840 x 840)	9–11/16 × 33–1/16 × 33–1/16 (246 x 840 x 840)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 6 × 21	2 × 10 × 21	2 × 10 × 21
	Face area		ft² (m²)	2.87 (0.9)	4.80 (1.5)	4.80 (1.5)
Fan	Model			QTS48C15M	QTS48C15M	QTS48C15M
	Type			Turbo fan	Turbo fan	Turbo fan
	Motor output		W	56	56	56
	Airflow rate (HH/H/L)		cfm (m^3/min)	560/470/390 (16/13/11)	780/620/470 (22/16/13)	830/670/530 (24/19/15)
Air filter				—	—	—
Mass (Weight)			Lbs (kg)	43 (19.5)	48.5 (22)	48.5 (22)
Piping connections	Liquid		in (mm)	ϕ1/4 (6.4) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ1/2 (12.7) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1 (25.4))
Remote controller (option)		Wired		BRC1E71	BRC1E71	BRC1E71
		Wireless		—	—	—
Decoration panels (option)	Model			BYCP125K–W1	BYCP125K–W1	BYCP125K–W1
	Color			Fresh white	Fresh white	Fresh white
	Dimensions	H×W×D	in (mm)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	12.2 (5.5)	12.2 (5.5)	12.2 (5.5)
Outdoor unit				**RZQ18PVJU9**	**RZQ24PVJU9**	**RZQ30PVJU**
Color				Ivory	Ivory	Ivory
Dimensions	H×W×D		in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area		ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model			2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type			Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output		kW	1.7	1.7	1.7
Fan	Model			P47N11F	P47N11F	P47N11F
	Type			Propeller fan	Propeller fan	Propeller fan
	Motor output		W	70	70	70
	Airflow rate		cfm (m^3/min)	1,835 (52)	1,835 (52)	1,835 (52)
Mass (Weight)			Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid		in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8)(Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4)(Hole)	ϕ1 (25.4) (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Inverter overload protector.Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Inverter overload protector.Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Inverter overload protector.Fusible plugs. Fuse.
Capacity step			%	35-100	30-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference		ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model			R-410A	R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil	Model			Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge		L (oz)	0.75 (25)	0.75 (25)	0.75 (25)
Drawing Number				C: 4D074128	C: 4D074128	C: 4D074128

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Indoor temp. : 70°FDB (21°CDB)/ outdoor temp. : 17°FDB, 15°FWB (-8.3°CDB /-9.4°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
4. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Ceiling mounted cassette type (Round flow), continued

Model	Indoor unit			FCQ36PAVJU	FCQ42PAVJU
	Outdoor unit			RZQ36PVJU9	RZQ42PVJU9
Power supply				1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 4]			Btu/h	36,000	42,000
Heating capacity [2, 4]			Btu/h	40,000	47,000
Heating capacity [3, 4]			Btu/h	21,000	25,000
SEER (Rated)				17.5	16.0
EER (Rated)			Btu/h-W	11.2	10.2
HSPF (Rated)				8.4	8.5
Indoor unit				**FCQ36PAVJU**	**FCQ42PAVJU**
Color				Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D		in (mm)	11–5/16 × 33–1/16 × 33–1/16 (287 x 840 x 840)	11–5/16 × 33–1/16 × 33–1/16 (287 x 840 x 840)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 12 × 21	2 × 12 × 21
	Face area		ft² (m²)	5.76 (1.8)	5.76 (1.8)
Fan	Model			QTS48C15M	QTS48C15M
	Type			Turbo fan	Turbo fan
	Motor output		W	120	120
	Airflow rate (HH/H/L)		cfm (m^3/min)	1180/910/700 (33/26/20)	1220/970/790 (35/28/22)
Air filter				—	—
Mass (Weight)			Lbs (kg)	55 (25)	55 (25)
Piping connections	Liquid		in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ5/8 (15.8)(Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1(25.4))	VP25 (External dia. 1–1/4 (31.8), Internal dia. 1(25.4))
Remote controller (option)		Wired		BRC1E71	BRC1E71
		Wireless		—	—
Decoration panels (option)	Model			BYCP125K–W1	BYCP125K–W1
	Color			Fresh white	Fresh white
	Dimensions	H×W×D	in (mm)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)	2 × 37–3/8 × 37–3/8 (51 x 949 x 949)
	Air filter			Resin net (with mold resistant)	Resin net (with mold resistant)
	Weight		Lbs (kg)	12.2 (5.5)	12.2 (5.5)
Outdoor unit				**RZQ36PVJU9**	**RZQ42PVJU9**
Color				Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D		in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type			Cross fin coil	Cross fin coil
	Rows×Stages×FPI			2 × 60 × 13	2 × 60 × 13
	Face area		ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model			JT100G-VDLW@T	JT100G-VDLW@T
	Type			Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output		kW	2.5	3.0
Fan	Model			KFD–325–70–8C2	KFD–325–70–8C2
	Type			Propeller fan	Propeller fan
	Motor output		W	70 × 2	70 × 2
	Airflow rate		cfm (m^3/min)	3,740 (106)	3,740 (106)
Mass (Weight)			Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid		in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas		in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain		in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices				High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Inverter overload protector. Fusible plugs. Fuse.
Capacity step			%	25-100	25-100
Refrigerant control				Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length		ft (m)	25 (7.5)	25 (7.5)
	Max. length		ft (m)	230 (70)	230 (70)
	Max. height difference		ft (m)	164 (50)	164 (50)
Refrigerant	Model			R-410A	R-410A
	Charge (factory charge)		Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil	Model			Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge		L (oz)	1.5 (51)	1.5 (51)
Drawing Number				C: 4D074129	C: 4D074129

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Indoor temp. : 70°FDB (21°CDB)/ outdoor temp. : 17°FDB, 15°FWB (-8.3°CDB /-9.4°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
4. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.2 FHQ

Ceiling suspended type

Model	Indoor unit		FHQ18PVJU	FHQ24PVJU	FHQ30PVJU
	Outdoor unit		RZQ18PVJU9	RZQ24PVJU9	RZQ30PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 3]		Btu/h	18,000	24,000	30,000
Heating capacity [2, 3]		Btu/h	20,000	27,000	34,000
SEER (Rated)			18.0	18.1	17.2
EER (Rated)		Btu/h-W	14.0	12.6	10.5
HSPF (Rated)			11.1	10.0	8.4
Indoor unit			**FHQ18PVJU**	**FHQ24PVJU**	**FHQ30PVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)
Fan	Model		—	—	—
	Type		Sirocco fan	Sirocco fan	Sirocco fan
	Motor output	W	130	130	130
	Airflow rate (H/L)	cfm (m^3/min)	790/670 (22/19)	790/670 (22/19)	790/670 (22/19)
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)	90 (41)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare Connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E71	BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83	BRC7E83
Outdoor unit			**RZQ18PVJU9**	**RZQ24PVJU9**	**RZQ30PVJU**
Color			Ivory	Ivory	Ivory
Dimensions	H×W×D	in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7	1.7
Fan	Model		P47N11F	P47N11F	P47N11F
	Type		Propeller fan	Propeller fan	Propeller fan
	Motor output	W	70	70	70
	Airflow rate	cfm (m^3/min)	1,835 (52)	1,835 (52)	1,835 (52)
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	0.75 (25.4)	0.75 (25.4)	0.75 (25.4)
Drawing Number			C: 4D063925E	C: 4D063925E	C: 4D063925E

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

Ceiling suspended type, continued

Model	Indoor unit		FHQ36MVJU	FHQ42MVJU
	Outdoor unit		RZQ36PVJU9	RZQ42PVJU9
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 3]		Btu/h	36,000	40,500
Heating capacity [2, 3]		Btu/h	37,500	39,500
SEER (Rated)			14.0	13.8
EER (Rated)		Btu/h-W	10.2	9.5
HSPF (Rated)			8.1	8.2
Indoor unit			**FHQ36MVJU**	**FHQ42MVJU**
Color			White (10Y9/0.5)	White (10Y9/0.5)
Dimensions	H×W×D	in (mm)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)	7–11/16 × 62–5/8 × 26–3/4 (195 x 1591 x 680)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 12 × 15 + 2 × 10 × 15	2 × 12 × 15 + 2 × 10 × 15
	Face area	ft² (m²)	3.66 + 2.95 (1.1 + 0.9)	3.66 + 2.95 (1.1 + 0.9)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	130	130
	Airflow rate (H/L)	cfm (m^3/min)	830/670 (24/19)	850/700 (24/19)
Air filter			Resin net (With mold resistant)	Resin net (With mold resistant)
Mass (Weight)		Lbs (kg)	90 (41)	90 (41)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP20 (External dia. 1(25.4), Internal dia. 3/4 (19.1))	VP20 (External dia. 1 (25.4), Internal dia. 3/4 (19.1))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E83	BRC7E83
Outdoor unit			**RZQ36PVJU9**	**RZQ42PVJU9**
Color			Ivory white (5Y7.5/1)	Ivory white (5Y7.5/1)
Dimensions	H×W×D	in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 13	2 × 60 × 13
	Face area	ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model		JT100G-VDLW@T	JT100G-VDLW@T
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	2.5	3.0
Fan	Model		KFD–325–70–8C2	KFD–325–70–8C2
	Type		Propeller Fan	Propeller Fan
	Motor output	W	70×2	70×2
	Airflow rate	cfm (m^3/min)	3,740 (106)	3,740 (106)
Mass (Weight)		Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	25-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	164 (50)	164 (50)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	1.5 (50.7)	1.5 (50.7)
Drawing Number			C: 4D071674	C: 4D071674

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.3 FAQ

Wall mounted type

Model	Indoor unit		FAQ18PVJU	FAQ24PVJU
	Outdoor unit		RZQ18PVJU9	RZQ24PVJU9
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 3]		Btu/h	18,000	24,000
Heating capacity [2, 3]		Btu/h	20,000	26,000
SEER (Rated)			18.6	17.6
EER (Rated)		Btu/h-W	12.7	10.2
HSPF (Rated)			8.7	9.1
Indoor unit			**FAQ18PVJU**	**FAQ24PVJU**
Color			White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)
Dimensions	H×W×D	in (mm)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 229)	11–3/8 × 41–3/8 × 9 (289 x 1051 x 229)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 14 × 18	2 × 14 × 18
	Face area	ft² (m²)	2.29 (0.7)	2.29 (0.7)
Fan	Model		QCL9686M	QCL9686M
	Type		Cross flow fan	Cross flow fan
	Motor output	W	43	43
	Airflow rate (H/L)	cfm (m^3/min)	500/400 (14/11)	635/470 (18/13)
Air filter			Resin net (Washable)	Resin net (Washable)
Mass (Weight)		Lbs (kg)	31 (14)	31 (14)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5)(Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))	VP13 (External dia. 11/16 (17.5), Internal dia. 1/2 (12.7))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC7E818	BRC7E818
Outdoor unit			**RZQ18PVJU9**	**RZQ24PVJU9**
Color			Ivory	Ivory
Dimensions	H×W×D	in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7
Fan	Model		P47N11F	P47N11F
	Type		Propeller fan	Propeller fan
	Motor output	W	70	70
	Airflow rate	cfm (m^3/min)	1,835 (52)	1,835 (52)
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A
	Charge (factory charge)	Lbs (kg)	5.1 (2.3)	5.1 (2.3)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	0.75 (25.4)	0.75 (25.4)
Drawing Number			C: 4D062151F	C: 4D062151F

Notes:

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

3.2.4 FBQ

Model	Indoor unit		FBQ18PVJU	FBQ24PVJU	FBQ30PVJU
	Outdoor unit		RZQ18PVJU9	RZQ24PVJU9	RZQ30PVJU
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 4]		Btu/h	18,000	24,000	30,000
Heating capacity [2, 4]		Btu/h	20,000	27,000	34,000
Heating capacity [3, 4]		Btu/h	12,000	18,000	22,000
SEER (Rated)			17.5	16.5	16.0
EER (Rated)		Btu/h-W	14.1	12.0	10.5
HSPF (Rated)			10.6	10.5	9.2
Indoor unit			**FBQ18PVJU**	**FBQ24PVJU**	**FBQ30PVJU**
Color			Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D	in (mm)	11–13/16 × 39–3/8 × 27–9/16 (300 x 1000 x 700)	11–13/16 × 39–3/8 × 27–9/16 (300 x 1000 x 700)	11–13/16 × 39–3/8 × 27–9/16 (300 x 1000 x 700)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m²)	2.68 (0.8)	2.68 (0.8)	2.68 (0.8)
Fan	Model		—	—	—
	Type		Sirocco fan	Sirocco fan	Sirocco fan
	Motor output	W	350	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	635/582/529 (18/17/15)	688/618/565 (20/18/16)	882/794/706 (25/23/20)
	External static pressure	"Wg	Standard 0.40 (0.80–0.20 [5])	Standard 0.40 (0.80–0.20 [5])	Standard 0.40 (0.80–0.20 [5])
Air filter			Note [6]	Note [6]	Note [6]
Mass (Weight)		Lbs (kg)	80 (36)	80 (36)	80 (36)
Piping connections	Liquid	in (mm)	ϕ1/4 (6.4) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ1/2 (12.7) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8)(Flare connection)
	Drain	in (mm)	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))
Remote controller (option)	Wired		BRC1E71	BRC1E71	BRC1E71
	Wireless		BRC4C82	BRC4C82	BRC4C82
Outdoor unit			**RZQ18PVJU9**	**RZQ24PVJU9**	**RZQ30PVJU**
Color			Ivory	Ivory	Ivory
Dimensions	H×W×D	in (mm)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)	30–5/16 × 35–7/16 × 12–5/8 (770 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 34 × 18	2 × 34 × 18	2 × 34 × 18
	Face area	ft² (m²)	7.1 (2.2)	7.1 (2.2)	7.1 (2.2)
Comp.	Model		2YC63HXD#ED	2YC63HXD#ED	2YC63HXD#ED
	Type		Hermetically sealed swing type	Hermetically sealed swing type	Hermetically sealed swing type
	Motor output	kW	1.7	1.7	1.7
Fan	Model		P47N11F	P47N11F	P47N11F
	Type		Propeller fan	Propeller fan	Propeller fan
	Motor output	W	70	70	70
	Airflow rate	cfm (m^3/min)	1,835 (52)	1,835 (52)	1,835 (52)
Mass (Weight)		Lbs (kg)	150 (68)	150 (68)	150 (68)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)	ϕ1 (25.4) (Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	35-100	30-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	164 (50)	164 (50)	164 (50)
	Max. height difference	ft (m)	98 (30)	98 (30)	98 (30)
Refrigerant	Model		R-410A	R-410A	R-410A
	Charge	Lbs (kg)	5.1 (2.3)	5.1 (2.3)	5.1 (2.3)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	0.75 (25.4)	0.75 (25.4)	0.75 (25.4)
Drawing Number			C: 4D074130	C: 4D074130	C: 4D074130

1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Indoor temp. : 70°FDB (21°CDB)/ outdoor temp. : 17°FDB, 15°FWB (-8.3°CDB /-9.4°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
4. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
5. External static pressure is changeable in 14 stages within the ( ) range by remote controller.
6. An air filter is not a standard accessory, but should be mounted in the duct system of the suction side.Select dust collection efficiency of (gravity method) 50% or more.

Model	Indoor unit		FBQ36PVJU	FBQ42PVJU
	Outdoor unit		RZQ36PVJU9	RZQ42PVJU9
Power supply			1 phase, 208/230V, 60Hz	1 phase, 208/230V, 60Hz
Cooling capacity [1, 4]		Btu/h	36,000	42,000
Heating capacity [2, 4]		Btu/h	40,000	47,000
Heating capacity [3, 4]		Btu/h	21,000	25,000
SEER (Rated)			17.5	16.0
EER (Rated)		Btu/h-W	11.2	10.2
HSPF (Rated)			9.1	8.8
Indoor unit			**FBQ36PVJU**	**FBQ42PVJU**
Color			Galvanized steel plate	Galvanized steel plate
Dimensions	H×W×D	in (mm)	11–13/16 × 55–1/8 × 27–9/16 (300 x 1400 x 700)	11–13/16 × 55–1/8 × 27–9/16 (300 x 1400 x 700)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		3 × 16 × 15	3 × 16 × 15
	Face area	ft² (m²)	4.12 (1.3)	4.12 (1.3)
Fan	Model		—	—
	Type		Sirocco fan	Sirocco fan
	Motor output	W	350	350
	Airflow rate (HH/H/L)	cfm (m^3/min)	1130/953/812 (32/27/23)	1377/1165/988 (39/33/28)
	External static pressure	"Wg	Standard 0.40 (0.80–0.20 [5])	Standard 0.40 (0.80–0.20 [5])
Air filter			Note [6]	Note [6]
Mass (Weight)		Lbs (kg)	102 (46)	102 (46)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))	VP25 (External dia. 1-1/4 (31.8), internal dia.1 (25.4))
Remote controller (option)	Wired		BRC1E71	BRC1E71
	Wireless		BRC4C82	BRC4C82
Outdoor unit			**RZQ36PVJU9**	**RZQ42PVJU9**
Color			Ivory white (5Y7. 5/1)	Ivory white (5Y7. 5/1)
Dimensions	H×W×D	in (mm)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)	52–15/16 × 35–7/16 × 12–5/8 (1345 x 900 x 321)
Coil	Type		Cross fin coil	Cross fin coil
	Rows×Stages×FPI		2 × 60 × 13	2 × 60 × 13
	Face area	ft² (m²)	12.2 (3.7)	12.2 (3.7)
Comp.	Model		JT100G-VDLW@T	JT100G-VDLW@T
	Type		Hermetically sealed scroll type	Hermetically sealed scroll type
	Motor output	kW	2.5	3.0
Fan	Model		KFD-325-70-8C2	KFD-325-70-8C2
	Type		Propeller fan	Propeller fan
	Motor output	W	70×2	70×2
	Airflow rate	cfm (m^3/min)	3,740 (106)	3,740 (106)
Mass (Weight)		Lbs (kg)	283 (128)	283 (128)
Piping connections	Liquid	in (mm)	ϕ3/8 (9.5) (Flare connection)	ϕ3/8 (9.5) (Flare connection)
	Gas	in (mm)	ϕ5/8 (15.8) (Flare connection)	ϕ5/8 (15.8) (Flare connection)
	Drain	in (mm)	ϕ1 (25.4) (Hole)	ϕ1 (25.4)(Hole)
Safety devices			High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.	High pressure switch. Outdoor fan driver overload protector. Thermal protector for indoor fan motor. Inverter overload protector. Fusible plugs. Fuse.
Capacity step		%	25-100	25-100
Refrigerant control			Electronic expansion valve	Electronic expansion valve
Ref. piping	Standard length	ft (m)	25 (7.5)	25 (7.5)
	Max. length	ft (m)	230 (70)	230 (70)
	Max. height difference	ft (m)	164 (50)	164 (50)
Refrigerant	Model		R-410A	R-410A
	Charge	Lbs (kg)	8.8 (4)	8.8 (4)
Ref. oil	Model		Refer to the name plate of compressor.	Refer to the name plate of compressor.
	Charge	L (oz)	1.5 (50.7)	1.5 (50.7)
Drawing Number			C: 4D074131	C: 4D074131

Notes:

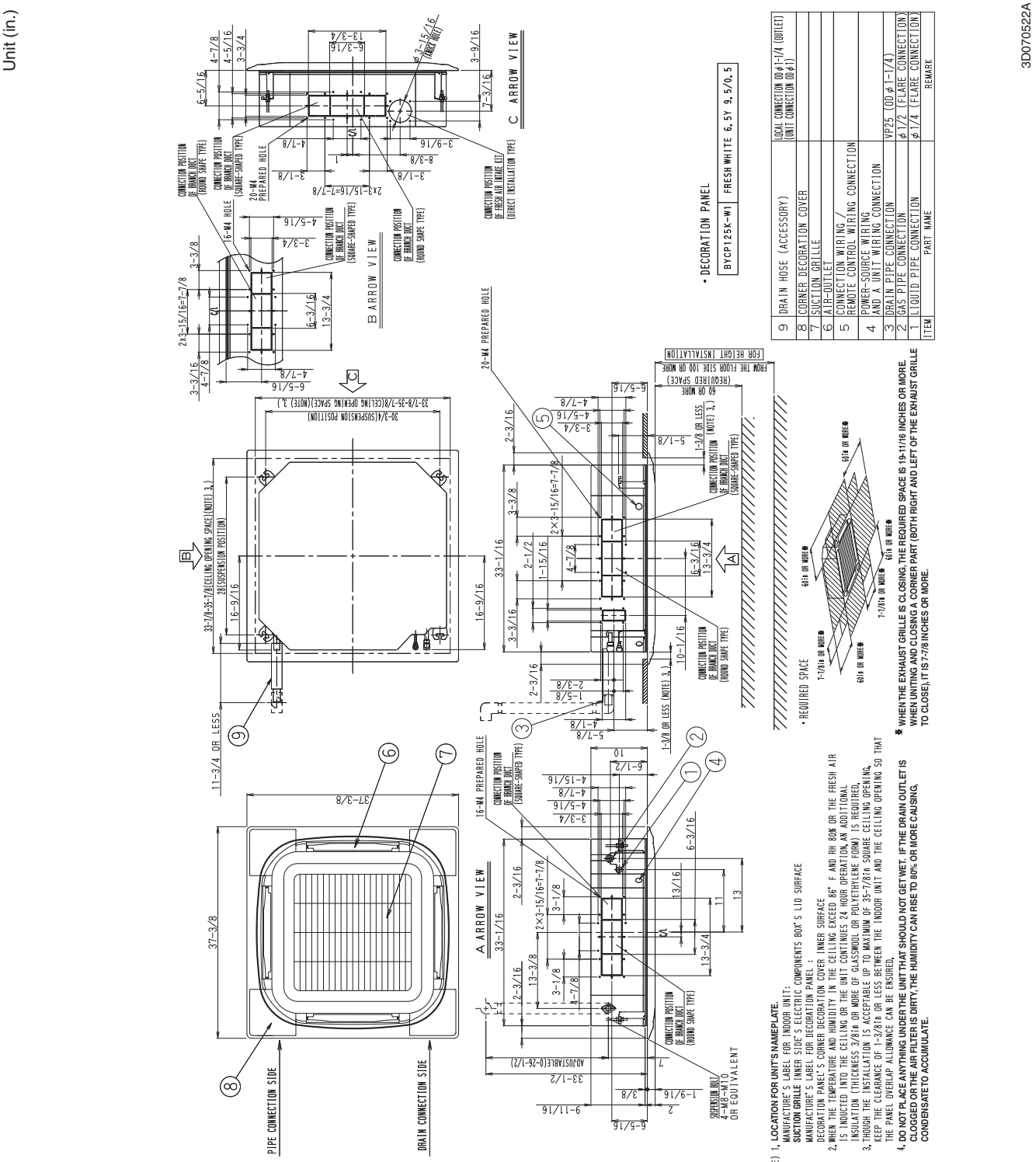
1. Indoor temp. : 80°FDB, 67°FWB (27°CDB)/(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
2. Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3°CDB / 6°CWB)/ Equivalent piping length : 25 ft (7.5 m), level difference : 0.
3. Indoor temp. : 70°FDB (21°CDB)/ outdoor temp. : 17°FDB, 15°FWB (-8.3°CDB /-9.4°CWB) / Equivalent piping length : 25 ft (7.5 m), level difference : 0.
4. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
5. External static pressure is changeable in 14 stages within the ( ) range by remote controller.
6. An air filter is not a standard accessory, but should be mounted in the duct system of the suction side.Select its dust collection efficiency of (gravity method) 50% or more.

4. Dimensions and service space

4.1 Indoor unit

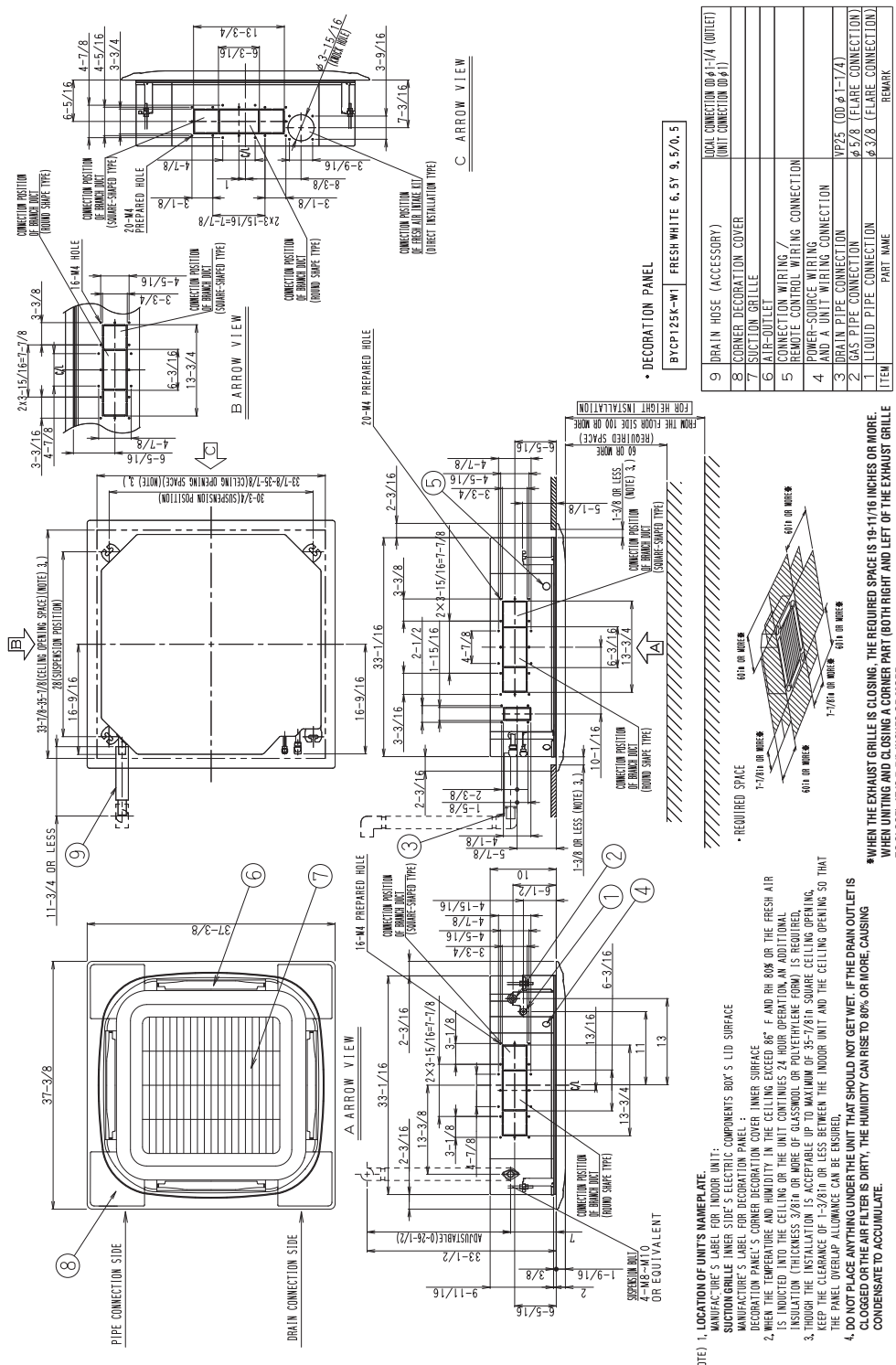
4.1.1 FCQ (Ceiling mounted cassette type)

FCQ18PAVJU



FCQ24PAVJU / FCQ30PAVJU

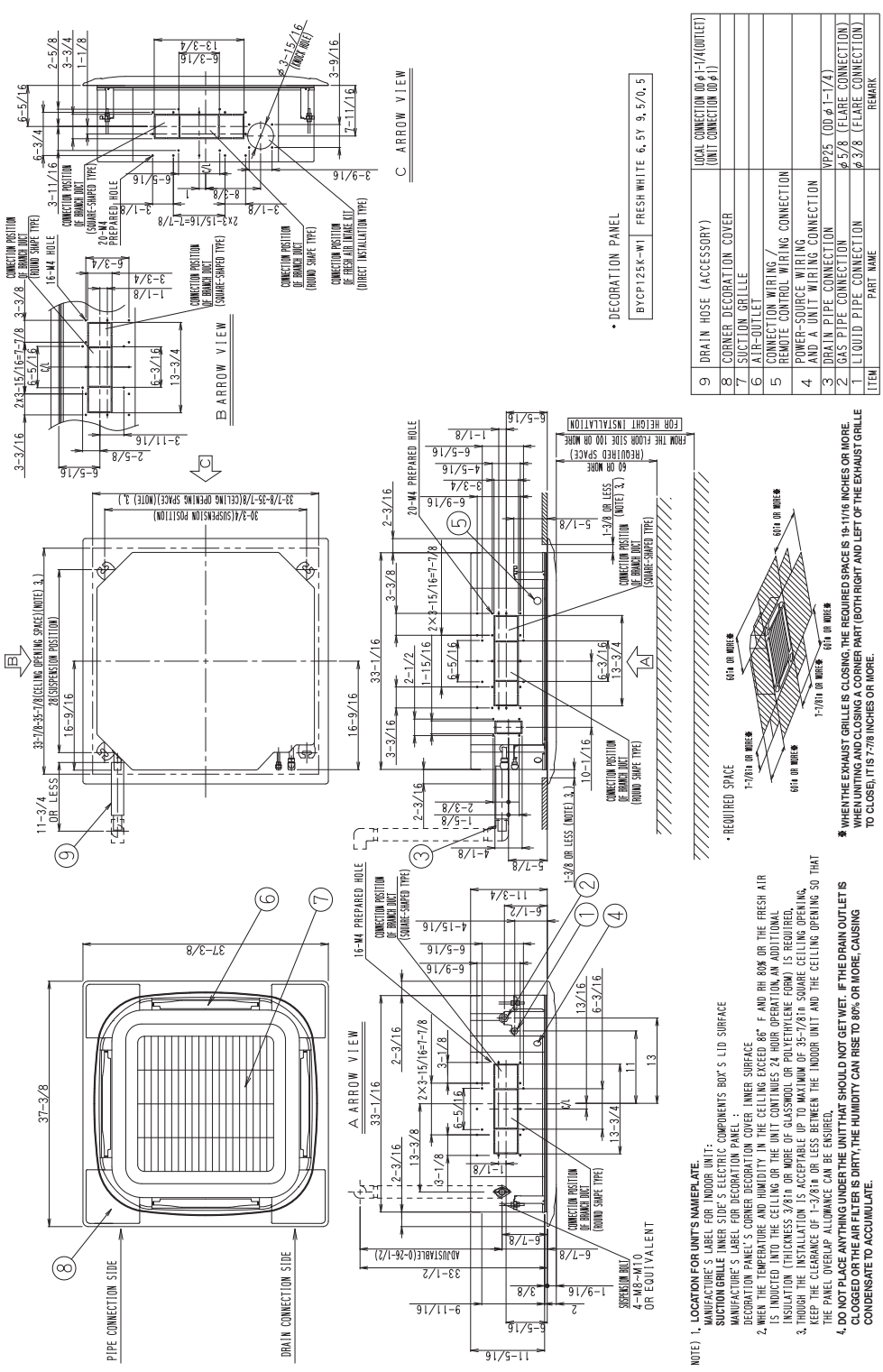
Unit (in.)



3D070524A

FCQ36PAVJU / FCQ42PAVJU

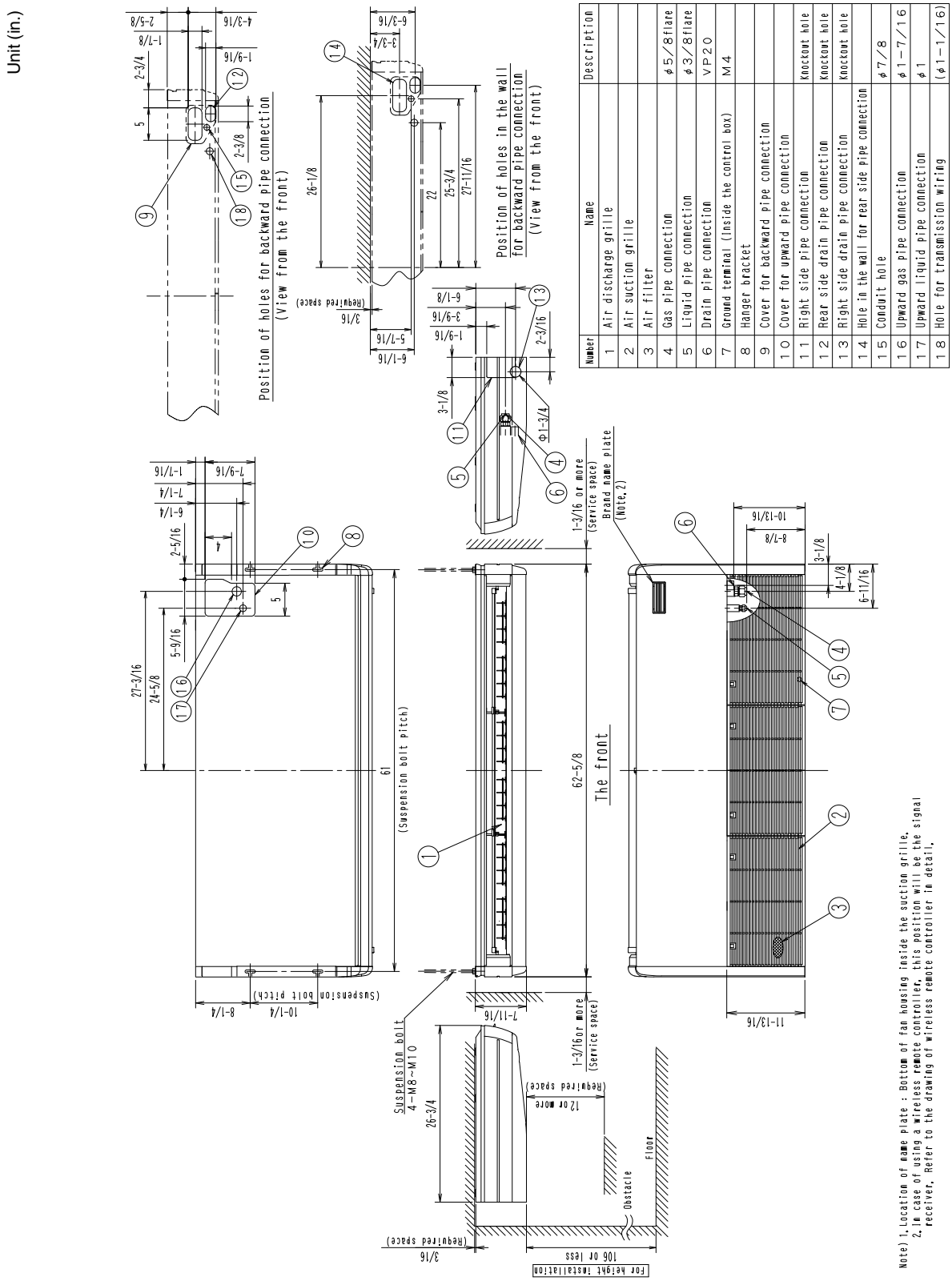
Unit (in.)



3D070523A

4.1.2 FHQ (Ceiling suspended type)

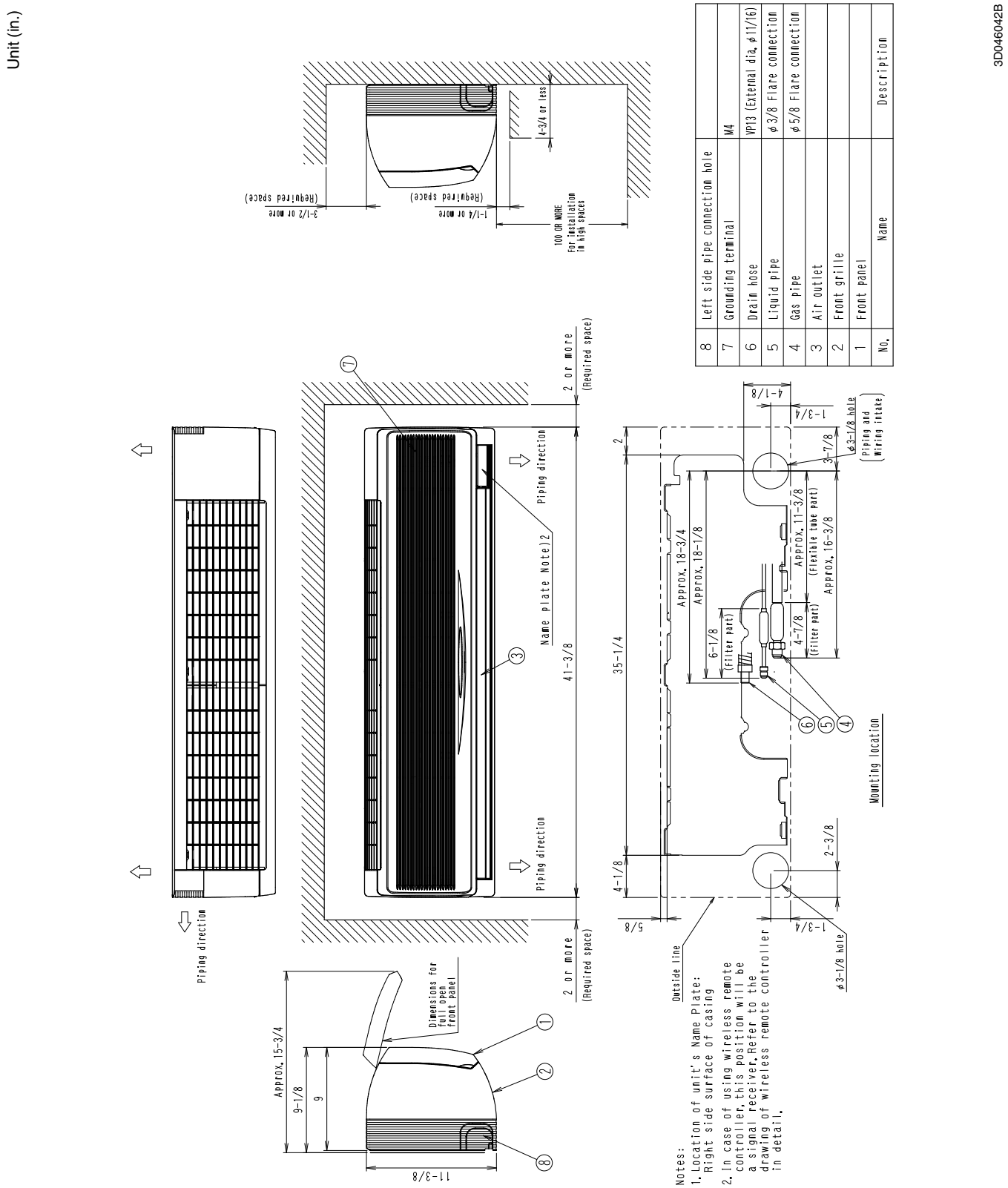
FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU



Number	Name	Description
1	Air discharge grille	
2	Air suction grille	
3	Air filter	
4	Gas pipe connection	φ5/8flare
5	Liquid pipe connection	φ3/8flare
6	Drain pipe connection	VP20
7	Ground terminal (inside the control box)	M4
8	Hanger bracket	
9	Cover for backward pipe connection	
10	Cover for upward pipe connection	
11	Right side pipe connection	Knockout hole
12	Rear side drain pipe connection	Knockout hole
13	Right side drain pipe connection	Knockout hole
14	Hole in the wall for rear side pipe connection	
15	Conduit hole	φ7/8
16	Upward gas pipe connection	φ1-7/16
17	Upward liquid pipe connection	φ1
18	Hole for transmission wiring	(φ1-1/16)

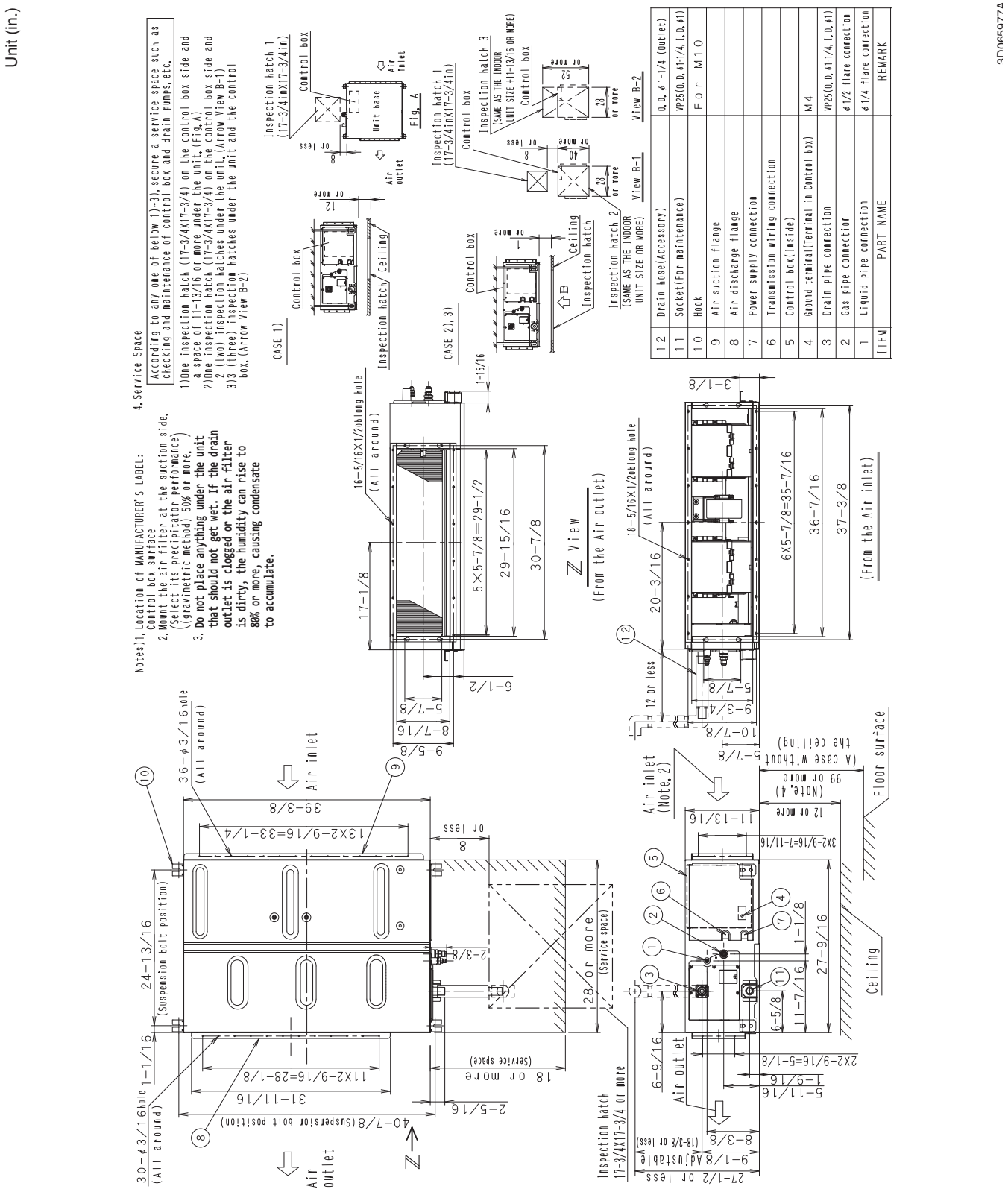
4.1.3 FAQ (Wall mounted type)

FAQ18PVJU / FAQ24PVJU



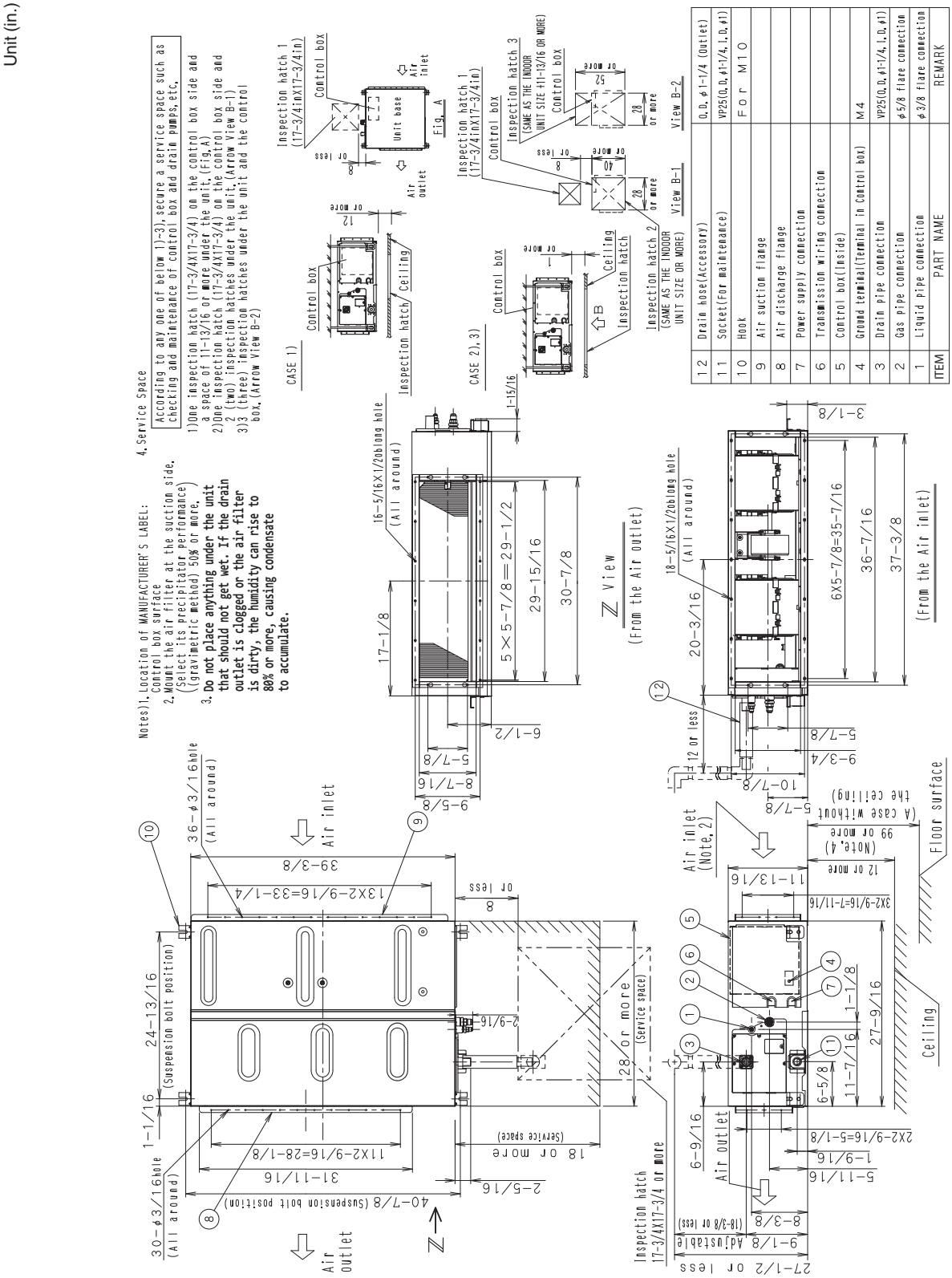
4.1.4 FBQ (Ceiling mounted duct type)

FBQ18PVJU



FBQ24PVJU / FBQ30PVJU

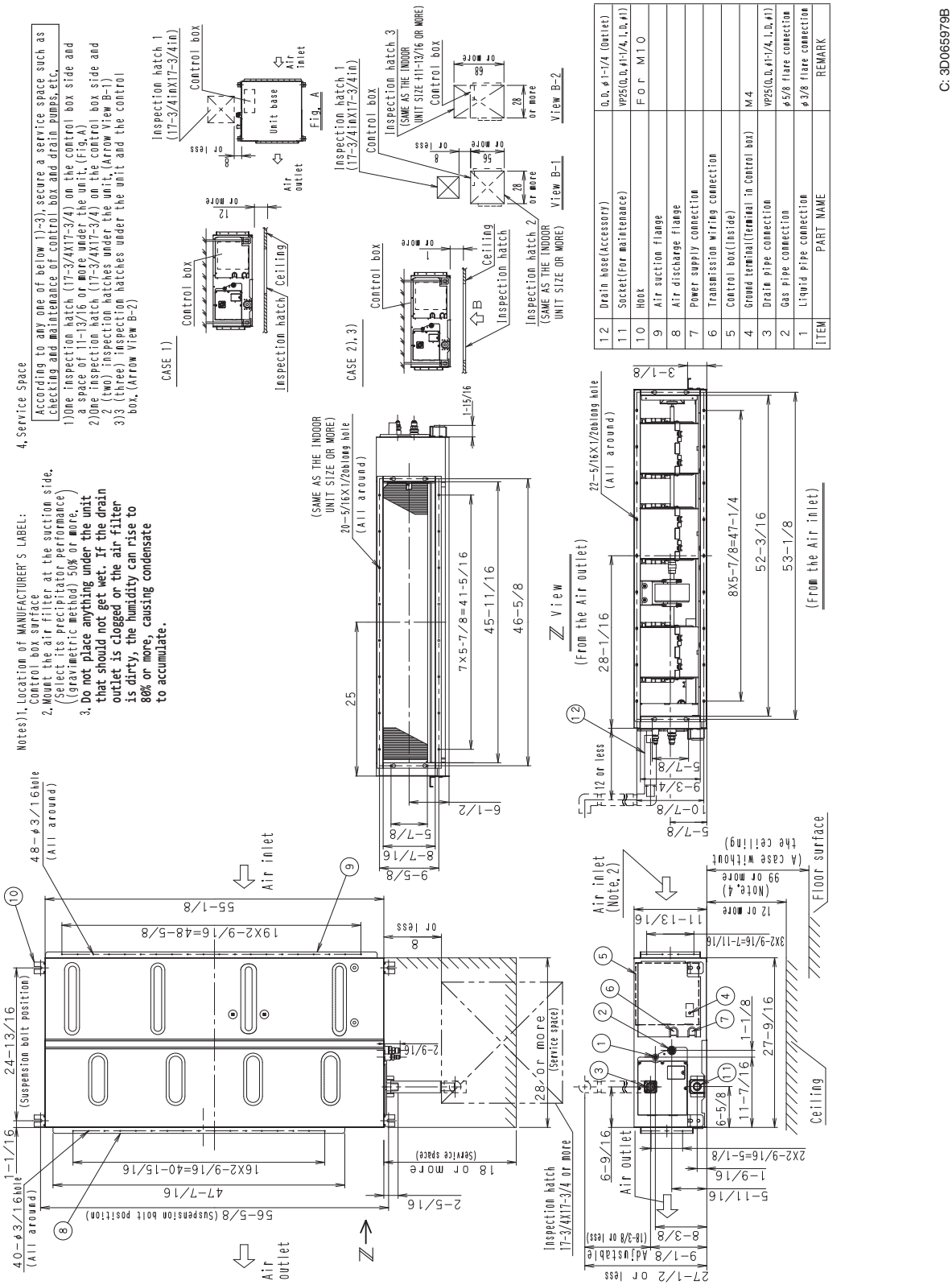
Unit (in.)



ITEM	PART NAME	REMARK
12	Drain hose(Accessory)	O.D. ø1-1/4 (Outlet)
11	Socket(For maintenance)	VP25(O.D. ø1-1/4, I.D. ø1)
10	Hook	For M10
9	Air suction flange	
8	Air discharge flange	
7	Power supply connection	
6	Transmission wiring connection	
5	Control box(Inside)	
4	Ground terminal(Terminal in Control box)	M4
3	Drain pipe connection	VP25(O.D. ø1-1/4, I.D. ø1)
2	Gas pipe connection	ø5/8 flare connection
1	Liquid pipe connection	ø3/8 flare connection

FBQ36PVJU / FBQ42PVJU

Unit (in.)

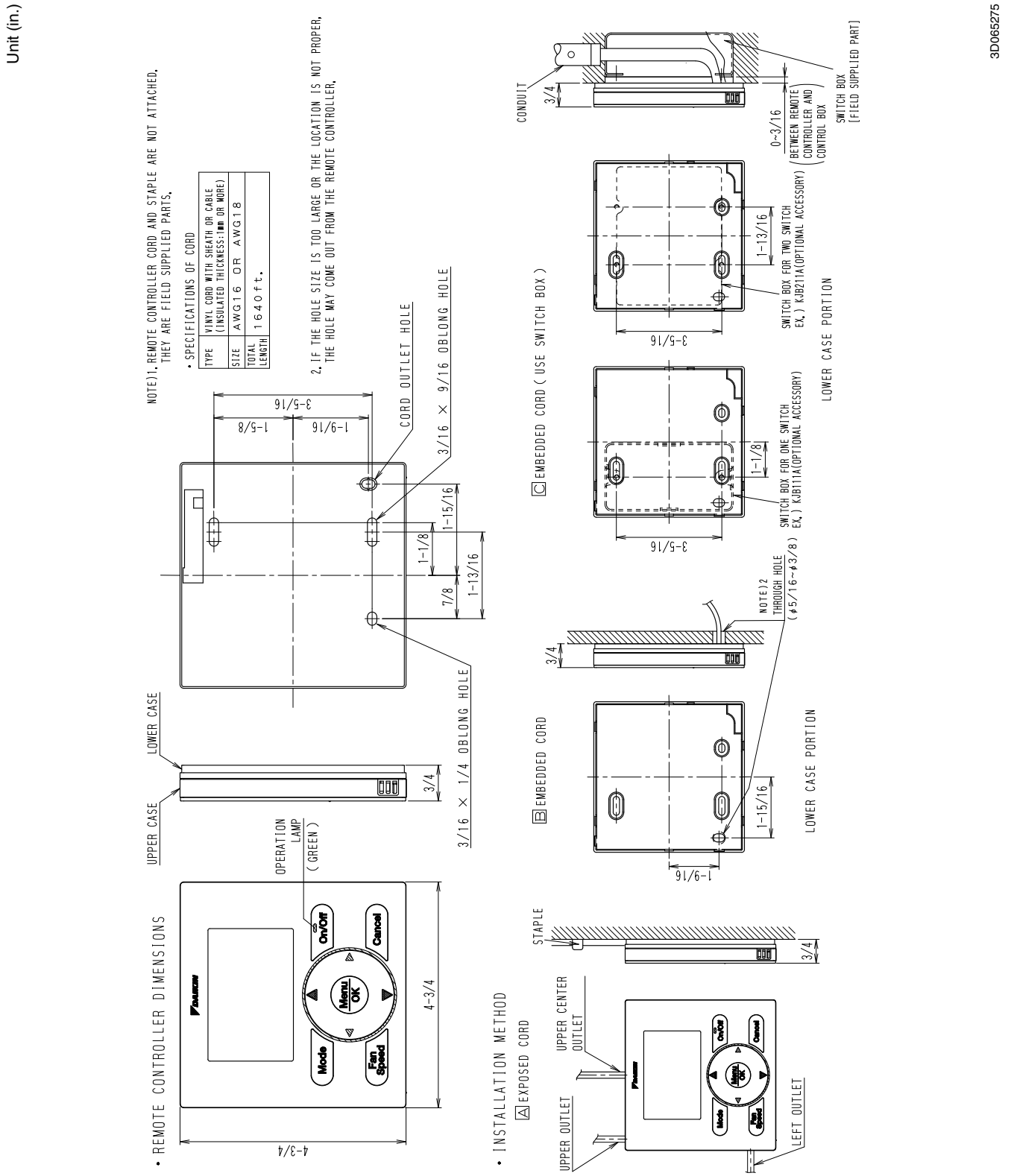


ITEM	PART NAME	REMARK
12	Drain hose(Accessory)	O.D. φ1-1/4 (Outlet)
11	Socket(For maintenance)	VP25(O.D. φ1-1/4, I.D. φ1)
10	Hook	For M10
9	Air suction flange	
8	Air discharge flange	
7	Power supply connection	
6	Transmission wiring connection	
5	Control box(Inside)	
4	Ground terminal(Terminal in Control box)	M4
3	Drain pipe connection	VP25(O.D. φ1-1/4, I.D. φ1)
2	Gas pipe connection	φ5/8 flare connection
1	Liquid pipe connection	φ3/8 flare connection

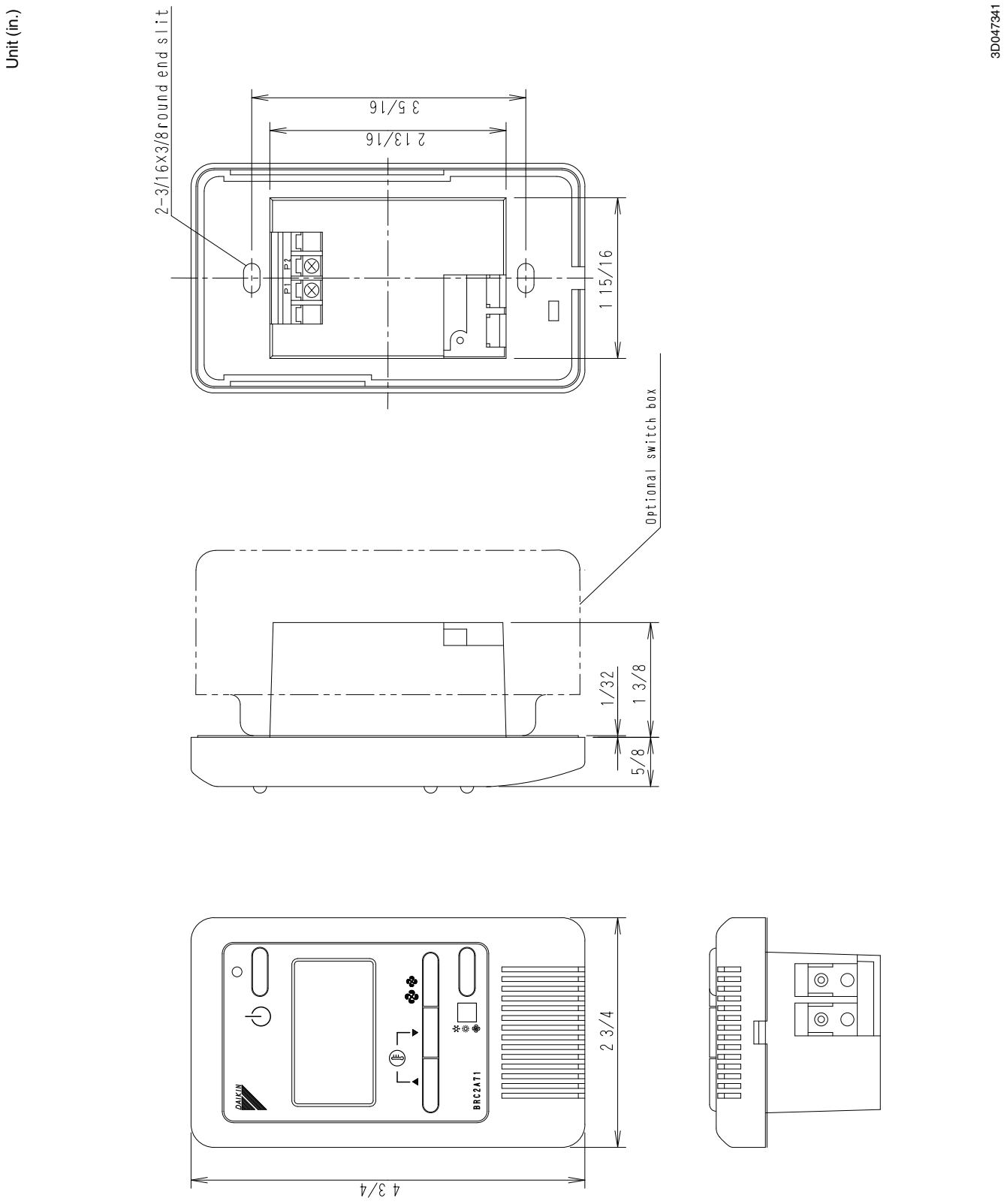
C: 3D065979B

4.2 Wired remote controller (Optional)

BRC1E71

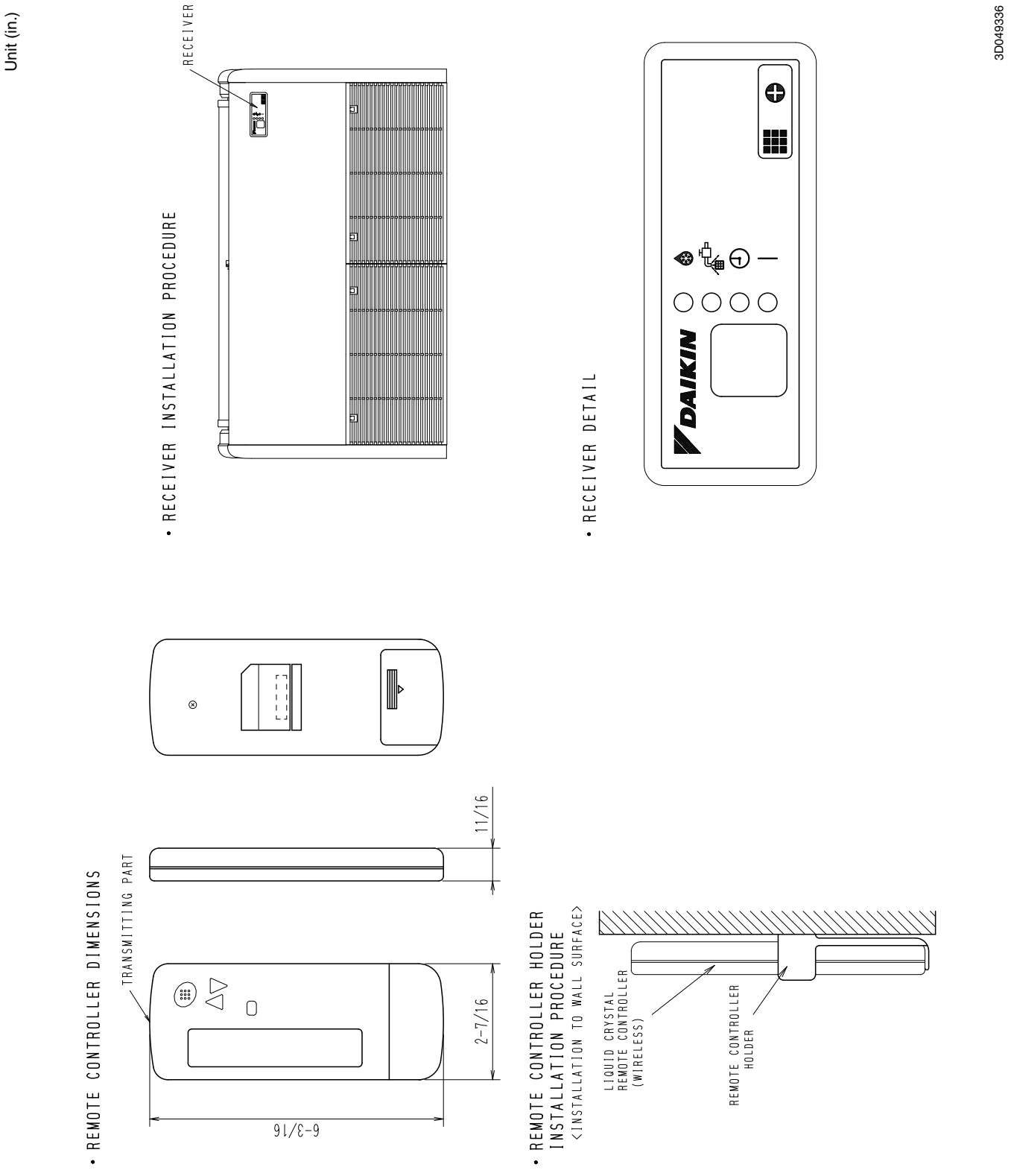


BRC2A71


Unit (in.)
3D047341
2-3/16X3/8round end slit
3 5/16
2 13/16
1 15/16
P1
P2
Optional switch box
1/32
1 3/8
5/8
2 3/4
4 3/4
DAIKIN
BRC2A71

4.3 Wireless remote controller (Optional)

BRC7E83 (for FHQ)



BRC7E818 (for FAQ)

Unit (in.)

3D049736

• RECEIVER INSTALLATION PROCEDURE

• RECEIVER DETAIL

• WIRELESS REMOTE CONTROLLER KIT

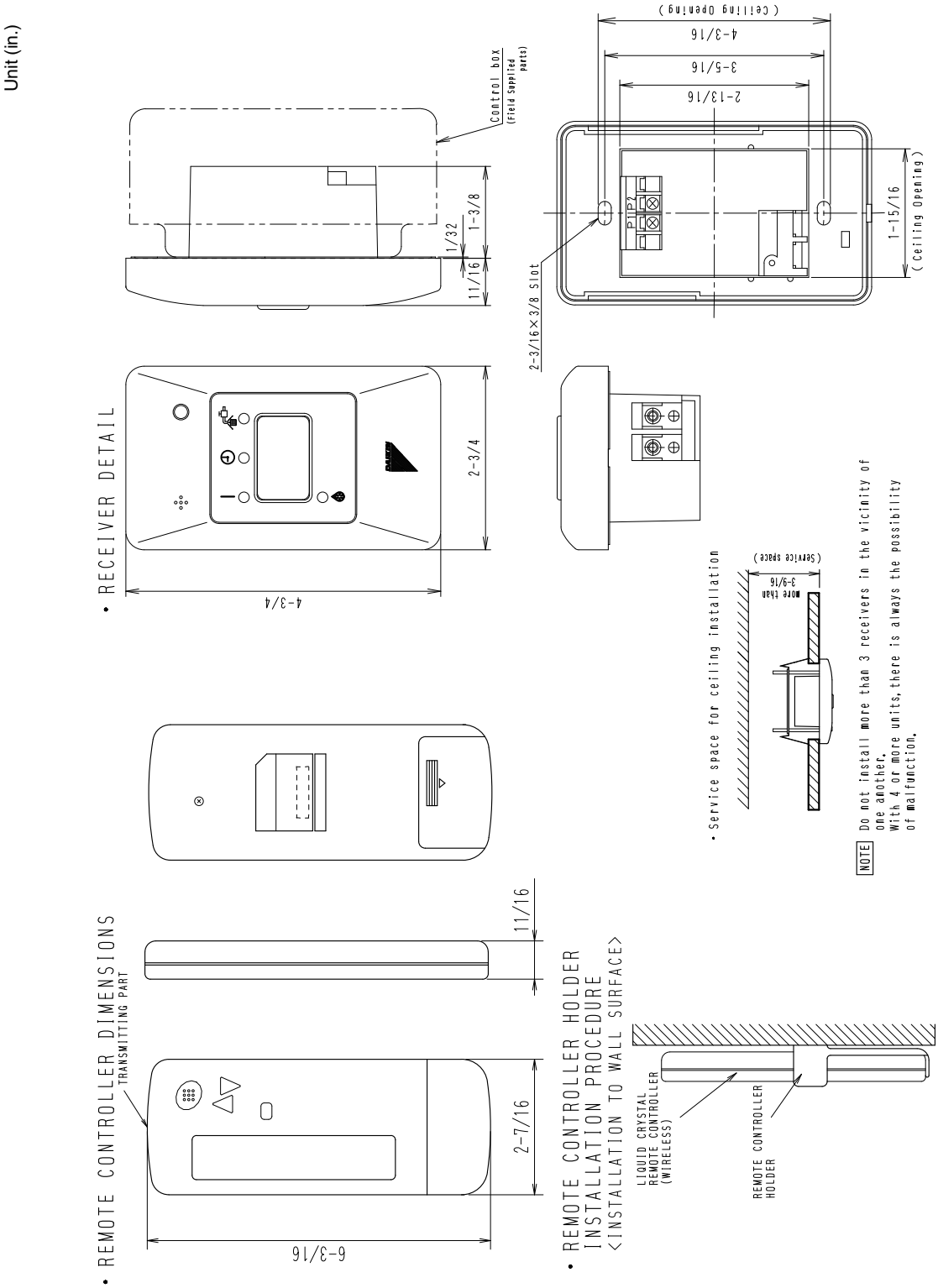
WIRELESS REMOTE CONTROLLER KIT	INDOOR UNIT
BRC7E818	FAQ—PVJU

• REMOTE CONTROLLER DIMENSIONS

• REMOTE CONTROLLER HOLDER INSTALLATION PROCEDURE

< INSTALLATION TO WALL SURFACE >

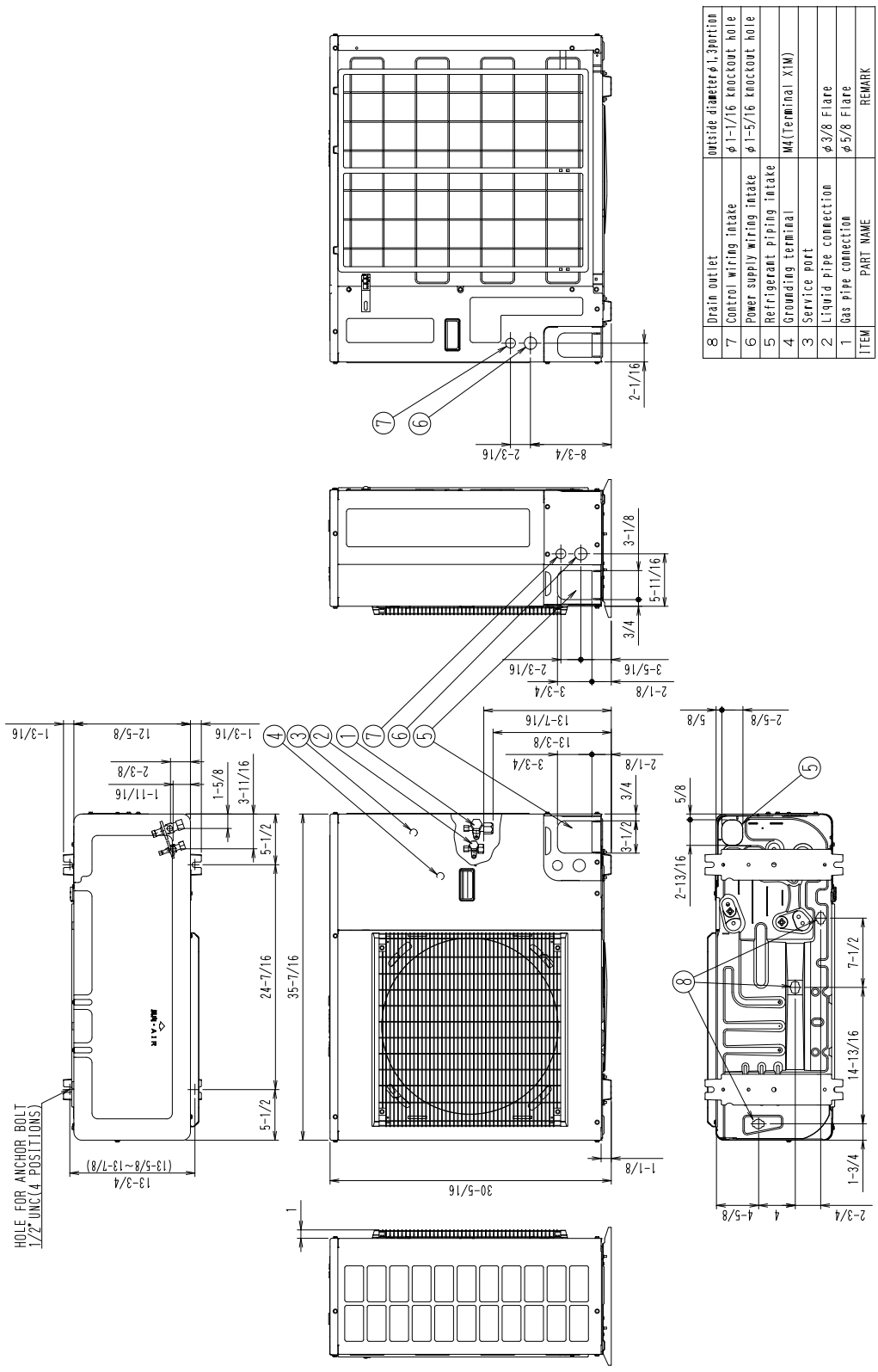
BRC4C82 (for FBQ)



4.4 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU9

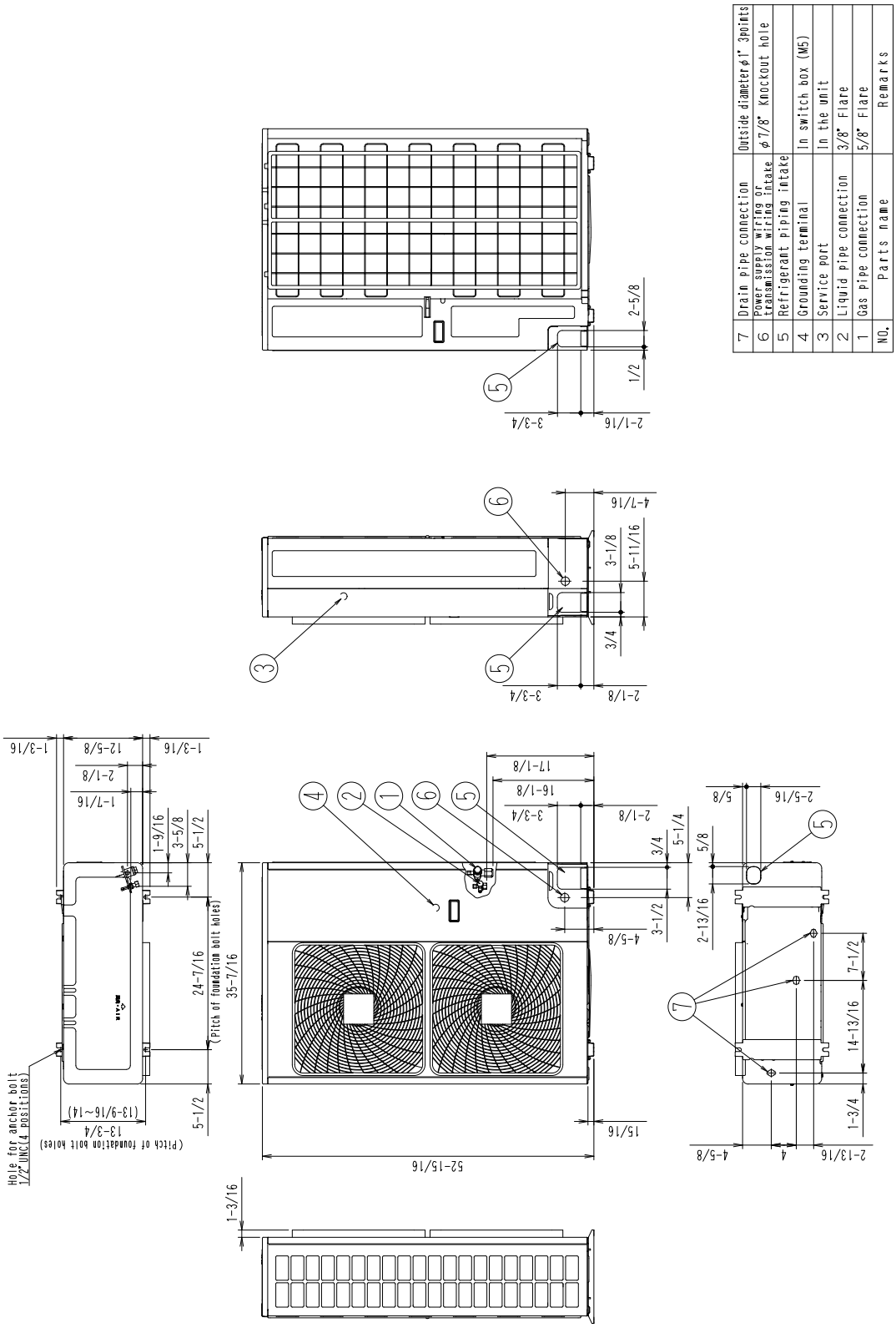
Unit (in.)



RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

Unit (in.)

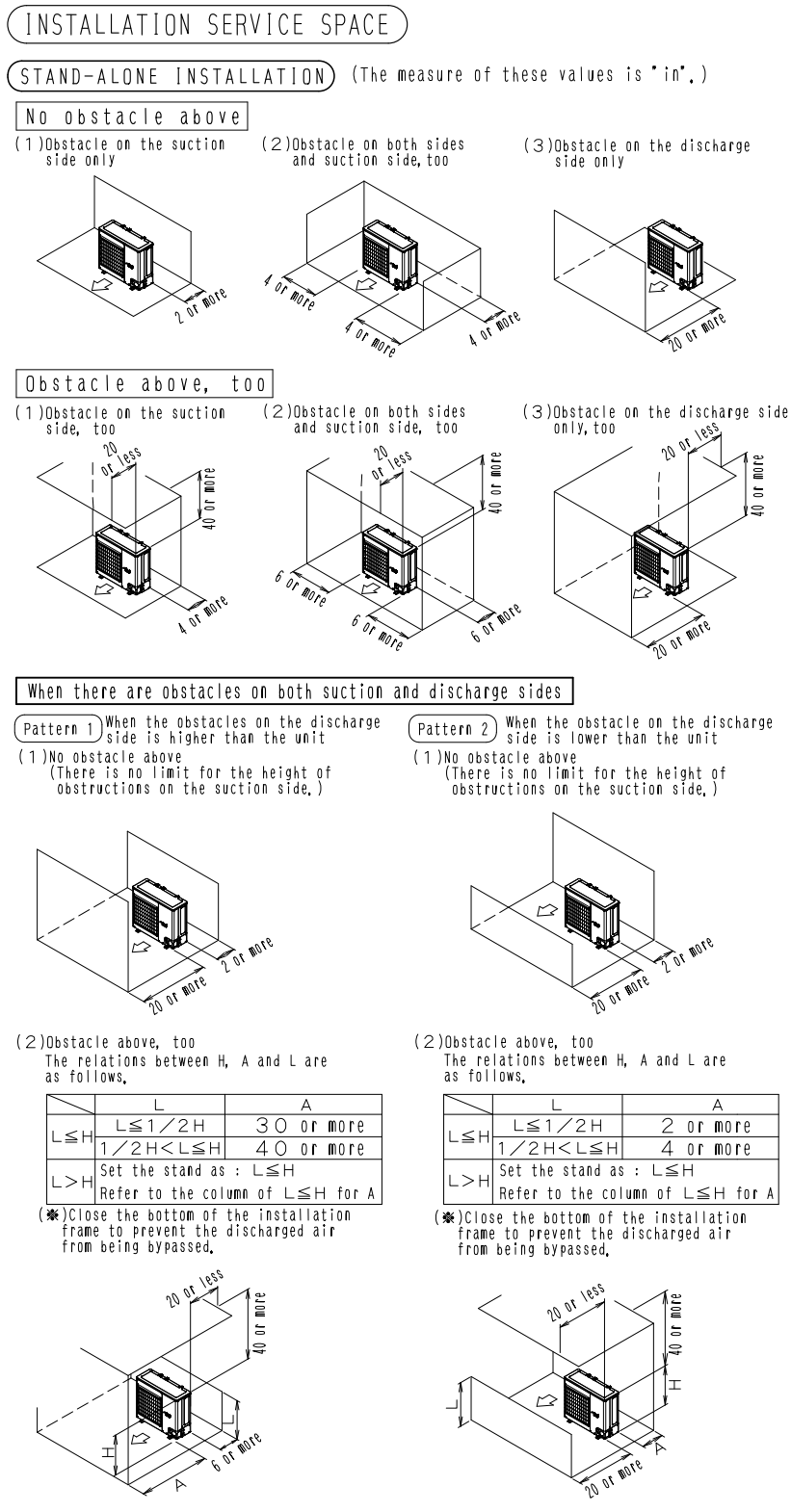
3D065351A



NO.	Parts name	Remarks
7	Drain pipe connection	Outside diameter ø1" 3points
6	Power supply wiring or transmission wiring intake	ø7/8" Knockout hole
5	Refrigerant piping intake	
4	Grounding terminal	In switch box (M5)
3	Service port	In the unit
2	Liquid pipe connection	3/8" Flare
1	Gas pipe connection	5/8" Flare

4.5 Installation service space

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

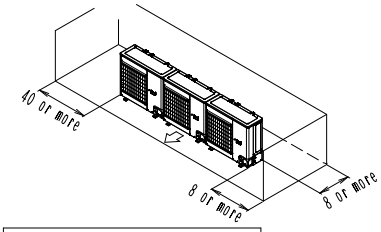


(※)・In side extraction, please provide the space of piping.

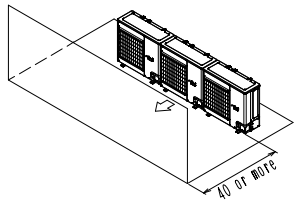
SERIES INSTALLATION (2 OR MORE) (The measure of these values is "in".)

No obstacle above

(1) Obstacle on the suction side and both sides

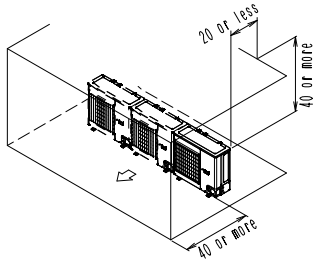


(2) Obstacle on the discharge side only

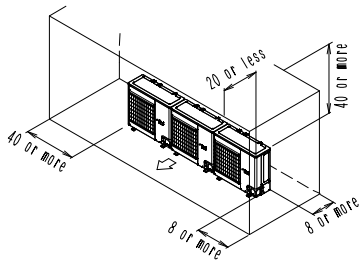


Obstacle above, too

(1) Obstacle on the discharge side



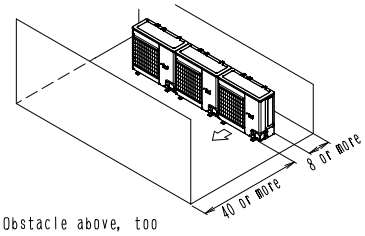
(2) Obstacle on the suction side and both sides



When there are obstacles on both suction and discharge sides

Pattern 1 When the obstacles on the discharge side is higher than the unit

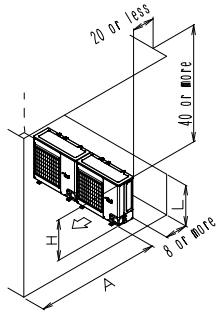
(1)No obstacle above
(There is no limit for the height of obstructions on the suction side.)



(2)Obstacle above, too
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	40 or more
	1/2H<L≦H	50 or more
L>H	Set the stand as : L≦H Refer to the column of L≦H for A	

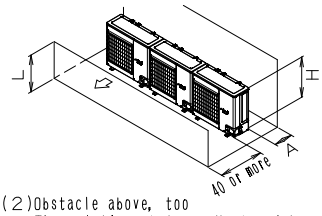
(※)Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Limit of series installation is 2 unit.



Pattern 2 When the obstacle on the discharge side is lower than the unit

(1)No obstacle above
(There is no limit for the height of obstructions on the suction side.)
The relations between H, A and L are as follows.

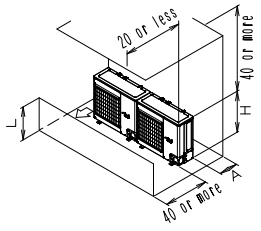
L	A
L≦1/2H	6 or more
1/2H<L≦H	8 or more



(2)Obstacle above, too
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	6 or more
	1/2H<L≦H	8 or more
L>H	Set the stand as : L≦H Refer to the column of L≦H for A	

(※)Close the bottom of the installation frame to prevent the discharged air from being bypassed.
Limit of series installation is 2 unit.

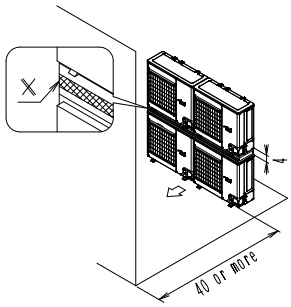


3D064213A

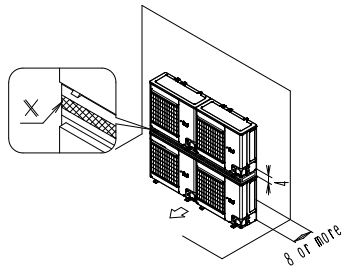
DOUBLE-DECKER INSTALLATION (The measure of these values is "in".)

(※) • Do not stack more than two unit.
• The drain piping construction size of upper side outdoor unit is needed about 4 in.
• Close " X " to prevent the discharged air from being bypassed
(▨ : the gap between the upper and lower outdoor units).
• In side extraction, please provide the space of piping.

(1) Obstacle on the discharge side



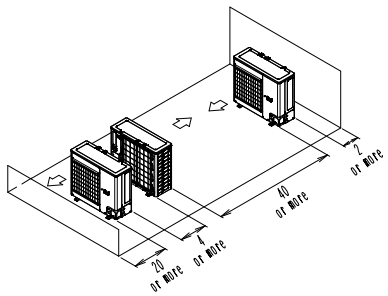
(2) Obstacle on the suction side



MULTIPLE ROWS OF SERIES INSTALLATION (ON THE ROOFTOP, ETC.)

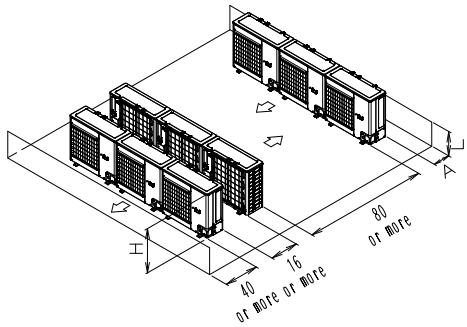
(The measure of these values is "in".)

(1) One row of stand-alone installation



(2) Rows of series installation (2 or more)
The relations between H, A and L are as follows.

	L	A
L≦H	L≦1/2H	6 or more
	1/2H<L≦H	8 or more
L>H	Can not be installed	



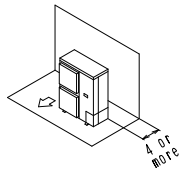
3D064213A

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

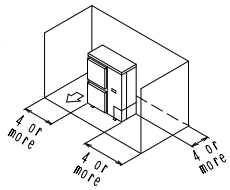
REQUIRED INSTALLATION SPACE

- The unit of the values is inch.
- In case of series installation, some space between the units is needed for wiring with conduit and servicing.

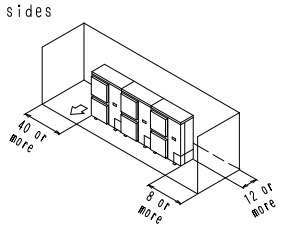
1. Where there is an obstacle on the suction side:
(a) No obstacle above
(1) Stand-alone installation
- Obstacle on the suction side only



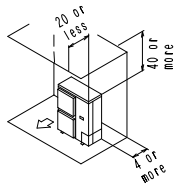
- Obstacle on both sides



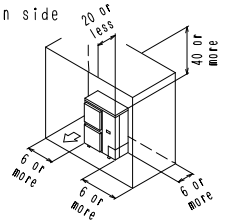
(2) Series installation
(2 or more)
- Obstacle on both sides



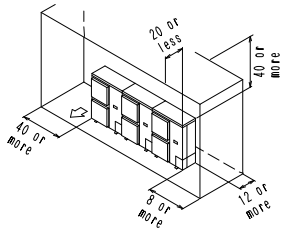
(b) Obstacle above, too
(1) Stand-alone installation
- Obstacle on the suction side, too



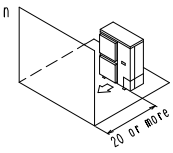
- Obstacle on the suction side and both sides



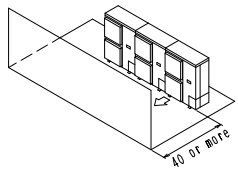
(2) Series installation
(2 or more)
- Obstacle on the suction side and both sides



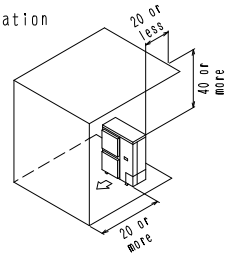
2. Where there is an obstacle on the discharge side:
(a) No obstacle above
(1) Stand-alone installation



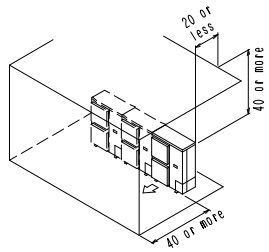
(2) Series installation
(2 or more)



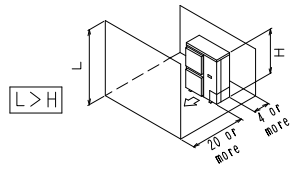
(b) Obstacle above, too
(1) Stand-alone installation



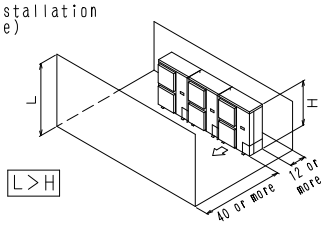
(2) Series installation
(2 or more)



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)



3D047381B

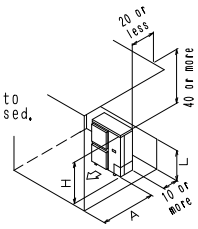
(b) Obstacle above, too

(1)Stand-alone installation

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

	L	A
L≦H	0<L≦1/2H	30
	1/2H<L≦H	40
H<L	Set the stand as: L≦H.	

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



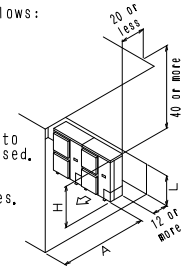
(2)Series installation
(2 or more)

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

	L	A
L≦H	0<L≦1/2H	40
	1/2H<L≦H	50
H<L	Set the stand as: L≦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:

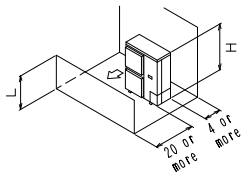
(There is no height limit for obstructions on the intake side.)

(a) No obstacle above

(1)Stand-alone installation

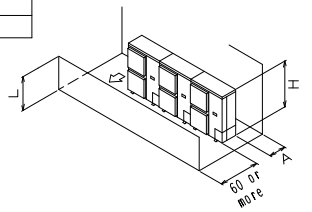
L≦H

(2)Series installation
(2 or more)



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

L	A
0<L≦1/2H	10
1/2H<L≦H	12



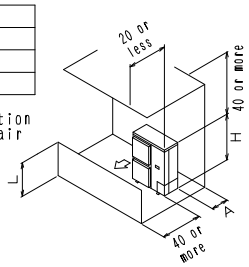
(b) Obstacle above, too

(1)Stand-alone installation

The relations between H, A and L are follows:

	L	A
L≦H	0<L≦1/2H	4
	1/2H<L≦H	8
H<L	Set the stand as: L≦H.	

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



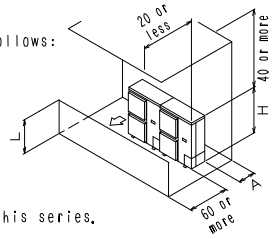
(2)Series installation

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

	L	A
L≦H	0<L≦1/2H	10
	1/2H<L≦H	12
H<L	Set the stand as: L≦H.	

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

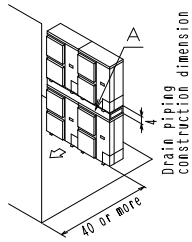
Only two units can be installed for this series.



4. Double-decker installation

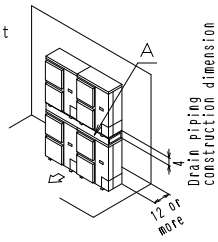
(a) Obstacle on the discharge side
Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two unit.



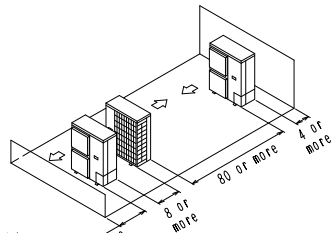
(b) Obstacle on the suction side
Close the gap A (the gap between the upper and lower outdoor units) to prevent the discharged air from being bypassed.

Do not stack more than two unit.



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

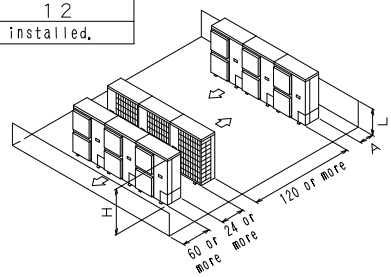
(a) One row of stand-alone installation



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

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

	L	A
L≦H	0<L≦1/2H	10
	1/2H<L≦H	12
H<L	Cannot be installed.	

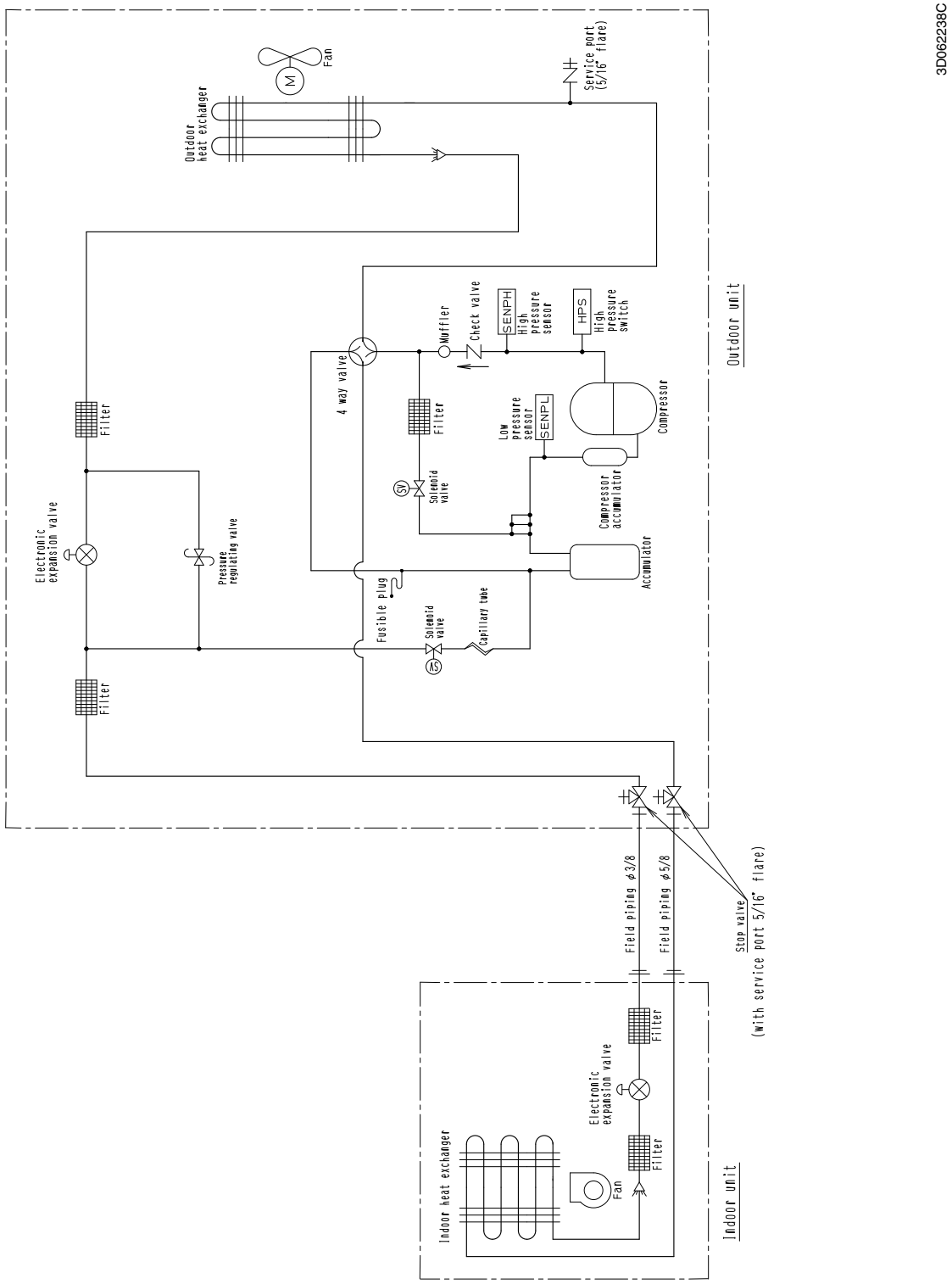


3D047381B

5. Piping diagrams

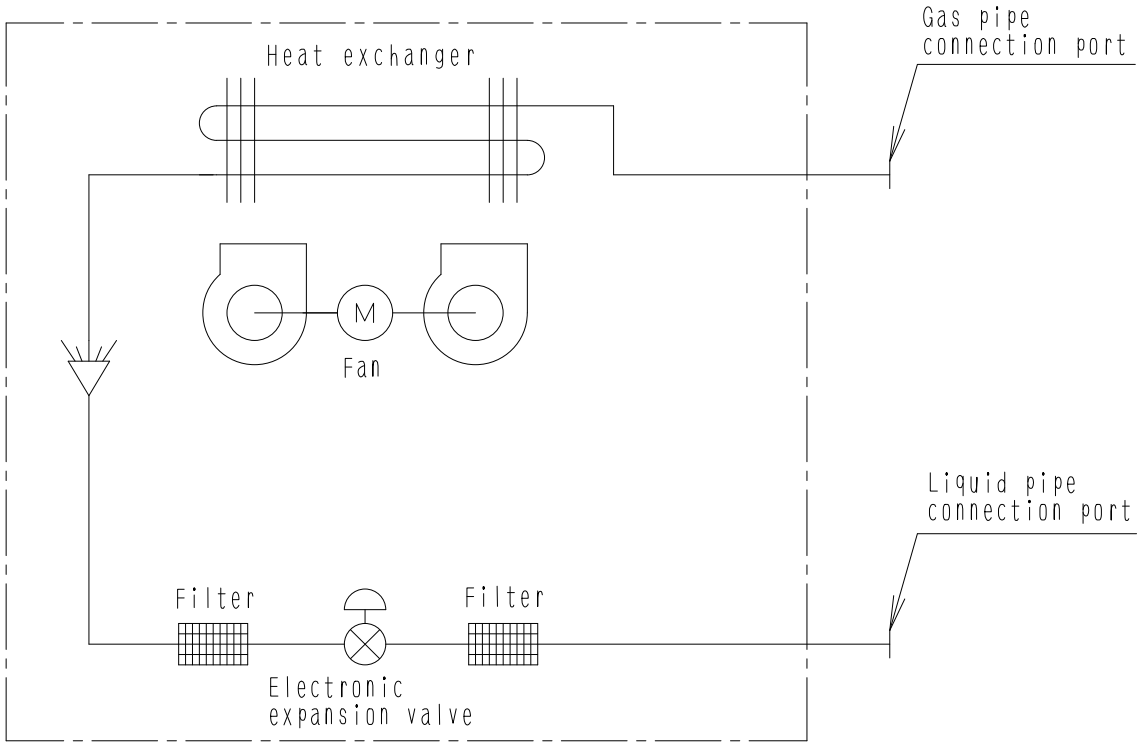
5.1 Indoor unit + Outdoor unit

FCQ18PAVJU / FHQ18PVJU / FAQ18PVJU / FBQ18PVJU + RZR18PVJU / RZQ18PVJU9
FCQ24PAVJU / FHQ24PVJU / FAQ24PVJU / FBQ24PVJU + RZR24PVJU / RZQ24PVJU9
FCQ30PAVJU / FHQ30PVJU / FBQ30PVJU + RZR30PVJU / RZQ30PVJU



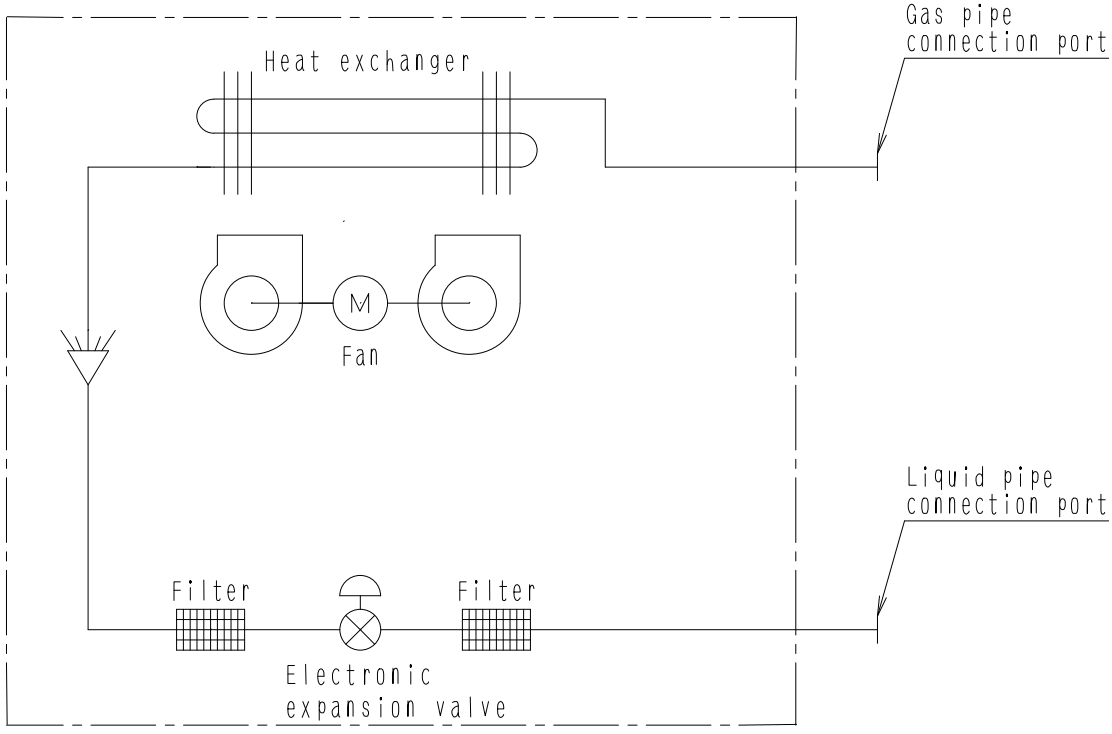
5.2 Indoor unit

FCQ36PAVJU / FCQ42PAVJU
FHQ36MVJU / FHQ42MVJU



4D024460F

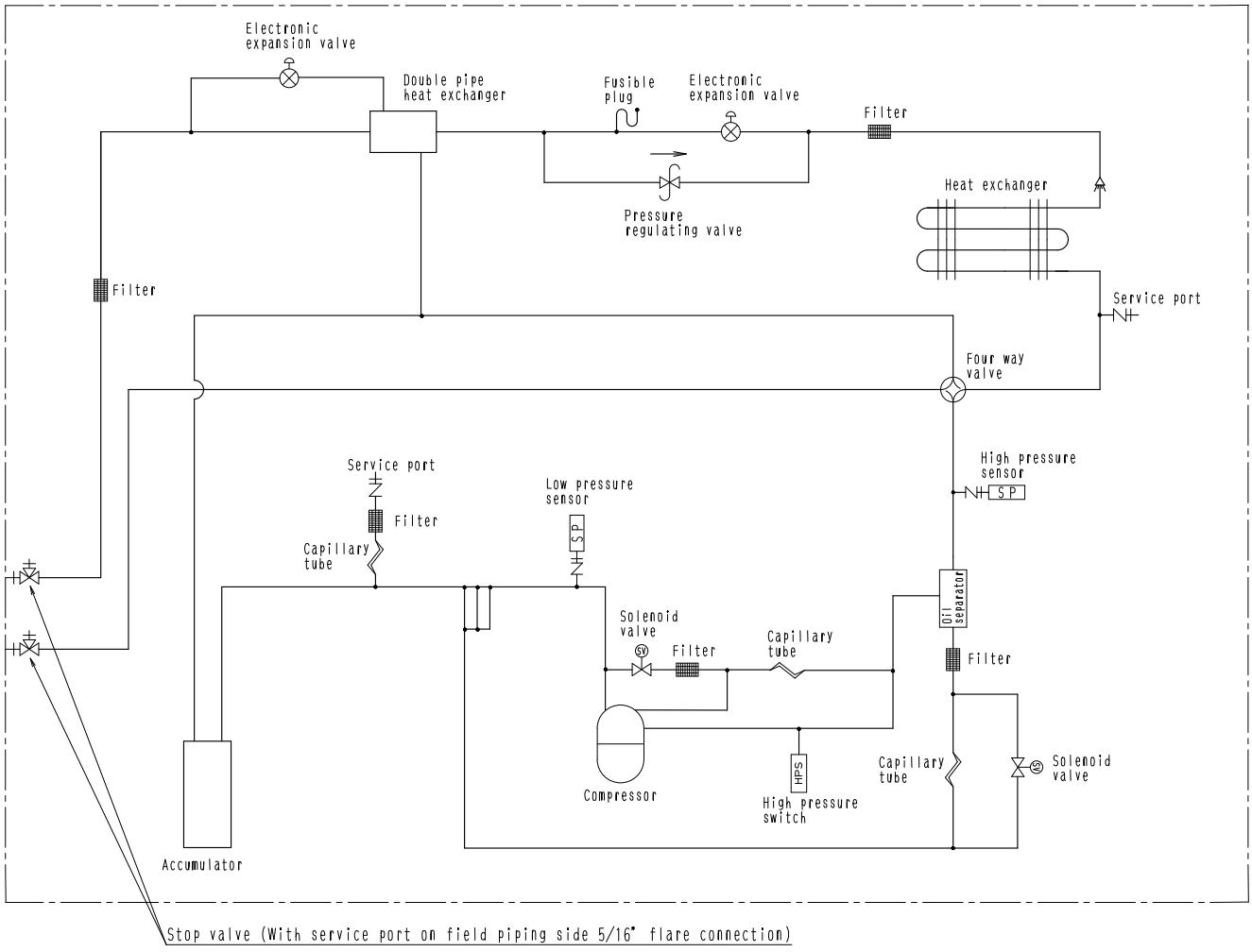
FBQ36PVJU / FBQ42PVJU



4D034245F

5.3 Outdoor unit

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

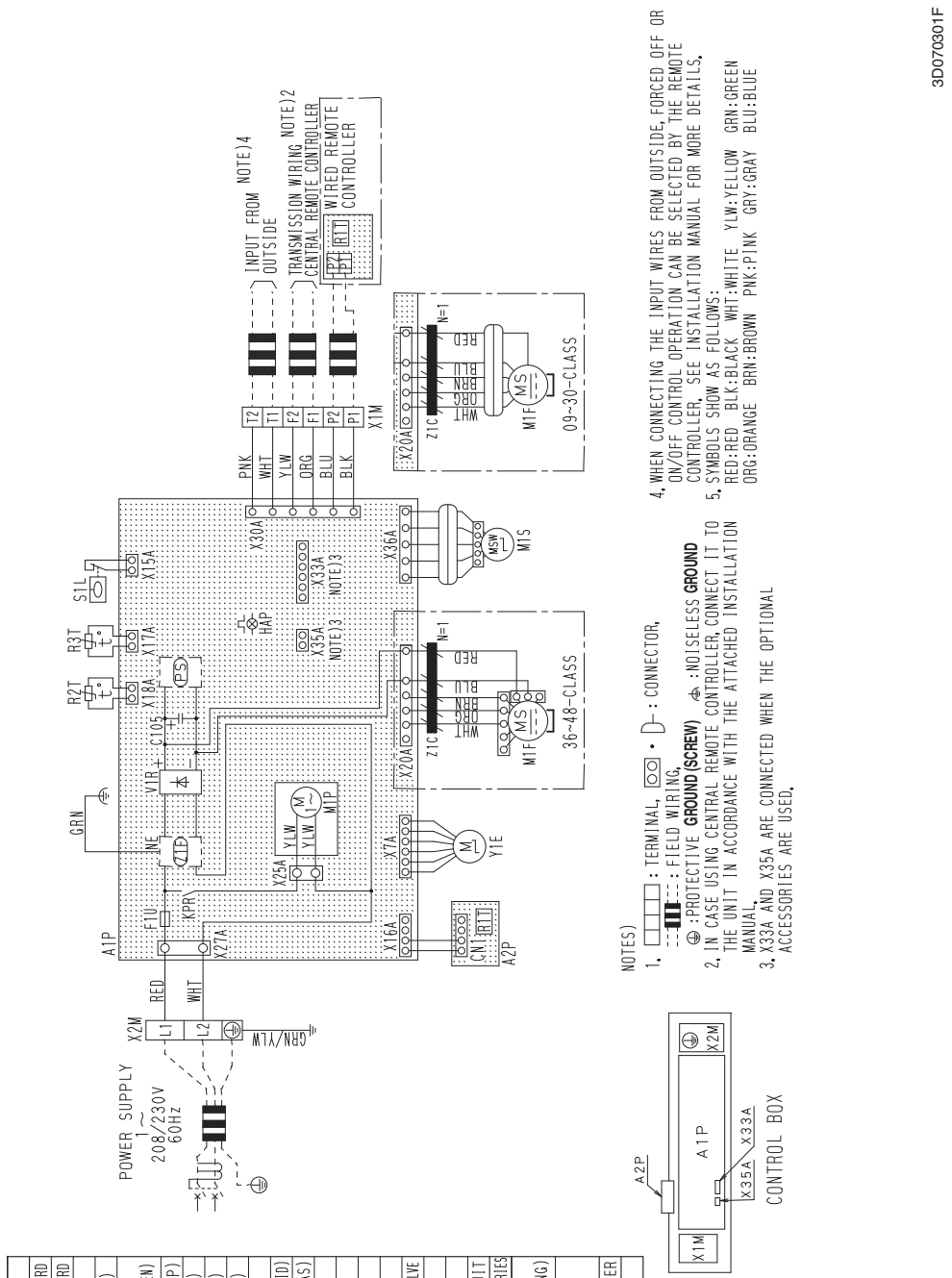


3D065366A

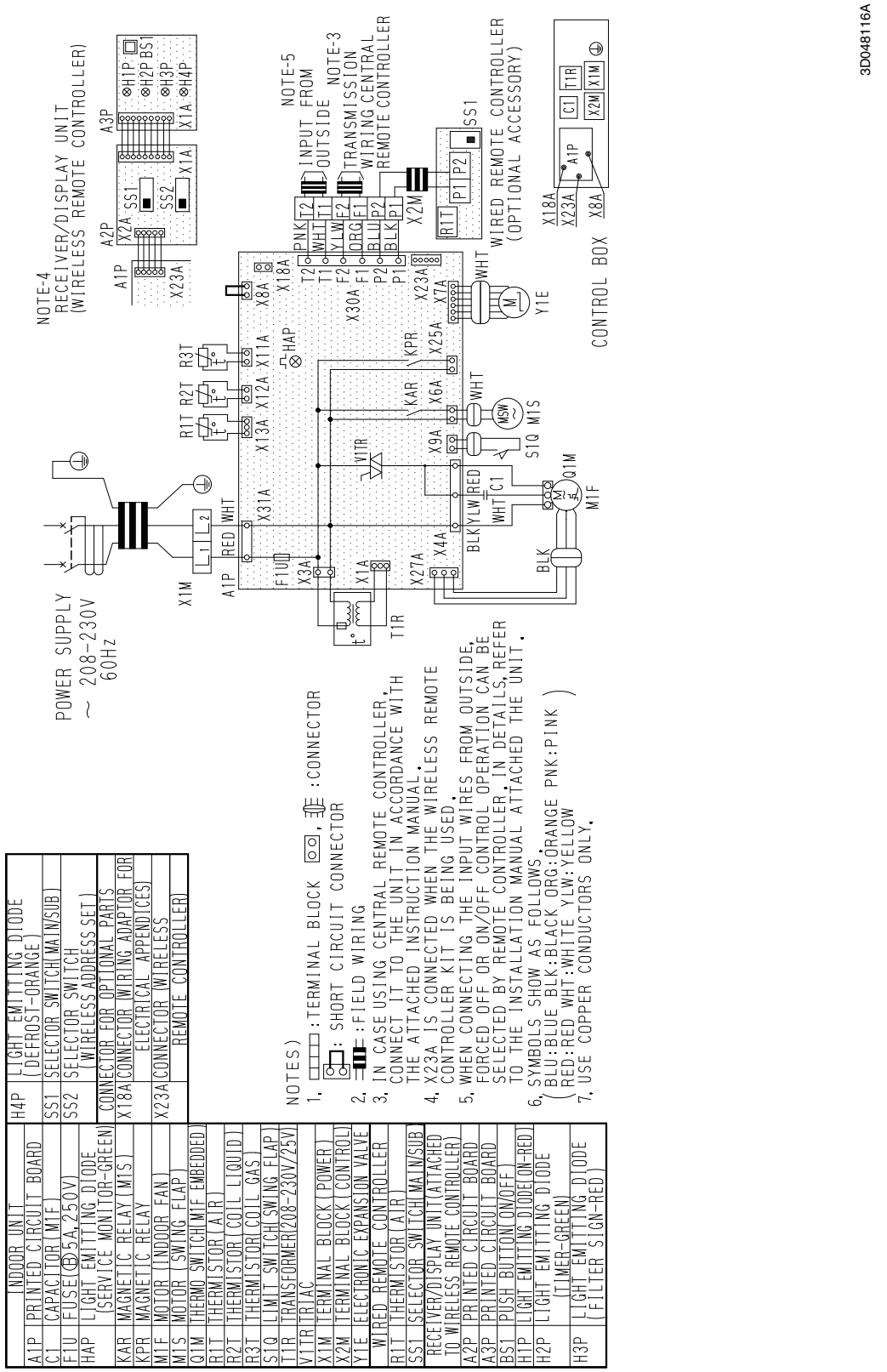
6. Wiring diagrams

6.1 Indoor unit

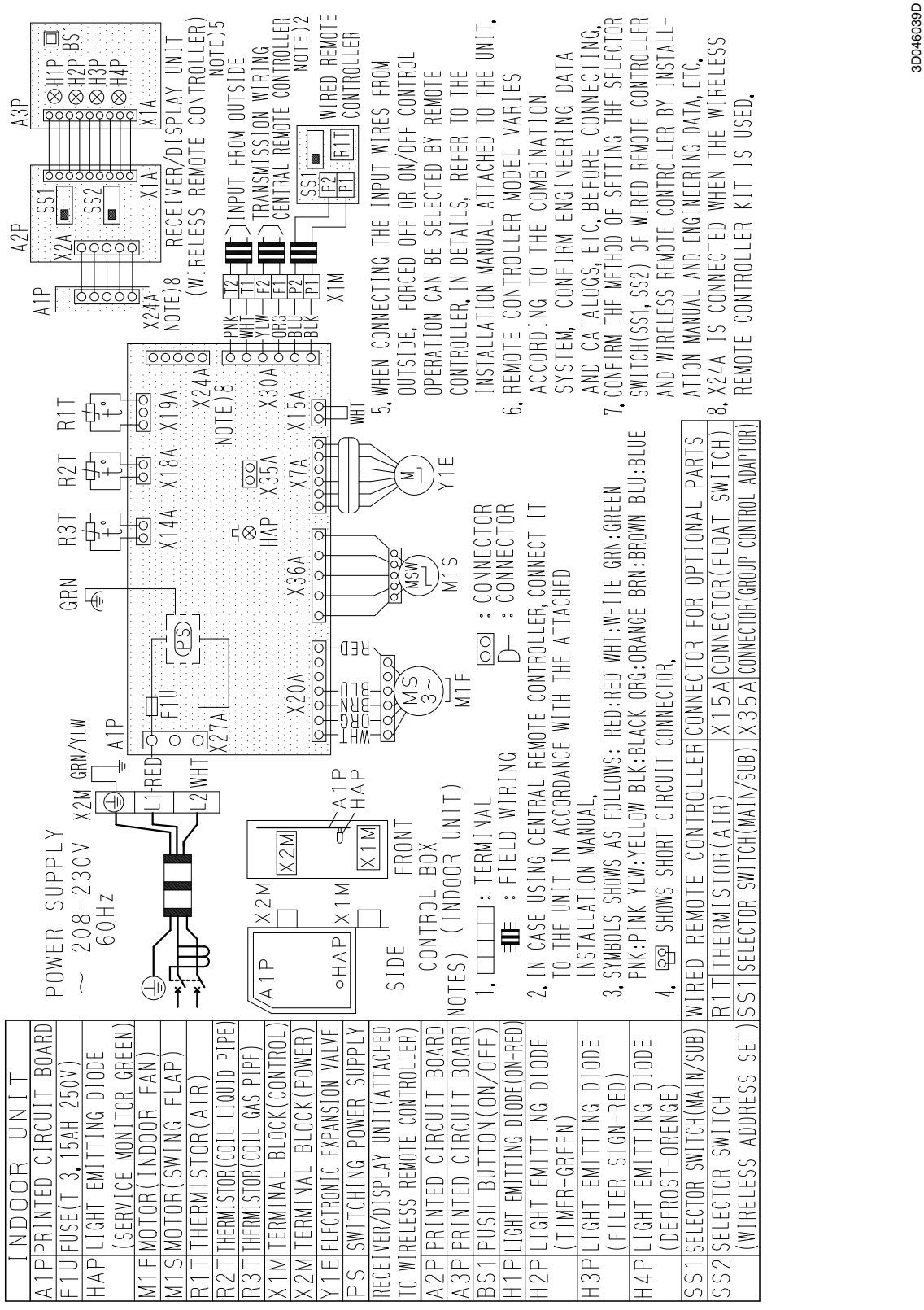
FCQ18PAVJU / FCQ24PAVJU / FCQ30PAVJU
FCQ36PAVJU / FCQ42PAVJU



FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU

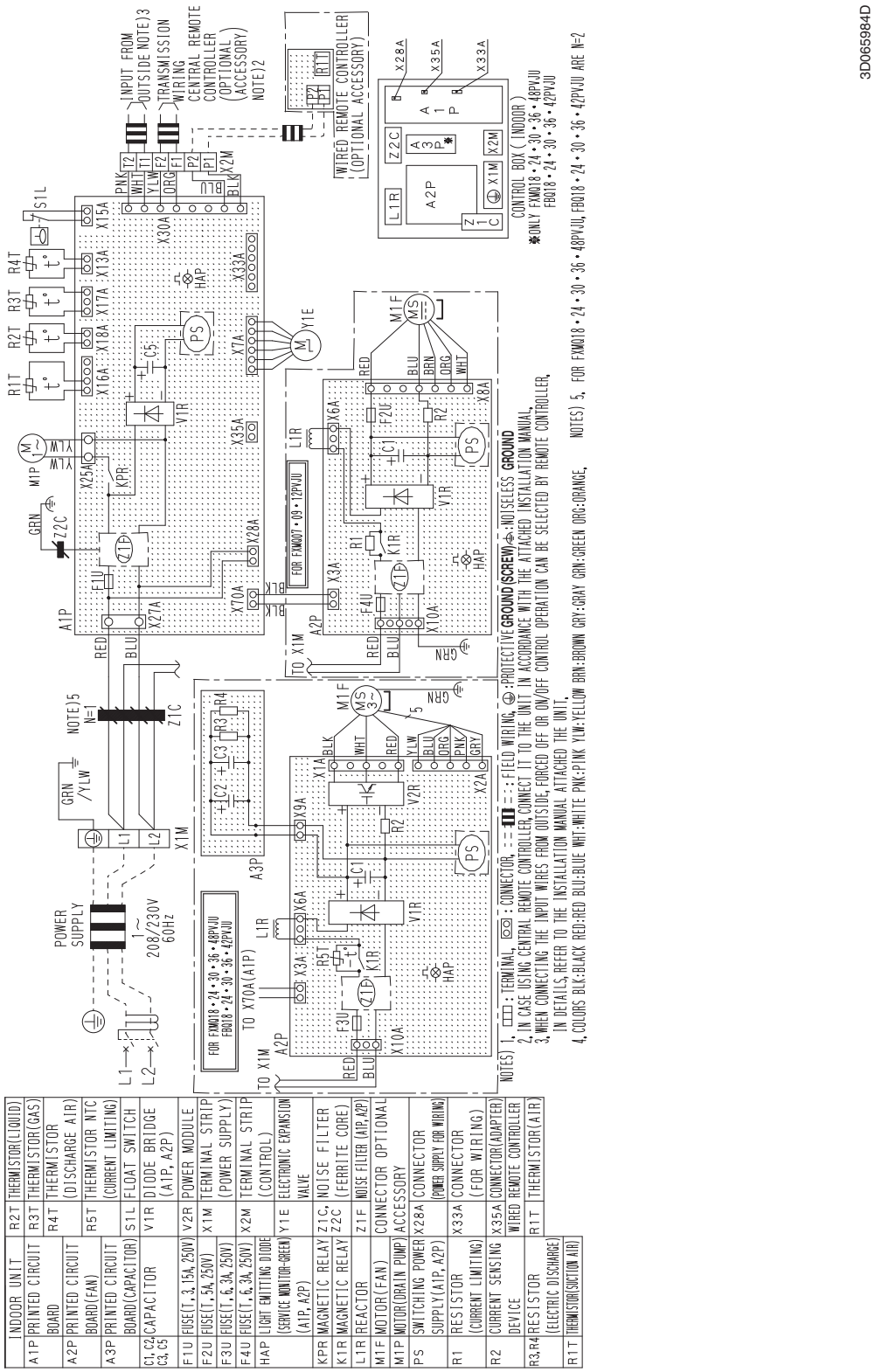


FAQ18PVJU / FAQ24PVJU



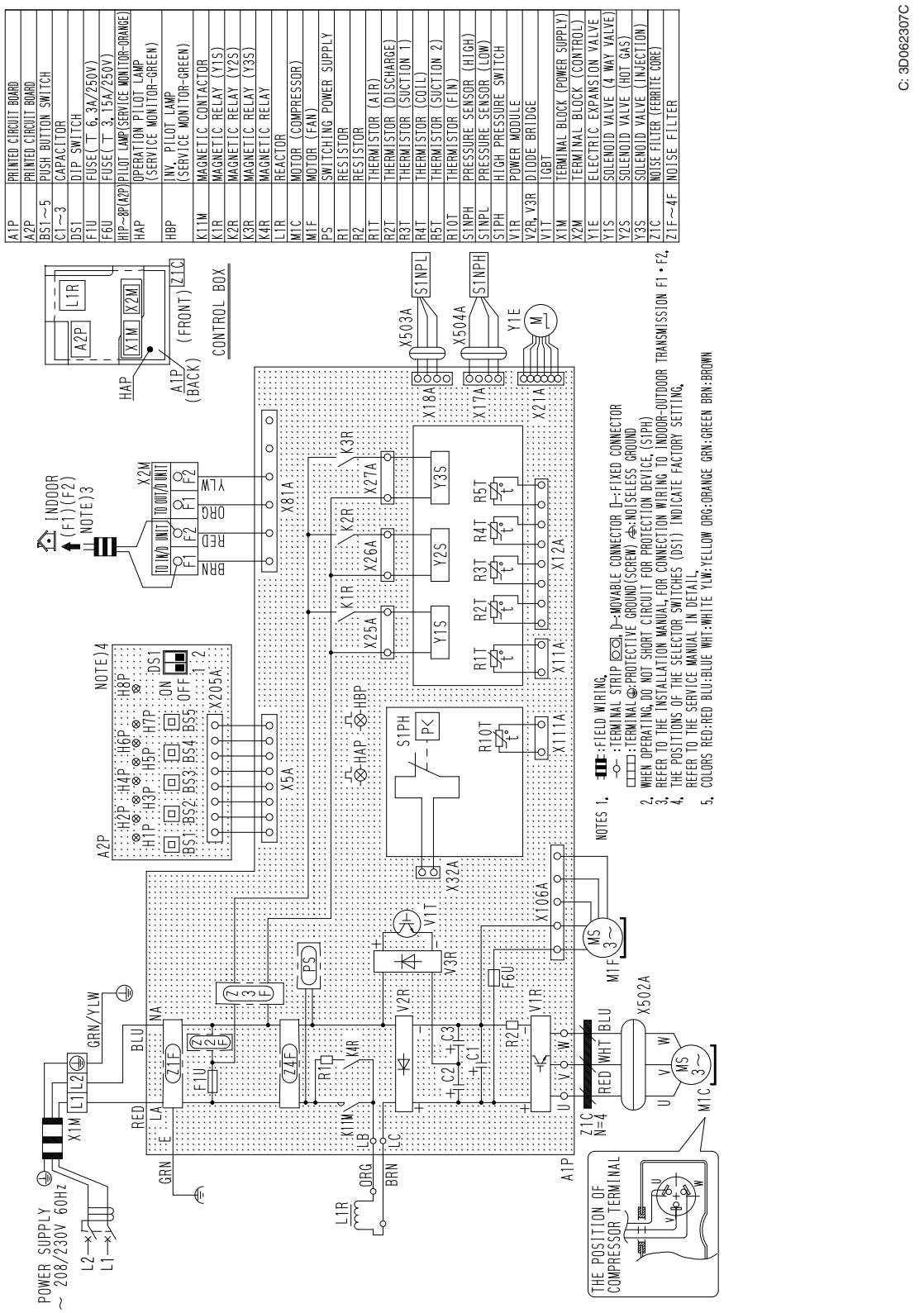
INDOOR UNIT				
A1P	PRINTED CIRCUIT BOARD			
F1U	FUSE(T 3.15AH 250V)			
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)			
M1F	MOTOR(INDOOR FAN)			
M1S	MOTOR(SWING FLAP)			
R1T	THERMISTOR(AIR)			
R2T	THERMISTOR(COIL LIQUID PIPE)			
R3T	THERMISTOR(COIL GAS PIPE)			
X1M	TERMINAL BLOCK(CONTROL)			
X2M	TERMINAL BLOCK(POWER)			
Y1E	ELECTRONIC EXPANSION VALVE			
PS	SWITCHING POWER SUPPLY			
RECEIVER/DISPLAY UNIT(ATTACHED TO WIRELESS REMOTE CONTROLLER)				
A2P	PRINTED CIRCUIT BOARD			
A3P	PRINTED CIRCUIT BOARD			
BS1	PUSH BUTTON(ON/OFF)			
H1P	LIGHT EMITTING DIODE(ON-RED)			
H2P	LIGHT EMITTING DIODE (TIMER-GREEN)			
H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)			
H4P	LIGHT EMITTING DIODE (DEFROST-ORENGE)			
SS1	SELECTOR SWITCH(MAIN/SUB)	WIRED REMOTE CONTROLLER	CONNECTOR FOR OPTIONAL PARTS	
SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)	R1T THERMISTOR(AIR)	X15A	CONNECTOR(FLOAT SWITCH)
		SS1 SELECTOR SWITCH(MAIN/SUB)	X35A	CONNECTOR(GROUP CONTROL ADAPTOR)

FBQ18PVJU / FBQ24PVJU / FBQ30PVJU / FBQ36PVJU / FBQ42PVJU

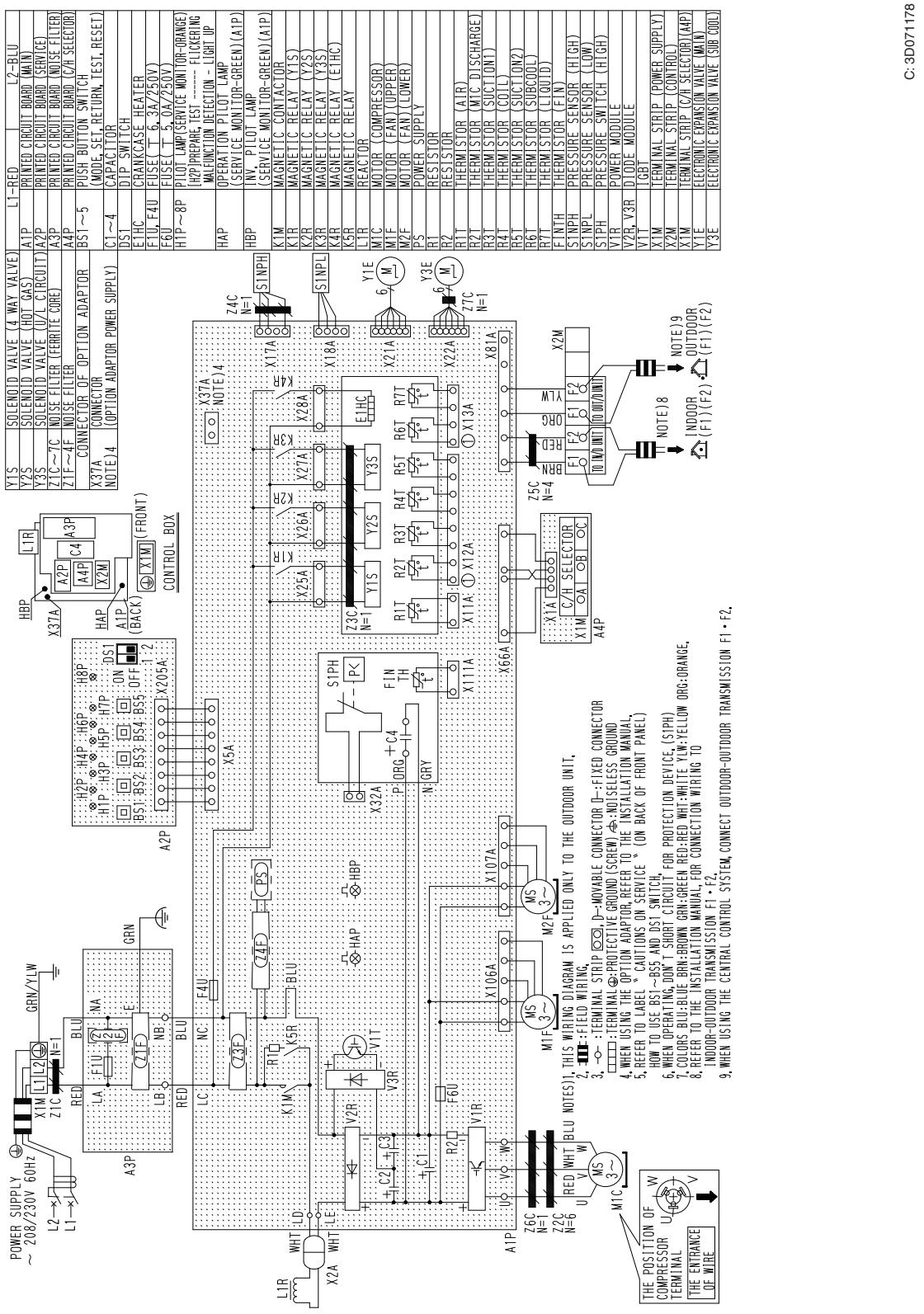


6.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

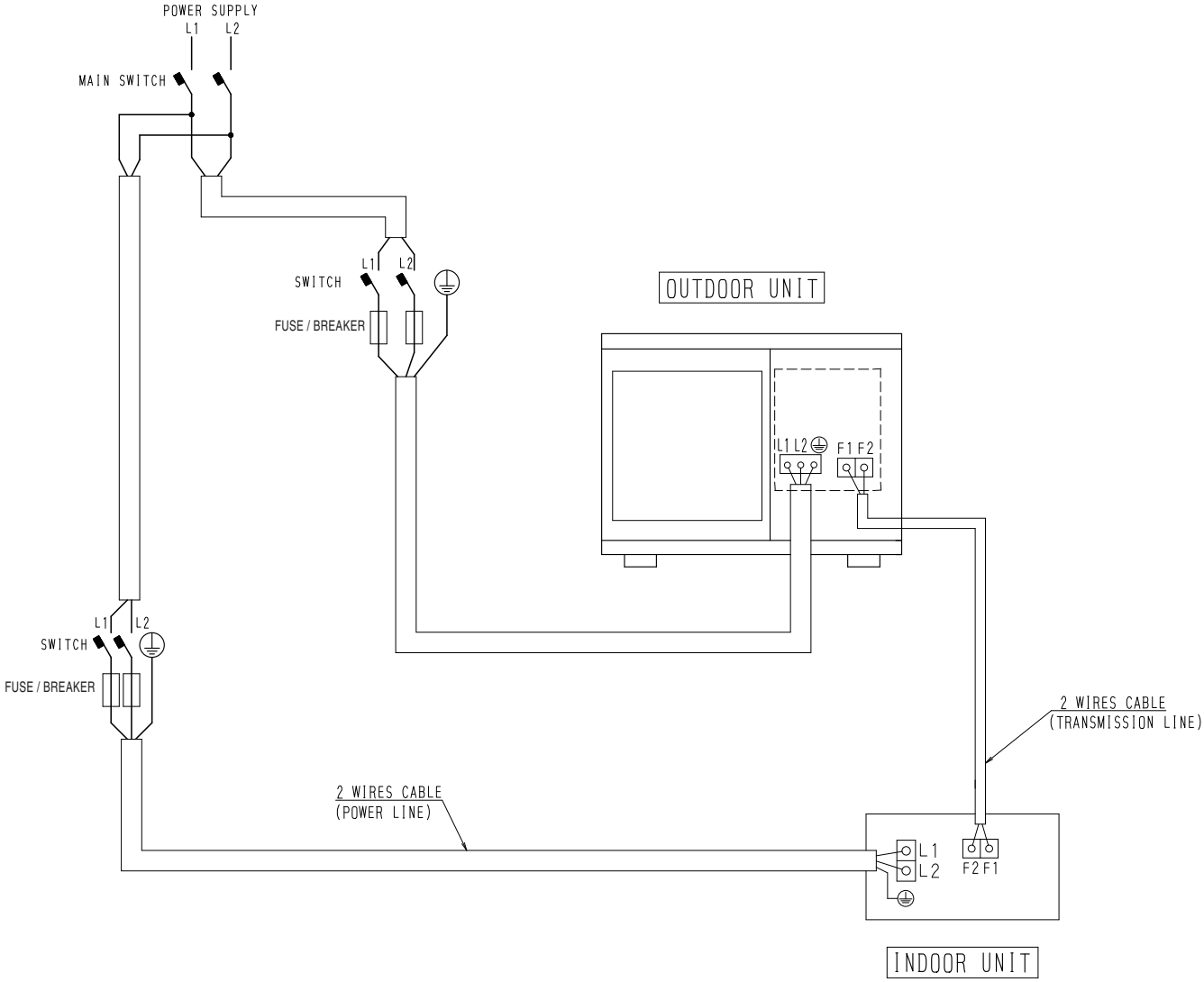


RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9



6.3 External connection diagram

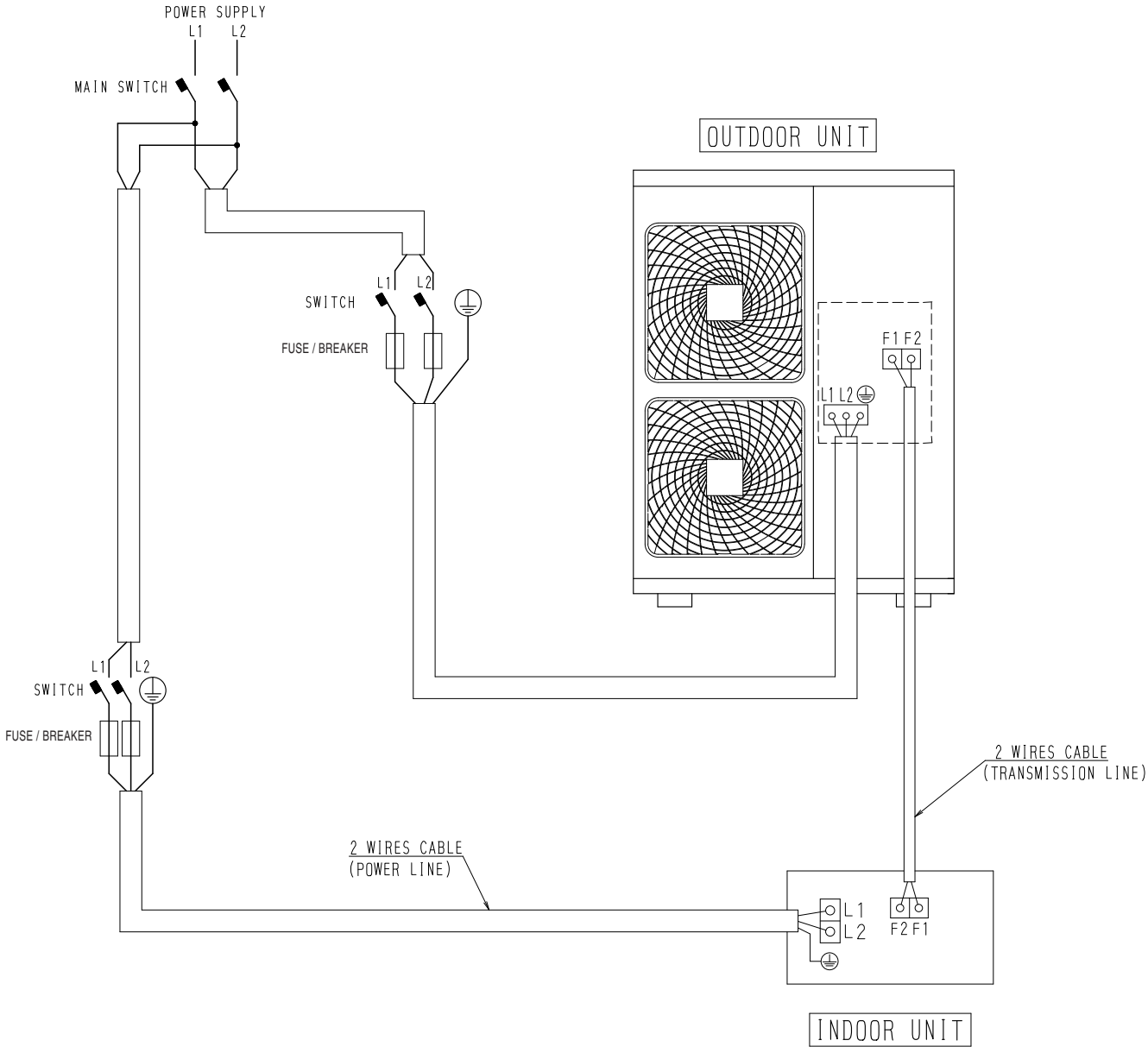
RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU



Notes
1) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2) Use copper conductors only.
3) As for details, see wiring diagram.
4) Install circuit breaker for safety.
5) All field wiring and components must be provided by licensed electrician.
6) Unit shall be grounded in compliance with the applicable local and national codes.
7) Wiring shown is general points-of-connection guides only and is not intended for or to include all details for a specific installation.
8) Be sure to install the switch and the fuse to the power line of each equipment.
9) Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.

C: 3D064230A

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9



Notes
1) All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
2) Use copper conductors only.
3) As for details, see wiring diagram.
4) Install circuit breaker for safety.
5) All field wiring and components must be provided by licensed electrician.
6) Unit shall be grounded in compliance with the applicable local and national codes.
7) Wiring shown is general points-of-connection guides only and is not intended for or to include all details for a specific installation.
8) Be sure to install the switch and the fuse to the power line of each equipment.
9) Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.

C: 3D071667

7. Electrical characteristics

7.1 Indoor unit

FCQ18PAVJU / FCQ24PAVJU / FCQ30PAVJU
FCQ36PAVJU / FCQ42PAVJU

Model	Power supply					IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MOP	KW	FLA	Cooling	Heating
FCQ18PAVJU	60	208V/230V	Max. 253V Min. 187V	0.4	15	0.056	0.3	56	42
FCQ24PAVJU				0.5	15	0.056	0.4	70	60
FCQ30PAVJU				0.6	15	0.056	0.5	104	84
FCQ36PAVJU				1.4	15	0.120	1.1	210	200
FCQ42PAVJU				1.5	15	0.120	1.2	240	232

Symbols:
MCA : Minimum Circuit Ampacity(A)
MOP : Maximum Overcurrent Protective Device(A)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Ampacity(A)
IFM : Indoor Fan Motor

Note:
1. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA/MOP
   MCA = 1.25 X FLA
   MOP ≦ 4 X FLA
   (Next lower standard fuse rating. Minimum 15A)
4. Select wire size based on the value of MCA.
5. Either a fuse or a circuit breaker is acceptable.

C: 4D074049

FHQ18PVJU / FHQ24PVJU / FHQ30PVJU
FHQ36MVJU / FHQ42MVJU

Model	Power supply					IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MOP	KW	FLA	Cooling	Heating
FHQ18MVJU	60	208V / 230V	MAX. 253V Min. 187V	1.3	15	0.130	1.0	140	140
FHQ24MVJU				1.3	15	0.130	1.0	140	140
FHQ30PVJU				1.3	15	0.130	1.0	140	140
FHQ36PVJU				1.4	15	0.130	1.1	161	161
FHQ42PVJU				1.4	15	0.130	1.1	165	165

Symbols:

MCA : Minimum Circuit Ampacity(A)
MOP : Maximum Overcurrent Protective Device(A)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Amperacity(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA/MOP
   MCA = 1.25 X FLA
   MOP ≦ 4 X FLA
   (Next lower standard fuse rating. Minimum 15A)
4. Select wire size based on the value of MCA.
5. Either a fuse or a circuit breaker is acceptable.

C: 4D049333A

FAQ18PVJU / FAQ24PVJU

Model	Power supply					IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MOP	kW	FLA	Cooling	Heating
FAQ18PVJU	60	208V / 230V	MAX. 253V Min. 187V	0.4	15	0.043	0.3	27	32
FAQ24PVJU				0.6	15	0.043	0.5	50	60

Symbols:

MCA : Minimum Circuit Ampacity(A)
MOP : Maximum Overcurrent Protective Device(A)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Ampacity(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA/MOP
   MCA = 1.25 X FLA
   MOP ≦ 4 X FLA
   (Next lower standard fuse rating. Minimum 15A)
4. Select wire size based on the value of MCA.
5. Either a fuse or a circuit breaker is acceptable.

C: 4D046466B

FBQ18PVJU / FBQ24PVJU / FBQ30PVJU / FBQ36PVJU / FBQ42PVJU

Model	Power supply					IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MOP	KW	FLA	Cooling	Heating
FBQ18PVJU	60	208V/230V	Max. 253V Min. 187V	1.6	15	0.350	1.3	214	203
FBQ24PVJU				1.8	15	0.350	1.4	229	218
FBQ30PVJU				2.3	15	0.350	1.8	297	286
FBQ36PVJU				2.9	15	0.350	2.3	375	364
FBQ42PVJU				3.4	15	0.350	2.7	460	449

Symbols:
MCA : Minimum Circuit Ampacity(A)
MOP : Maximum Overcurrent Protective Device(A)
KW : Fan Motor Rated Output(kW)
FLA : Full Load Ampacity(A)
IFM : Indoor Fan Motor

Note:
1. Voltage range
   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA/MOP
   MCA = 1.25 X FLA
   MOP ≦ 4 X FLA
   (Next lower standard fuse rating. Minimum 15A)
4. Select wire size based on the value of MCA.
5. Either a fuse or a circuit breaker is acceptable.

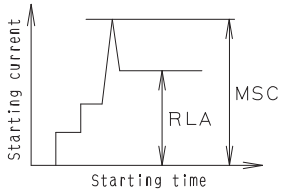
C: 4D074107

7.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

Model		Units				Power supply		Comp.		OFM	
Outdoor	H/P C/O	Hz	Volts	Min.	Max.	MCA	MOP	MSC	RLA	W	FLA
RZQ18PVJU9	H/P	60	208	187	229	16.5	20	—	7.1	70	0.3
			230	209	253						
RZQ24PVJU9	H/P	60	208	187	229	16.5	20	—	10.3	70	0.3
			230	209	253						
RZQ30PVJU	H/P	60	208	187	229	16.5	20	—	16.0	70	0.3
			230	209	253						
RZR18PVJU	C/O	60	208	187	229	16.5	20	—	7.1	70	0.3
			230	209	253						
RZR24PVJU	C/O	60	208	187	229	16.5	20	—	10.3	70	0.3
			230	209	253						
RZR30PVJU	C/O	60	208	187	229	16.5	20	—	16.0	70	0.3
			230	209	253						

The relationship between the starting time and the starting current.



Notes:

1. RLA is based on the following conditions:
   Power supply : 60Hz 208V/230V
   Cooling:
   Indoor temp:80°F DB/67°F WB
   Outdoor temp:95°F DB
   Heating:
   Indoor temp:70°F DB
   Outdoor temp:47°F DB/43°F WB
2. Voltage range:
   Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
3. Maximum allowable voltage variation between phases is 2%.
4. MCA represents maximum input current.
5. MOP represents capacity which may accept MCA.
6. Select wire size based on the value of MCA.
7. MOP is used to select the fuse circuit breaker or the ground fault circuit interrupter (ground leakage circuit breaker).

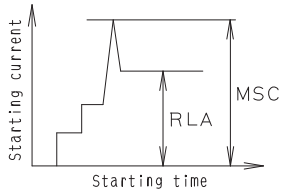
Symbols:

MCA :Minimum Circuit Amps. (A)
MOP :Maximum Overcurrent Protective Device(See note7). (A)
MSC :Maximum current when starting the compressor. (A)
RLA :Rated Load Amps. (A)
OFM :Outdoor Fan Motor. (A)
FLA :Full Load Amps. (A)
KW :Fan Motor Rated Output. (kW)

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

Model		Units				Power supply		Comp.		OFM	
Outdoor	H/P C/O	Hz	Volts	Min.	Max.	MCA	MOP	MSC	RLA	KW	FLA
RZQ36PVJU9	H/P	60	208/230	187	253	27.0	30	—	18.6	0.070 + 0.070	0.3 + 0.3
RZQ42PVJU9	H/P	60	208/230	187	253	27.0	30	—	19.6	0.070 + 0.070	0.3 + 0.3
RZR36PVJU	C/O	60	208/230	187	253	27.0	30	—	18.6	0.070 + 0.070	0.3 + 0.3
RZR42PVJU	C/O	60	208/230	187	253	27.0	30	—	19.6	0.070 + 0.070	0.3 + 0.3

The relationship between the starting time and the starting current.



Notes:

1. RLA is based on the following conditions:
   Power supply : 60Hz 208V/230V
   Cooling:
   Indoor temp:80°F DB/67°F WB
   Outdoor temp:95°F DB
   Heating:
   Indoor temp:70°F DB
   Outdoor temp:47°F DB/43°F WB
2. Voltage range:
   Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
3. Maximum allowable voltage variation between phases is 2%.
4. MCA represents maximum input current.
5. MOP represents capacity which may accept MCA.
6. Select wire size based on the value of MCA.
7. MOP is used to select the fuse circuit breaker or the ground fault circuit interrupter (ground leakage circuit breaker).

Symbols:

MCA :Minimum Circuit Amps. (A)
MOP :Maximum Overcurrent Protective Device(See note7). (A)
MSC :Maximum current when starting the compressor. (A)
RLA :Rated Load Amps. (A)
OFM :Outdoor Fan Motor. (A)
FLA :Full Load Amps. (A)
KW :Fan Motor Rated Output. (kW)

C: 3D065381B

8. Safety devices list

8.1 FCQ

FCQ18PAVJU / FCQ24PAVJU / FCQ30PAVJU / FCQ36PAVJU / FCQ42PAVJU

	Safety devices		18	24	30	36	42
FCQ～PAVJU	PC board fuse		250V 5A	250V 5A	250V 5A	250V 5A	250V 5A
	Fan motor thermal protector	°F	—	—	—	—	—
	Fan motor thermal fuse	°F	—	—	—	—	—

3D074050

8.2 FHQ

FHQ18PVJU / FHQ24PVJU / FHQ30PVJU

MODEL NAME	SAFETY DEVICES	UNITS	18	24	30
FHQ～PVJU	PC board fuse		250V 5A	250V 5A	250V 5A
	Fan motor thermal fuse	°F	—	—	—
	Fan motor thermal protector	°F	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36

3D049334A

FHQ36MVJU / FHQ42MVJU

MODEL NAME	SAFETY DEVICES	UNITS	36	42
FHQ～MVJU	PC board fuse		250V 5A	250V 5A
	Fan motor thermal fuse	°F	—	—
	Fan motor thermal protector	°F	OFF:266±9 ON:176±36	OFF:266±9 ON:176±36

3D049334A

8.3 FAQ

FAQ18PVJU / FAQ24PVJU

	Safety devices		18	24
FAQ～PVJU	PC board fuse		250V 3.15A	
	Fan motor thermal fuse	°F	———	
	Fan motor thermal protector	°F	———	

4D047085B

8.4 FBQ

FBQ18PVJU / FBQ24PVJU / FBQ30PVJU / FBQ36PVJU / FBQ42PVJU

	Safety devices		18	24	30	36	42
FBQ～PVJU	PC board fuse		250V 3.15A	250V 3.15A	250V 3.15A	250V 3.15A	250V 3.15A
	PC board fuse (Fan driver)		250V 6.3A	250V 6.3A	250V 6.3A	250V 6.3A	250V 6.3A
	Drain pump thermal fuse	°F	293	293	293	293	293

3D074108

9. Capacity tables

9.1 Cooling Only

9.1.1 FCQ

FCQ18PAVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.7	0.59	11.68	10.7	0.63	11.68	10.6	0.72	11.68	10.6	0.76	11.68	10.6	0.81	11.68	10.6	0.92
72.0	61.0	14.21	12.4	0.70	14.21	12.4	0.78	14.21	12.3	0.89	14.21	12.3	0.95	14.21	12.3	1.02	14.21	12.3	1.17
77.0	64.0	16.10	13.4	0.79	16.10	13.4	0.90	16.10	13.3	1.04	16.10	13.3	1.11	16.10	13.3	1.19	16.10	13.3	1.37
80.0	67.0	18.00	14.2	0.90	18.00	14.2	1.04	18.00	14.1	1.20	18.00	14.1	1.28	18.00	14.1	1.38	17.27	13.8	1.49
86.0	72.0	20.79	14.6	1.07	20.06	14.2	1.18	19.32	13.8	1.29	19.00	13.5	1.34	18.59	13.5	1.40	17.86	13.4	1.51
90.0	75.0	21.14	14.2	1.08	20.41	13.7	1.19	19.68	13.5	1.30	19.35	13.5	1.35	18.95	13.2	1.41	18.21	12.6	1.52

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ24PAVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	14.2	0.81	15.57	14.2	0.88	15.57	14.1	1.00	15.57	14.1	1.06	15.57	14.1	1.14	15.57	14.1	1.31
72.0	61.0	18.94	16.7	0.97	18.94	16.7	1.10	18.94	16.6	1.26	18.94	16.6	1.35	18.94	16.6	1.45	18.94	16.6	1.67
77.0	64.0	21.47	18.3	1.10	21.47	18.3	1.28	21.47	18.2	1.48	21.47	18.2	1.58	21.47	18.2	1.72	21.47	18.2	1.98
80.0	67.0	24.00	19.0	1.27	24.00	19.0	1.48	24.00	18.9	1.72	24.00	18.9	1.84	24.00	18.9	2.00	23.02	18.7	2.16
86.0	72.0	27.72	19.7	1.53	26.74	19.0	1.69	25.76	18.6	1.86	25.33	18.2	1.93	24.79	18.1	2.02	23.81	17.8	2.19
90.0	75.0	28.19	18.9	1.54	27.21	18.2	1.70	26.24	17.8	1.87	25.80	18.0	1.94	25.26	17.9	2.04	24.29	17.3	2.20

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ30PAVJU + RZR30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	16.6	1.28	19.47	16.6	1.39	19.47	16.6	1.59	19.47	16.6	1.69	19.47	16.6	1.82	19.47	16.6	2.09
72.0	61.0	23.68	19.4	1.55	23.68	19.4	1.75	23.68	19.4	2.02	23.68	19.4	2.15	23.68	19.4	2.33	23.68	19.4	2.69
77.0	64.0	26.84	21.2	1.76	26.84	21.2	2.05	26.84	21.1	2.38	26.84	21.1	2.54	26.84	21.1	2.76	26.84	21.1	3.20
80.0	67.0	30.00	22.2	2.03	30.00	22.2	2.37	30.00	22.3	2.77	30.00	22.3	2.97	30.00	22.3	3.23	28.78	21.5	3.50
86.0	72.0	34.65	22.9	2.46	33.43	22.1	2.72	32.21	21.8	2.99	31.66	21.8	3.11	30.99	21.3	3.26	29.77	20.8	3.54
90.0	75.0	35.24	21.8	2.47	34.02	21.1	2.74	32.80	21.1	3.01	32.25	20.6	3.13	31.58	20.6	3.28	30.36	19.9	3.56

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ36PAVJU + RZR36PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	23.40	21.3	1.24	23.40	21.3	1.34	23.40	21.2	1.54	23.40	21.2	1.65	23.40	21.2	1.77	23.40	21.2	2.04
72.0	61.0	28.40	24.7	1.50	28.40	24.7	1.69	28.40	24.6	1.96	28.40	24.6	2.10	28.40	24.6	2.27	28.40	24.6	2.63
77.0	64.0	32.20	26.7	1.71	32.20	26.7	2.00	32.20	26.7	2.32	32.20	26.7	2.48	32.20	26.7	2.70	32.20	26.7	3.13
80.0	67.0	36.00	28.4	1.97	36.00	28.4	2.31	36.00	28.6	2.71	36.00	28.6	2.90	36.00	28.6	3.16	34.50	27.8	3.42
86.0	72.0	41.60	29.5	2.40	40.10	28.5	2.66	38.60	28.0	2.93	38.00	27.7	3.05	37.20	27.3	3.20	35.70	26.8	3.47
90.0	75.0	42.30	28.8	2.41	40.80	27.7	2.68	39.40	27.5	2.94	38.70	26.9	3.06	37.90	26.4	3.21	36.40	26.0	3.49

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ42PAVJU + RZR42PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	27.27	22.4	1.58	27.27	22.4	1.72	27.27	22.4	1.99	27.27	22.4	2.11	27.27	22.4	2.28	27.27	22.4	2.62
72.0	61.0	33.19	26.5	1.92	33.19	26.5	2.18	33.19	26.4	2.53	33.19	26.4	2.70	33.19	26.4	2.93	33.19	26.4	3.39
77.0	64.0	37.54	28.9	2.20	37.54	28.9	2.56	37.54	28.9	3.00	37.54	28.9	3.20	37.54	28.9	3.48	37.54	28.9	4.05
80.0	67.0	42.00	31.1	2.54	42.00	31.1	2.99	42.00	30.9	3.49	42.00	30.9	3.74	42.00	30.9	4.08	40.34	30.2	4.42
86.0	72.0	48.53	32.5	3.09	46.77	31.3	3.43	45.11	30.4	3.78	44.28	30.1	3.93	43.35	29.6	4.13	41.69	28.7	4.48
90.0	75.0	49.36	31.1	3.11	47.60	30.0	3.45	45.94	29.4	3.80	45.11	29.0	3.96	44.18	28.5	4.15	42.52	27.8	4.51

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.1.2 FHQ

FHQ18PVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.6	0.54	11.68	10.6	0.59	11.68	10.6	0.66	11.68	10.6	0.70	11.68	10.6	0.75	11.68	10.6	0.85
72.0	61.0	14.21	11.9	0.52	14.21	11.9	0.72	14.21	11.9	0.83	14.21	11.9	0.88	14.21	11.9	0.95	14.21	11.9	1.08
77.0	64.0	16.10	12.7	0.60	16.10	12.7	0.84	16.10	12.7	0.96	16.10	12.7	1.03	16.10	12.7	1.11	16.10	12.7	1.28
80.0	67.0	18.00	13.3	0.70	18.00	13.3	0.96	18.00	13.3	1.11	18.00	13.3	1.19	18.00	13.3	1.29	17.27	13.3	1.39
86.0	72.0	20.79	14.2	0.87	20.06	14.0	1.09	19.32	13.2	1.20	19.00	13.3	1.24	18.59	13.2	1.30	17.86	12.7	1.40
90.0	75.0	21.14	13.5	0.87	20.41	13.2	1.10	19.68	12.7	1.20	19.35	12.8	1.25	18.95	12.5	1.31	18.21	12.2	1.41

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ24PVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	12.6	0.77	15.57	12.6	0.83	15.57	12.6	0.95	15.57	12.6	1.01	15.57	12.6	1.09	15.57	12.6	1.24
72.0	61.0	18.94	14.9	0.93	18.94	14.9	1.04	18.94	14.9	1.20	18.94	14.9	1.28	18.94	14.9	1.38	18.94	14.9	1.59
77.0	64.0	21.47	16.3	1.05	21.47	16.3	1.22	21.47	16.3	1.41	21.47	16.3	1.51	21.47	16.3	1.63	21.47	16.3	1.89
80.0	67.0	24.00	17.1	1.21	24.00	17.1	1.41	24.00	17.1	1.64	24.00	17.1	1.75	24.00	17.1	1.90	23.02	16.4	2.06
86.0	72.0	27.72	17.5	1.46	26.74	16.9	1.61	25.76	16.5	1.77	25.33	16.2	1.84	24.79	16.1	1.93	23.81	15.5	2.09
90.0	75.0	28.19	16.9	1.47	27.21	16.3	1.62	26.24	15.7	1.78	25.80	15.5	1.85	25.26	15.2	1.94	24.29	14.6	2.10

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ30PVJU + RZR30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	15.6	1.12	19.47	15.6	1.21	19.47	15.6	1.40	19.47	15.6	1.49	19.47	15.6	1.61	19.47	15.6	1.84
72.0	61.0	23.68	18.5	1.36	23.68	18.5	1.54	23.68	18.5	1.78	23.68	18.5	1.90	23.68	18.5	2.06	23.68	18.5	2.38
77.0	64.0	26.84	19.9	1.55	26.84	19.9	1.80	26.84	19.9	2.10	26.84	19.9	2.25	26.84	19.9	2.44	26.84	19.9	2.83
80.0	67.0	30.00	21.1	1.79	30.00	21.1	2.10	30.00	21.1	2.45	30.00	21.1	2.62	30.00	21.1	2.86	28.78	20.2	3.10
86.0	72.0	34.65	21.8	2.17	33.43	21.0	2.41	32.21	20.6	2.65	31.66	20.3	2.75	30.99	20.2	2.89	29.77	19.4	3.13
90.0	75.0	35.24	21.1	2.18	34.02	20.4	2.42	32.80	19.7	2.66	32.25	19.4	2.77	31.58	18.9	2.91	30.36	18.3	3.16

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. [ ] shows nominal MAX capacities

FHQ36MVJU + RZR36PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	23.40	18.5	1.37	23.40	18.5	1.49	23.40	18.5	1.73	23.40	18.5	1.83	23.40	18.5	1.98	23.40	18.5	2.27
72.0	61.0	28.40	21.9	1.67	28.40	21.9	1.89	28.40	21.8	2.20	28.40	21.8	2.34	28.40	21.8	2.54	28.40	21.8	2.94
77.0	64.0	32.20	23.8	1.90	32.20	23.8	2.23	32.20	23.9	2.59	32.20	23.9	2.77	32.20	23.9	3.01	32.20	23.9	3.50
80.0	67.0	36.00	25.2	2.21	36.00	25.2	2.59	36.00	25.1	3.03	36.00	25.1	3.25	36.00	25.1	3.53	34.50	24.0	3.82
86.0	72.0	41.60	26.2	2.68	40.10	25.3	2.97	38.60	24.6	3.27	38.00	24.3	3.40	37.20	23.7	3.57	35.70	23.2	3.87
90.0	75.0	42.30	25.0	2.70	40.80	24.1	2.99	39.40	23.6	3.29	38.70	23.2	3.42	37.90	22.8	3.60	36.40	21.8	3.90

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. [ ] shows nominal MAX capacities

FHQ42MVJU + RZR42PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	26.30	20.8	1.65	26.30	20.8	1.79	26.30	20.8	2.07	26.30	20.8	2.20	26.30	20.8	2.38	26.30	20.8	2.74
72.0	61.0	32.00	24.6	2.00	32.00	24.6	2.27	32.00	24.5	2.65	32.00	24.5	2.83	32.00	24.5	3.06	32.00	24.5	3.55
77.0	64.0	36.20	26.8	2.29	36.20	26.8	2.68	36.20	26.9	3.12	36.20	26.9	3.34	36.20	26.9	3.64	36.20	26.9	4.22
80.0	67.0	40.50	28.4	2.65	40.50	28.4	3.12	40.50	28.2	3.65	40.50	28.2	3.92	40.50	28.2	4.26	38.90	27.1	4.62
86.0	72.0	46.80	29.5	3.23	45.10	28.4	3.59	43.50	27.7	3.95	42.70	27.3	4.10	41.80	26.6	4.31	40.20	26.1	4.68
90.0	75.0	47.60	28.1	3.25	45.90	27.1	3.61	44.30	26.5	3.98	43.50	26.1	4.13	42.60	25.6	4.34	41.00	24.6	4.71

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.1.3 FAQ

FAQ18PVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	8.9	0.54	11.68	8.9	0.59	11.68	8.9	0.68	11.68	8.9	0.73	11.68	8.9	0.79	11.68	8.9	0.91
72.0	61.0	14.21	11.7	0.66	14.21	11.7	0.75	14.21	11.7	0.87	14.21	11.7	0.93	14.21	11.7	1.01	14.21	11.7	1.18
77.0	64.0	16.10	12.7	0.76	16.10	12.7	0.89	16.10	12.7	1.04	16.10	12.7	1.11	16.10	12.7	1.21	16.10	12.7	1.40
80.0	67.0	18.00	13.7	0.88	18.00	13.7	1.03	18.00	13.7	1.21	18.00	13.7	1.30	18.00	13.7	1.42	17.27	13.7	1.54
86.0	72.0	20.79	14.1	1.07	20.06	14.1	1.19	19.32	14.1	1.31	19.00	14.1	1.37	18.59	14.1	1.43	17.86	14.1	1.56
90.0	75.0	21.14	12.8	1.08	20.41	12.8	1.20	19.68	12.8	1.32	19.35	12.8	1.37	18.95	12.8	1.44	18.21	12.8	1.57

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FAQ24PVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	14.3	0.88	15.57	14.3	0.96	15.57	14.3	1.12	15.57	14.3	1.19	15.57	14.3	1.29	15.57	14.3	1.49
72.0	61.0	18.94	15.3	1.08	18.94	15.3	1.23	18.94	15.3	1.44	18.94	15.3	1.54	18.94	15.3	1.68	18.94	15.3	1.95
77.0	64.0	21.47	16.5	1.24	21.47	16.5	1.46	21.47	16.5	1.71	21.47	16.5	1.83	21.47	16.5	2.00	21.47	16.5	2.33
80.0	67.0	24.00	18.0	1.44	24.00	18.0	1.71	24.00	18.0	2.01	24.00	18.0	2.16	24.00	18.0	2.35	23.02	18.0	2.56
86.0	72.0	27.72	18.8	1.77	26.74	18.4	1.97	25.76	18.0	2.18	25.33	17.8	2.27	24.79	17.6	2.38	23.81	17.2	2.59
90.0	75.0	28.19	17.5	1.78	27.21	17.0	1.98	26.24	16.6	2.19	25.80	16.4	2.28	25.26	16.2	2.40	24.29	15.7	2.61

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.1.4 FBQ

FBQ18PVJU + RZR18PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	11.1	0.54	11.68	11.1	0.58	11.68	11.1	0.66	11.68	11.1	0.70	11.68	11.1	0.75	11.68	11.1	0.85
72.0	61.0	14.21	12.9	0.52	14.21	12.9	0.72	14.21	12.9	0.82	14.21	12.9	0.87	14.21	12.9	0.94	14.21	12.9	1.07
77.0	64.0	16.10	14.0	0.60	16.10	14.0	0.83	16.10	14.0	0.96	16.10	14.0	1.02	16.10	14.0	1.10	16.10	14.0	1.27
80.0	67.0	18.00	14.8	0.70	18.00	14.8	0.95	18.00	14.8	1.10	18.00	14.8	1.18	18.00	14.8	1.28	17.27	14.3	1.38
86.0	72.0	20.79	14.9	0.86	20.06	14.5	1.09	19.32	14.1	1.19	19.00	14.0	1.23	18.59	13.7	1.29	17.86	13.3	1.39
90.0	75.0	21.14	12.9	0.87	20.41	12.4	1.09	19.68	12.0	1.20	19.35	11.8	1.24	18.95	11.5	1.30	18.21	11.1	1.40

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ24PVJU + RZR24PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	13.8	0.81	15.57	13.8	0.88	15.57	13.8	1.00	15.57	13.8	1.06	15.57	13.8	1.14	15.57	13.8	1.31
72.0	61.0	18.94	16.2	0.97	18.94	16.2	1.09	18.94	16.2	1.26	18.94	16.2	1.34	18.94	16.2	1.45	18.94	16.2	1.67
77.0	64.0	21.47	17.6	1.10	21.47	17.6	1.28	21.47	17.6	1.48	21.47	17.6	1.58	21.47	17.6	1.71	21.47	17.6	1.98
80.0	67.0	24.00	18.7	1.27	24.00	18.7	1.48	24.00	18.7	1.72	24.00	18.7	1.84	24.00	18.7	2.00	23.02	18.1	2.16
86.0	72.0	27.72	19.2	1.53	26.74	18.7	1.69	25.76	18.2	1.86	25.33	18.0	1.93	24.79	17.7	2.02	23.81	17.2	2.19
90.0	75.0	28.19	20.8	1.54	27.21	20.5	1.70	26.24	20.1	1.87	25.80	20.0	1.94	25.26	19.8	2.04	24.29	19.3	2.21

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ30PVJU + RZR30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	17.1	1.12	19.47	17.1	1.21	19.47	17.1	1.40	19.47	17.1	1.49	19.47	17.1	1.61	19.47	17.1	1.84
72.0	61.0	23.68	20.0	1.36	23.68	20.0	1.54	23.68	20.0	1.78	23.68	20.0	1.90	23.68	20.0	2.06	23.68	20.0	2.38
77.0	64.0	26.84	21.9	1.55	26.84	21.9	1.80	26.84	21.9	2.10	26.84	21.9	2.25	26.84	21.9	2.44	26.84	21.9	2.83
80.0	67.0	30.00	23.4	1.79	30.00	23.4	2.10	30.00	23.4	2.45	30.00	23.4	2.62	30.00	23.4	2.86	28.78	22.6	3.10
86.0	72.0	34.65	24.0	2.17	33.43	23.4	2.41	32.21	22.7	2.65	31.66	22.4	2.75	30.99	22.1	2.89	29.77	21.4	3.13
90.0	75.0	35.24	23.5	2.18	34.02	23.0	2.42	32.80	22.4	2.66	32.25	22.2	2.77	31.58	21.9	2.91	30.36	21.2	3.16

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ36PVJU + RZR36PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	23.40	19.7	1.25	23.40	19.7	1.36	23.40	19.7	1.57	23.40	19.7	1.67	23.40	19.7	1.80	23.40	19.7	2.07
72.0	61.0	28.40	23.1	1.52	28.40	23.1	1.72	28.40	23.1	2.00	28.40	23.1	2.13	28.40	23.1	2.31	28.40	23.1	2.68
77.0	64.0	32.20	25.4	1.73	32.20	25.4	2.03	32.20	25.4	2.36	32.20	25.4	2.53	32.20	25.4	2.74	32.20	25.4	3.19
80.0	67.0	36.00	27.2	2.01	36.00	27.2	2.36	36.00	27.2	2.76	36.00	27.2	2.96	36.00	27.2	3.21	34.50	26.4	3.48
86.0	72.0	41.60	28.2	2.44	40.10	27.5	2.71	38.60	26.7	2.98	38.00	26.4	3.10	37.20	26.0	3.25	35.70	25.2	3.53
90.0	75.0	42.30	27.2	2.46	40.80	26.4	2.72	39.40	25.7	3.00	38.70	25.3	3.12	37.90	24.9	3.28	36.40	24.1	3.55

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ42PVJU + RZR42PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	27.27	23.1	1.59	27.27	23.1	1.73	27.27	23.1	2.00	27.27	23.1	2.13	27.27	23.1	2.30	27.27	23.1	2.64
72.0	61.0	33.19	27.1	1.93	33.19	27.1	2.19	33.19	27.1	2.56	33.19	27.1	2.73	33.19	27.1	2.96	33.19	27.1	3.43
77.0	64.0	37.54	29.6	2.21	37.54	29.6	2.59	37.54	29.6	3.02	37.54	29.6	3.23	37.54	29.6	3.51	37.54	29.6	4.08
80.0	67.0	42.00	31.6	2.56	42.00	31.6	3.02	42.00	31.6	3.52	42.00	31.6	3.78	42.00	31.6	4.12	40.34	30.8	4.46
86.0	72.0	48.53	32.6	3.12	46.77	31.8	3.47	45.11	31.1	3.81	44.28	30.7	3.96	43.35	30.3	4.17	41.69	29.4	4.52
90.0	75.0	49.36	31.5	3.14	47.60	30.6	3.49	45.94	29.8	3.84	45.11	29.4	3.99	44.18	29.0	4.19	42.52	28.1	4.55

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2 Heat Pump

9.2.1 FCQ

FCQ18PAVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.7	0.59	11.68	10.7	0.63	11.68	10.6	0.72	11.68	10.6	0.76	11.68	10.6	0.81	11.68	10.6	0.92
72.0	61.0	14.21	12.4	0.70	14.21	12.4	0.78	14.21	12.3	0.89	14.21	12.3	0.95	14.21	12.3	1.02	14.21	12.3	1.17
77.0	64.0	16.10	13.4	0.79	16.10	13.4	0.90	16.10	13.3	1.04	16.10	13.3	1.11	16.10	13.3	1.19	16.10	13.3	1.37
80.0	67.0	18.00	14.2	0.90	18.00	14.2	1.04	18.00	14.1	1.20	18.00	14.1	1.28	18.00	14.1	1.38	17.27	13.8	1.49
86.0	72.0	20.79	14.6	1.07	20.06	14.2	1.18	19.32	13.8	1.29	19.00	13.5	1.34	18.59	13.5	1.40	17.86	13.4	1.51
90.0	75.0	21.14	14.2	1.08	20.41	13.7	1.19	19.68	13.5	1.30	19.35	13.5	1.35	18.95	13.2	1.41	18.21	12.6	1.52

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	2.64	23.33	2.33	23.33	1.97	23.33	1.74	23.33	1.62
64	22.22	2.48	22.22	2.19	22.22	1.86	22.22	1.64	22.22	1.53
68	20.74	2.28	20.74	2.02	20.74	1.72	20.74	1.52	20.74	1.42
70	20.00	2.18	20.00	1.93	20.00	1.65	20.00	1.46	20.00	1.37
72	19.26	2.08	19.26	1.85	19.26	1.59	19.26	1.41	19.26	1.32
75	18.15	1.94	18.15	1.73	18.15	1.49	18.15	1.32	18.15	1.24

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ24PAVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	14.2	0.81	15.57	14.2	0.88	15.57	14.1	1.00	15.57	14.1	1.06	15.57	14.1	1.14	15.57	14.1	1.31
72.0	61.0	18.94	16.7	0.97	18.94	16.7	1.10	18.94	16.6	1.26	18.94	16.6	1.35	18.94	16.6	1.45	18.94	16.6	1.67
77.0	64.0	21.47	18.3	1.10	21.47	18.3	1.28	21.47	18.2	1.48	21.47	18.2	1.58	21.47	18.2	1.72	21.47	18.2	1.98
80.0	67.0	24.00	19.0	1.27	24.00	19.0	1.48	24.00	18.9	1.72	24.00	18.9	1.84	24.00	18.9	2.00	23.02	18.7	2.16
86.0	72.0	27.72	19.7	1.53	26.74	19.0	1.69	25.76	18.6	1.86	25.33	18.2	1.93	24.79	18.1	2.02	23.81	17.8	2.19
90.0	75.0	28.19	18.9	1.54	27.21	18.2	1.70	26.24	17.8	1.87	25.80	18.0	1.94	25.26	17.9	2.04	24.29	17.3	2.20

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.18	2.46	26.67	2.57	30.49	2.69	31.50	2.48	31.50	2.31
64	24.14	2.51	26.63	2.61	30.00	2.67	30.00	2.35	30.00	2.18
68	24.09	2.58	26.57	2.67	28.00	2.46	28.00	2.17	28.00	2.02
70	24.06	2.61	26.55	2.70	27.00	2.36	27.00	2.08	27.00	1.94
72	24.03	2.64	26.00	2.65	26.00	2.26	26.00	2.00	26.00	1.86
75	23.99	2.69	24.50	2.47	24.50	2.11	24.50	1.87	24.50	1.75

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ30PAVJU + RZQ30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	16.6	1.28	19.47	16.6	1.39	19.47	16.6	1.59	19.47	16.6	1.69	19.47	16.6	1.82	19.47	16.6	2.09
72.0	61.0	23.68	19.4	1.55	23.68	19.4	1.75	23.68	19.4	2.02	23.68	19.4	2.15	23.68	19.4	2.33	23.68	19.4	2.69
77.0	64.0	26.84	21.2	1.76	26.84	21.2	2.05	26.84	21.1	2.38	26.84	21.1	2.54	26.84	21.1	2.76	26.84	21.1	3.20
80.0	67.0	30.00	22.2	2.03	30.00	22.2	2.37	30.00	22.3	2.77	30.00	22.3	2.97	30.00	22.3	3.23	28.78	21.5	3.50
86.0	72.0	34.65	22.9	2.46	33.43	22.1	2.72	32.21	21.8	2.99	31.66	21.8	3.11	30.99	21.3	3.26	29.77	20.8	3.54
90.0	75.0	35.24	21.8	2.47	34.02	21.1	2.74	32.80	21.1	3.01	32.25	20.6	3.13	31.58	20.6	3.28	30.36	19.9	3.56

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.41	2.34	26.89	2.48	30.72	2.66	34.22	2.79	36.45	2.86
64	24.36	2.41	26.84	2.55	30.66	2.72	34.17	2.84	36.40	2.91
68	24.29	2.50	26.77	2.63	30.59	2.79	34.10	2.91	35.26	2.84
70	24.25	2.55	26.74	2.67	30.56	2.83	34.00	2.93	34.00	2.73
72	24.22	2.59	26.70	2.72	30.53	2.86	32.74	2.81	32.74	2.62
75	24.17	2.66	26.65	2.78	30.47	2.92	30.85	2.63	30.85	2.45

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ36PAVJU + RZQ36PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	23.40	21.3	1.24	23.40	21.3	1.34	23.40	21.2	1.54	23.40	21.2	1.65	23.40	21.2	1.77	23.40	21.2	2.04
72.0	61.0	28.40	24.7	1.50	28.40	24.7	1.69	28.40	24.6	1.96	28.40	24.6	2.10	28.40	24.6	2.27	28.40	24.6	2.63
77.0	64.0	32.20	26.7	1.71	32.20	26.7	2.00	32.20	26.7	2.32	32.20	26.7	2.48	32.20	26.7	2.70	32.20	26.7	3.13
80.0	67.0	36.00	28.4	1.97	36.00	28.4	2.31	36.00	28.6	2.71	36.00	28.6	2.90	36.00	28.6	3.16	34.50	27.8	3.42
86.0	72.0	41.60	29.5	2.40	40.10	28.5	2.66	38.60	28.0	2.93	38.00	27.7	3.05	37.20	27.3	3.20	35.70	26.8	3.47
90.0	75.0	42.30	28.8	2.41	40.80	27.7	2.68	39.40	27.5	2.94	38.70	26.9	3.06	37.90	26.4	3.21	36.40	26.0	3.49

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	30.48	2.82	33.92	2.99	37.47	3.14	41.72	3.28	44.46	3.36
64	30.38	2.89	33.92	3.06	37.37	3.20	41.72	3.33	44.35	3.41
68	30.28	2.99	33.82	3.15	37.37	3.28	41.52	3.39	41.52	3.16
70	30.28	3.04	33.82	3.20	37.27	3.32	40.00	3.26	40.00	3.03
72	30.28	3.10	33.72	3.24	37.27	3.36	38.48	3.12	38.48	2.91
75	30.28	3.17	33.72	3.31	36.25	3.30	36.25	2.92	36.25	2.72

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (Comp.+indoor+outdoor fan motor). (kW)

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FCQ42PAVJU + RZQ42PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	27.27	22.4	1.58	27.27	22.4	1.72	27.27	22.4	1.99	27.27	22.4	2.11	27.27	22.4	2.28	27.27	22.4	2.62
72.0	61.0	33.19	26.5	1.92	33.19	26.5	2.18	33.19	26.4	2.53	33.19	26.4	2.70	33.19	26.4	2.93	33.19	26.4	3.39
77.0	64.0	37.54	28.9	2.20	37.54	28.9	2.56	37.54	28.9	3.00	37.54	28.9	3.20	37.54	28.9	3.48	37.54	28.9	4.05
80.0	67.0	42.00	31.1	2.54	42.00	31.1	2.99	42.00	30.9	3.49	42.00	30.9	3.74	42.00	30.9	4.08	40.34	30.2	4.42
86.0	72.0	48.53	32.5	3.09	46.77	31.3	3.43	45.11	30.4	3.78	44.28	30.1	3.93	43.35	29.6	4.13	41.69	28.7	4.48
90.0	75.0	49.36	31.1	3.11	47.60	30.0	3.45	45.94	29.4	3.80	45.11	29.0	3.96	44.18	28.5	4.15	42.52	27.8	4.51

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	34.54	3.28	38.51	3.50	42.47	3.68	47.34	3.86	50.40	3.96
64	34.43	3.38	38.39	3.59	42.36	3.75	47.23	3.93	50.28	4.01
68	34.32	3.50	38.28	3.70	42.24	3.86	47.11	4.01	48.70	3.93
70	34.32	3.57	38.28	3.75	42.24	3.91	47.00	4.05	47.00	3.77
72	34.32	3.63	38.28	3.81	42.24	3.96	45.30	3.88	45.30	3.61
75	34.20	3.73	38.17	3.89	42.13	4.03	42.70	3.63	42.70	3.39

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2.2 FHQ

FHQ18PVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	10.6	0.54	11.68	10.6	0.59	11.68	10.6	0.66	11.68	10.6	0.70	11.68	10.6	0.75	11.68	10.6	0.85
72.0	61.0	14.21	11.9	0.52	14.21	11.9	0.72	14.21	11.9	0.83	14.21	11.9	0.88	14.21	11.9	0.95	14.21	11.9	1.08
77.0	64.0	16.10	12.7	0.60	16.10	12.7	0.84	16.10	12.7	0.96	16.10	12.7	1.03	16.10	12.7	1.11	16.10	12.7	1.28
80.0	67.0	18.00	13.3	0.70	18.00	13.3	0.96	18.00	13.3	1.11	18.00	13.3	1.19	18.00	13.3	1.29	17.27	13.3	1.39
86.0	72.0	20.79	14.2	0.87	20.06	14.0	1.09	19.32	13.2	1.20	19.00	13.3	1.24	18.59	13.2	1.30	17.86	12.7	1.40
90.0	75.0	21.14	13.5	0.87	20.41	13.2	1.10	19.68	12.7	1.20	19.35	12.8	1.25	18.95	12.5	1.31	18.21	12.2	1.41

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	2.73	23.33	2.40	23.33	2.04	23.33	1.79	23.33	1.67
64	22.22	2.56	22.22	2.26	22.22	1.92	22.22	1.70	22.22	1.58
68	20.74	2.35	20.74	2.08	20.74	1.78	20.74	1.57	20.74	1.47
70	20.00	2.25	20.00	2.00	20.00	1.71	20.00	1.51	20.00	1.41
72	19.26	2.15	19.26	1.91	19.26	1.63	19.26	1.45	19.26	1.36
75	18.15	2.00	18.15	1.78	18.15	1.53	18.15	1.36	18.15	1.27

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ24PVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	12.6	0.77	15.57	12.6	0.83	15.57	12.6	0.95	15.57	12.6	1.01	15.57	12.6	1.09	15.57	12.6	1.24
72.0	61.0	18.94	14.9	0.93	18.94	14.9	1.04	18.94	14.9	1.20	18.94	14.9	1.28	18.94	14.9	1.38	18.94	14.9	1.59
77.0	64.0	21.47	16.3	1.05	21.47	16.3	1.22	21.47	16.3	1.41	21.47	16.3	1.51	21.47	16.3	1.63	21.47	16.3	1.89
80.0	67.0	24.00	17.1	1.21	24.00	17.1	1.41	24.00	17.1	1.64	24.00	17.1	1.75	24.00	17.1	1.90	23.02	16.4	2.06
86.0	72.0	27.72	17.5	1.46	26.74	16.9	1.61	25.76	16.5	1.77	25.33	16.2	1.84	24.79	16.1	1.93	23.81	15.5	2.09
90.0	75.0	28.19	16.9	1.47	27.21	16.3	1.62	26.24	15.7	1.78	25.80	15.5	1.85	25.26	15.2	1.94	24.29	14.6	2.10

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.18	2.60	26.67	2.71	30.49	2.84	31.50	2.62	31.50	2.43
64	24.14	2.65	26.63	2.76	30.00	2.82	30.00	2.48	30.00	2.30
68	24.09	2.72	26.57	2.82	28.00	2.60	28.00	2.29	28.00	2.13
70	24.06	2.76	26.55	2.85	27.00	2.49	27.00	2.20	27.00	2.05
72	24.03	2.79	26.00	2.80	26.00	2.38	26.00	2.11	26.00	1.97
75	23.99	2.84	24.50	2.61	24.50	2.23	24.50	1.97	24.50	1.84

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ30PVJU + RZQ30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	15.6	1.12	19.47	15.6	1.21	19.47	15.6	1.40	19.47	15.6	1.49	19.47	15.6	1.61	19.47	15.6	1.84
72.0	61.0	23.68	18.5	1.36	23.68	18.5	1.54	23.68	18.5	1.78	23.68	18.5	1.90	23.68	18.5	2.06	23.68	18.5	2.38
77.0	64.0	26.84	19.9	1.55	26.84	19.9	1.80	26.84	19.9	2.10	26.84	19.9	2.25	26.84	19.9	2.44	26.84	19.9	2.83
80.0	67.0	30.00	21.1	1.79	30.00	21.1	2.10	30.00	21.1	2.45	30.00	21.1	2.62	30.00	21.1	2.86	28.78	20.2	3.10
86.0	72.0	34.65	21.8	2.17	33.43	21.0	2.41	32.21	20.6	2.65	31.66	20.3	2.75	30.99	20.2	2.89	29.77	19.4	3.13
90.0	75.0	35.24	21.1	2.18	34.02	20.4	2.42	32.80	19.7	2.66	32.25	19.4	2.77	31.58	18.9	2.91	30.36	18.3	3.16

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.41	2.94	26.89	3.12	30.72	3.35	34.22	3.51	36.45	3.60
64	24.36	3.03	26.84	3.20	30.66	3.42	34.17	3.57	36.40	3.66
68	24.29	3.14	26.77	3.31	30.59	3.51	34.10	3.66	35.26	3.58
70	24.25	3.20	26.74	3.36	30.56	3.56	34.00	3.69	34.00	3.43
72	24.22	3.26	26.70	3.42	30.53	3.60	32.74	3.53	32.74	3.29
75	24.17	3.35	26.65	3.50	30.47	3.67	30.85	3.31	30.85	3.08

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ36MVJU + RZQ36PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	23.40	18.5	1.37	23.40	18.5	1.49	23.40	18.5	1.73	23.40	18.5	1.83	23.40	18.5	1.98	23.40	18.5	2.27
72.0	61.0	28.40	21.9	1.67	28.40	21.9	1.89	28.40	21.8	2.20	28.40	21.8	2.34	28.40	21.8	2.54	28.40	21.8	2.94
77.0	64.0	32.20	23.8	1.90	32.20	23.8	2.23	32.20	23.9	2.59	32.20	23.9	2.77	32.20	23.9	3.01	32.20	23.9	3.50
80.0	67.0	36.00	25.2	2.21	36.00	25.2	2.59	36.00	25.1	3.03	36.00	25.1	3.25	36.00	25.1	3.53	34.50	24.0	3.82
86.0	72.0	41.60	26.2	2.68	40.10	25.3	2.97	38.60	24.6	3.27	38.00	24.3	3.40	37.20	23.7	3.57	35.70	23.2	3.87
90.0	75.0	42.30	25.0	2.70	40.80	24.1	2.99	39.40	23.6	3.29	38.70	23.2	3.42	37.90	22.8	3.60	36.40	21.8	3.90

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	28.60	3.18	31.90	3.38	35.20	3.54	39.20	3.70	41.80	3.79
64	28.60	3.26	31.80	3.45	35.10	3.61	39.10	3.76	41.70	3.84
68	28.50	3.38	31.80	3.56	35.10	3.70	38.90	3.82	38.90	3.55
70	28.40	3.43	31.70	3.61	35.00	3.74	37.50	3.66	37.50	3.40
72	28.40	3.49	31.70	3.65	35.00	3.80	36.10	3.51	36.10	3.27
75	28.30	3.57	31.60	3.73	34.00	3.72	34.00	3.29	34.00	3.06

Symbols:
EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FHQ42MVJU + RZQ42PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	26.30	20.8	1.65	26.30	20.8	1.79	26.30	20.8	2.07	26.30	20.8	2.20	26.30	20.8	2.38	26.30	20.8	2.74
72.0	61.0	32.00	24.6	2.00	32.00	24.6	2.27	32.00	24.5	2.65	32.00	24.5	2.83	32.00	24.5	3.06	32.00	24.5	3.55
77.0	64.0	36.20	26.8	2.29	36.20	26.8	2.68	36.20	26.9	3.12	36.20	26.9	3.34	36.20	26.9	3.64	36.20	26.9	4.22
80.0	67.0	40.50	28.4	2.65	40.50	28.4	3.12	40.50	28.2	3.65	40.50	28.2	3.92	40.50	28.2	4.26	38.90	27.1	4.62
86.0	72.0	46.80	29.5	3.23	45.10	28.4	3.59	43.50	27.7	3.95	42.70	27.3	4.10	41.80	26.6	4.31	40.20	26.1	4.68
90.0	75.0	47.60	28.1	3.25	45.90	27.1	3.61	44.30	26.5	3.98	43.50	26.1	4.13	42.60	25.6	4.34	41.00	24.6	4.71

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	29.00	3.23	32.40	3.44	35.70	3.62	39.80	3.80	42.30	3.90
64	29.00	3.32	32.30	3.53	35.60	3.69	39.70	3.87	42.30	3.95
68	28.90	3.44	32.20	3.64	35.50	3.80	39.60	3.95	41.00	3.87
70	28.80	3.51	32.20	3.69	35.50	3.85	39.50	3.99	39.50	3.71
72	28.80	3.57	32.10	3.75	35.50	3.90	38.00	3.82	38.00	3.56
75	28.70	3.67	32.10	3.83	35.40	3.97	35.80	3.57	35.80	3.33

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2.3 FAQ

FAQ18PVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	8.9	0.54	11.68	8.9	0.59	11.68	8.9	0.68	11.68	8.9	0.73	11.68	8.9	0.79	11.68	8.9	0.91
72.0	61.0	14.21	11.7	0.66	14.21	11.7	0.75	14.21	11.7	0.87	14.21	11.7	0.93	14.21	11.7	1.01	14.21	11.7	1.18
77.0	64.0	16.10	12.7	0.76	16.10	12.7	0.89	16.10	12.7	1.04	16.10	12.7	1.11	16.10	12.7	1.21	16.10	12.7	1.40
80.0	67.0	18.00	13.7	0.88	18.00	13.7	1.03	18.00	13.7	1.21	18.00	13.7	1.30	18.00	13.7	1.42	17.27	13.7	1.54
86.0	72.0	20.79	14.1	1.07	20.06	14.1	1.19	19.32	14.1	1.31	19.00	14.1	1.37	18.59	14.1	1.43	17.86	14.1	1.56
90.0	75.0	21.14	12.8	1.08	20.41	12.8	1.20	19.68	12.8	1.32	19.35	12.8	1.37	18.95	12.8	1.44	18.21	12.8	1.57

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	3.48	23.33	3.06	23.33	2.57	23.33	2.25	23.33	2.08
64	22.22	3.27	22.22	2.87	22.22	2.42	22.22	2.12	22.22	1.96
68	20.74	2.99	20.74	2.63	20.74	2.22	20.74	1.95	20.74	1.81
70	20.00	2.85	20.00	2.51	20.00	2.13	20.00	1.87	20.00	1.74
72	19.26	2.72	19.26	2.40	19.26	2.04	19.26	1.79	19.26	1.66
75	18.15	2.52	18.15	2.23	18.15	1.90	18.15	1.67	18.15	1.56

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FAQ24PVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	14.3	0.88	15.57	14.3	0.96	15.57	14.3	1.12	15.57	14.3	1.19	15.57	14.3	1.29	15.57	14.3	1.49
72.0	61.0	18.94	15.3	1.08	18.94	15.3	1.23	18.94	15.3	1.44	18.94	15.3	1.54	18.94	15.3	1.68	18.94	15.3	1.95
77.0	64.0	21.47	16.5	1.24	21.47	16.5	1.46	21.47	16.5	1.71	21.47	16.5	1.83	21.47	16.5	2.00	21.47	16.5	2.33
80.0	67.0	24.00	18.0	1.44	24.00	18.0	1.71	24.00	18.0	2.01	24.00	18.0	2.16	24.00	18.0	2.35	23.02	18.0	2.56
86.0	72.0	27.72	18.8	1.77	26.74	18.4	1.97	25.76	18.0	2.18	25.33	17.8	2.27	24.79	17.6	2.38	23.81	17.2	2.59
90.0	75.0	28.19	17.5	1.78	27.21	17.0	1.98	26.24	16.6	2.19	25.80	16.4	2.28	25.26	16.2	2.40	24.29	15.7	2.61

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	25.08	4.19	27.66	4.36	31.50	4.54	31.50	3.96	31.50	3.67
64	25.04	4.27	27.62	4.44	30.00	4.27	30.00	3.74	30.00	3.46
68	24.99	4.38	27.57	4.53	28.00	3.93	28.00	3.44	28.00	3.19
70	24.96	4.44	27.00	4.44	27.00	3.76	27.00	3.30	27.00	3.06
72	24.93	4.49	26.00	4.24	26.00	3.59	26.00	3.15	26.00	2.93
75	24.50	4.46	24.50	3.94	24.50	3.35	24.50	2.95	24.50	2.74

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (Comp.+indoor+outdoor fan motor). (kW)

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

9.2.4 FBQ

FBQ18PVJU + RZQ18PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	11.68	11.1	0.54	11.68	11.1	0.58	11.68	11.1	0.66	11.68	11.1	0.70	11.68	11.1	0.75	11.68	11.1	0.85
72.0	61.0	14.21	12.9	0.52	14.21	12.9	0.72	14.21	12.9	0.82	14.21	12.9	0.87	14.21	12.9	0.94	14.21	12.9	1.07
77.0	64.0	16.10	14.0	0.60	16.10	14.0	0.83	16.10	14.0	0.96	16.10	14.0	1.02	16.10	14.0	1.10	16.10	14.0	1.27
80.0	67.0	18.00	14.8	0.70	18.00	14.8	0.95	18.00	14.8	1.10	18.00	14.8	1.18	18.00	14.8	1.28	17.27	14.3	1.38
86.0	72.0	20.79	14.9	0.86	20.06	14.5	1.09	19.32	14.1	1.19	19.00	14.0	1.23	18.59	13.7	1.29	17.86	13.3	1.39
90.0	75.0	21.14	12.9	0.87	20.41	12.4	1.09	19.68	12.0	1.20	19.35	11.8	1.24	18.95	11.5	1.30	18.21	11.1	1.40

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	23.33	2.78	23.33	2.46	23.33	2.08	23.33	1.83	23.33	1.70
64	22.22	2.62	22.22	2.31	22.22	1.97	22.22	1.73	22.22	1.61
68	20.74	2.40	20.74	2.13	20.74	1.81	20.74	1.60	20.74	1.50
70	20.00	2.30	20.00	2.04	20.00	1.74	20.00	1.54	20.00	1.44
72	19.26	2.19	19.26	1.95	19.26	1.67	19.26	1.48	19.26	1.38
75	18.15	2.04	18.15	1.82	18.15	1.56	18.15	1.39	18.15	1.30

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ24PVJU + RZQ24PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	15.57	13.8	0.81	15.57	13.8	0.88	15.57	13.8	1.00	15.57	13.8	1.06	15.57	13.8	1.14	15.57	13.8	1.31
72.0	61.0	18.94	16.2	0.97	18.94	16.2	1.09	18.94	16.2	1.26	18.94	16.2	1.34	18.94	16.2	1.45	18.94	16.2	1.67
77.0	64.0	21.47	17.6	1.10	21.47	17.6	1.28	21.47	17.6	1.48	21.47	17.6	1.58	21.47	17.6	1.71	21.47	17.6	1.98
80.0	67.0	24.00	18.7	1.27	24.00	18.7	1.48	24.00	18.7	1.72	24.00	18.7	1.84	24.00	18.7	2.00	23.02	18.1	2.16
86.0	72.0	27.72	19.2	1.53	26.74	18.7	1.69	25.76	18.2	1.86	25.33	18.0	1.93	24.79	17.7	2.02	23.81	17.2	2.19
90.0	75.0	28.19	20.8	1.54	27.21	20.5	1.70	26.24	20.1	1.87	25.80	20.0	1.94	25.26	19.8	2.04	24.29	19.3	2.21

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.18	2.75	26.67	2.87	30.49	3.01	31.50	2.78	31.50	2.58
64	24.14	2.81	26.63	2.92	30.00	2.98	30.00	2.62	30.00	2.44
68	24.09	2.88	26.57	2.98	28.00	2.75	28.00	2.42	28.00	2.26
70	24.06	2.92	26.55	3.02	27.00	2.64	27.00	2.33	27.00	2.17
72	24.03	2.95	26.00	2.96	26.00	2.52	26.00	2.23	26.00	2.08
75	23.99	3.01	24.50	2.76	24.50	2.36	24.50	2.09	24.50	1.95

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ30PVJU + RZQ30PVJU

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	19.47	17.1	1.12	19.47	17.1	1.21	19.47	17.1	1.40	19.47	17.1	1.49	19.47	17.1	1.61	19.47	17.1	1.84
72.0	61.0	23.68	20.0	1.36	23.68	20.0	1.54	23.68	20.0	1.78	23.68	20.0	1.90	23.68	20.0	2.06	23.68	20.0	2.38
77.0	64.0	26.84	21.9	1.55	26.84	21.9	1.80	26.84	21.9	2.10	26.84	21.9	2.25	26.84	21.9	2.44	26.84	21.9	2.83
80.0	67.0	30.00	23.4	1.79	30.00	23.4	2.10	30.00	23.4	2.45	30.00	23.4	2.62	30.00	23.4	2.86	28.78	22.6	3.10
86.0	72.0	34.65	24.0	2.17	33.43	23.4	2.41	32.21	22.7	2.65	31.66	22.4	2.75	30.99	22.1	2.89	29.77	21.4	3.13
90.0	75.0	35.24	23.5	2.18	34.02	23.0	2.42	32.80	22.4	2.66	32.25	22.2	2.77	31.58	21.9	2.91	30.36	21.2	3.16

Heating Capacity 〔 230V-60Hz 〕

Indoor air temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	24.41	2.40	26.89	2.55	30.72	2.74	34.22	2.87	36.45	2.95
64	24.36	2.48	26.84	2.62	30.66	2.80	34.17	2.92	36.40	2.99
68	24.29	2.57	26.77	2.71	30.59	2.87	34.10	2.99	35.26	2.93
70	24.25	2.62	26.74	2.75	30.56	2.91	34.00	3.02	34.00	2.81
72	24.22	2.67	26.70	2.80	30.53	2.95	32.74	2.89	32.74	2.69
75	24.17	2.74	26.65	2.86	30.47	3.01	30.85	2.71	30.85	2.52

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ36PVJU + RZQ36PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	23.40	19.7	1.25	23.40	19.7	1.36	23.40	19.7	1.57	23.40	19.7	1.67	23.40	19.7	1.80	23.40	19.7	2.07
72.0	61.0	28.40	23.1	1.52	28.40	23.1	1.72	28.40	23.1	2.00	28.40	23.1	2.13	28.40	23.1	2.31	28.40	23.1	2.68
77.0	64.0	32.20	25.4	1.73	32.20	25.4	2.03	32.20	25.4	2.36	32.20	25.4	2.53	32.20	25.4	2.74	32.20	25.4	3.19
80.0	67.0	36.00	27.2	2.01	36.00	27.2	2.36	36.00	27.2	2.76	36.00	27.2	2.96	36.00	27.2	3.21	34.50	26.4	3.48
86.0	72.0	41.60	28.2	2.44	40.10	27.5	2.71	38.60	26.7	2.98	38.00	26.4	3.10	37.20	26.0	3.25	35.70	25.2	3.53
90.0	75.0	42.30	27.2	2.46	40.80	26.4	2.72	39.40	25.7	3.00	38.70	25.3	3.12	37.90	24.9	3.28	36.40	24.1	3.55

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	30.51	2.91	34.03	3.09	37.55	3.23	41.81	3.38	44.59	3.46
64	30.51	2.98	33.92	3.15	37.44	3.30	41.71	3.44	44.48	3.51
68	30.40	3.09	33.92	3.25	37.44	3.38	41.49	3.50	41.49	3.24
70	30.29	3.14	33.81	3.30	37.33	3.42	40.00	3.35	40.00	3.11
72	30.29	3.19	33.81	3.34	37.33	3.47	38.51	3.21	38.51	2.99
75	30.19	3.27	33.71	3.41	36.27	3.40	36.27	3.01	36.27	2.80

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

FBQ42PVJU + RZQ42PVJU9

Cooling Capacity 〔 230V-60Hz 〕

Indoor Air Temp.		Outdoor Air Temp. °FDB																	
		68			77			86			90			95			104		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
°FDB	°FWB	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW	kBTUH	MBh	kW
68.0	57.0	27.27	23.1	1.59	27.27	23.1	1.73	27.27	23.1	2.00	27.27	23.1	2.13	27.27	23.1	2.30	27.27	23.1	2.64
72.0	61.0	33.19	27.1	1.93	33.19	27.1	2.19	33.19	27.1	2.56	33.19	27.1	2.73	33.19	27.1	2.96	33.19	27.1	3.43
77.0	64.0	37.54	29.6	2.21	37.54	29.6	2.59	37.54	29.6	3.02	37.54	29.6	3.23	37.54	29.6	3.51	37.54	29.6	4.08
80.0	67.0	42.00	31.6	2.56	42.00	31.6	3.02	42.00	31.6	3.52	42.00	31.6	3.78	42.00	31.6	4.12	40.34	30.8	4.46
86.0	72.0	48.53	32.6	3.12	46.77	31.8	3.47	45.11	31.1	3.81	44.28	30.7	3.96	43.35	30.3	4.17	41.69	29.4	4.52
90.0	75.0	49.36	31.5	3.14	47.60	30.6	3.49	45.94	29.8	3.84	45.11	29.4	3.99	44.18	29.0	4.19	42.52	28.1	4.55

Heating Capacity 〔 230V-60Hz 〕

Indoor Air Temp.	Outdoor Air Temp. °FWB									
	14		23		32		43		50	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
°FDB	MBh	kW	MBh	kW	MBh	kW	MBh	kW	MBh	kW
61	34.51	3.28	38.55	3.49	42.48	3.67	47.36	3.85	50.33	3.96
64	34.51	3.37	38.43	3.58	42.36	3.75	47.24	3.93	50.33	4.01
68	34.39	3.49	38.31	3.69	42.24	3.85	47.12	4.01	48.78	3.93
70	34.27	3.56	38.31	3.75	42.24	3.91	47.00	4.05	47.00	3.77
72	34.27	3.63	38.19	3.81	42.24	3.96	45.22	3.88	45.22	3.62
75	34.15	3.72	38.19	3.89	42.12	4.03	42.60	3.63	42.60	3.38

Symbols:

EWB: Entering wet bulb temp. (°FWB)
EDB: Entering dry bulb temp. (°FDB)
TC : Total cooling (heating) capacity (kW)
PI : Power input (kW)
(Comp.+indoor+outdoor fan motor).

Notes:

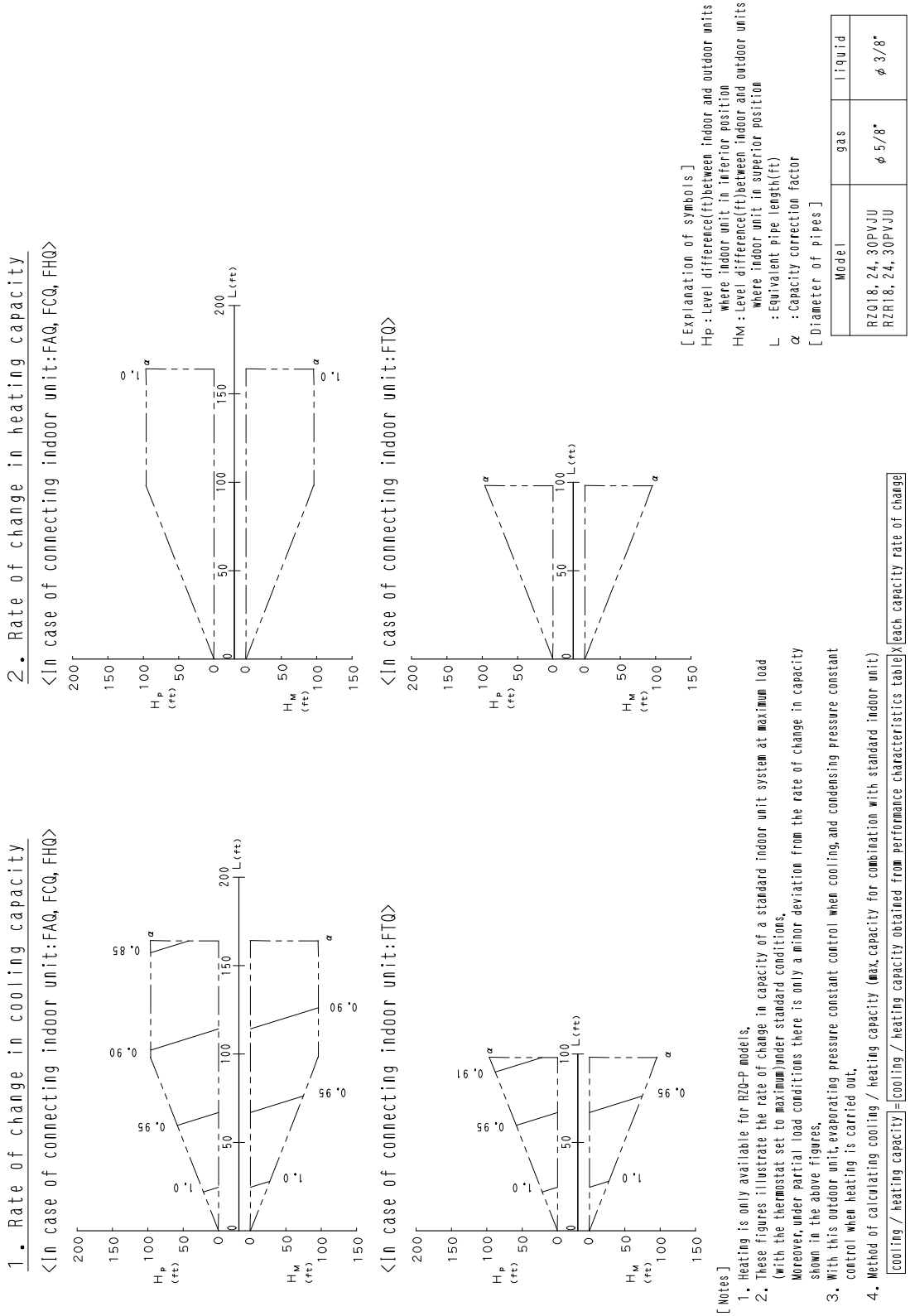
1. The above data are based on the following conditions.

Cooling	Heating	Equivalent Piping Length	Hz, Volts
Indoor : 80°FDB, 67°FWB Outdoor : 95°FDB	Indoor : 70°FDB Outdoor : 47°FDB, 43°FWB	25ft (Level Difference : 0)	60Hz, 230V

2. Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
3. ☐ shows nominal MAX capacities

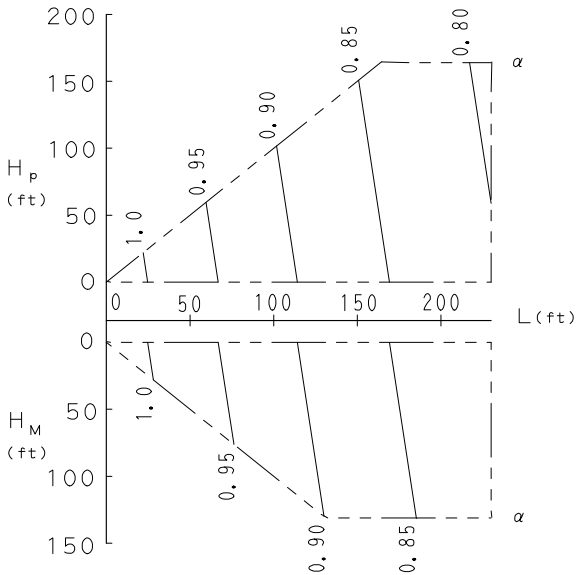
9.3 Capacity correction ratio

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU9



3D064228B

1. Rate of change in cooling capacity



[Explanation of symbols]

Hp : Level difference(ft)between indoor and outdoor units where indoor unit in inferior position

HM : Level difference(ft)between indoor and outdoor units where indoor unit in superior position

L : Equivalent pipe length(ft)

α : Capacity correction factor

[Diameter of pipes]

Model	gas	liquid
RZR36, 42PVJU	φ 5/8"	φ 3/8"

[Notes]

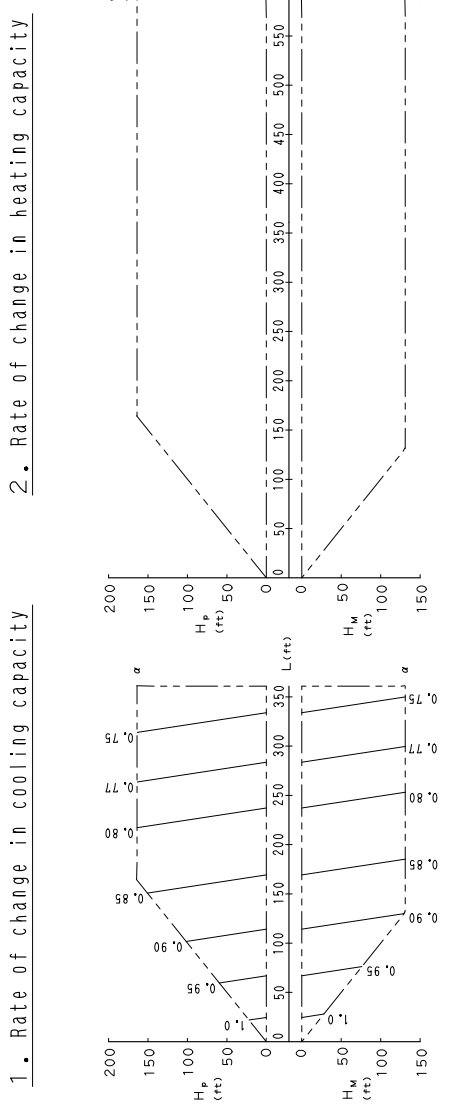
1. The figure illustrates the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard condition.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figure.
2. With this outdoor unit, evaporating pressure constant control when cooling is carried out.
3. Method of calculating cooling capacity (max. capacity for combination with standard indoor unit)

   cooling capacity = cooling capacity obtained from performance characteristics table X each capacity rate of change

3D071685

RZQ36PVJU9 / RZQ42PVJU9

C: 3D047383B



[Explanation of symbols]

Hp : Level difference(ft)between indoor and outdoor units where indoor unit in inferior position

HM : Level difference(ft)between indoor and outdoor units where indoor unit in superior position

L : Equivalent pipe length(ft)

α : Capacity correction factor

[Diameter of pipes]

Model	gas	liquid
RZQ36, 42PVJU9	φ 5/8"	φ 3/8"

[Notes]

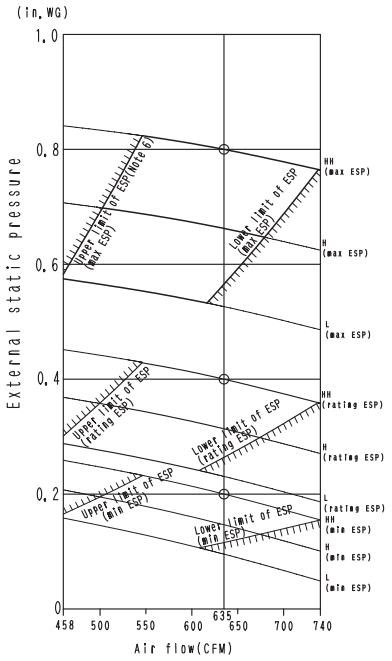
1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum)under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating cooling / heating capacity (max. capacity for combination with standard indoor unit)

   cooling / heating capacity = cooling / heating capacity obtained from performance characteristics table × each capacity rate of change

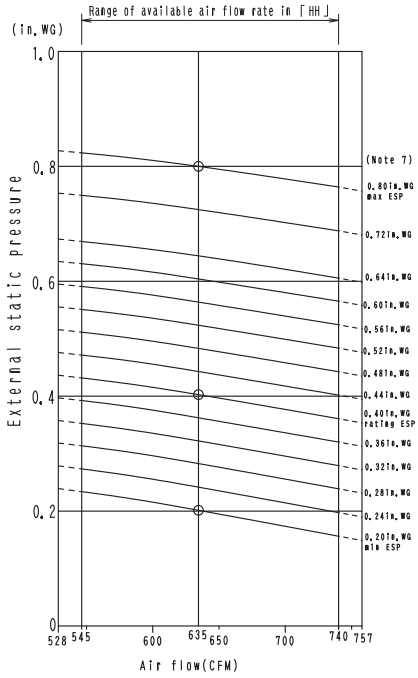
10. Fan Performances

FBQ18PVJU

Fan Characteristics (Graph 1)



Fan Characteristics (Graph 2)
(For local setting of remote controller)

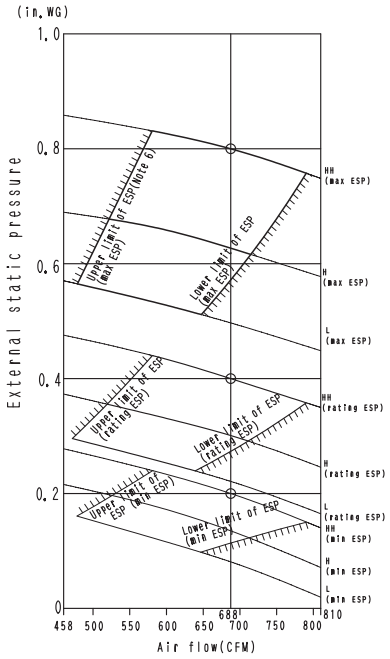


Notes:
1. The external static pressure (ESP) can be changed in 14 levels by the remote controller.
2. Fan Characteristics (Graph 1) show a fan characteristic at the time of ***maximum ESP***, ***rating ESP***, or ***minimum ESP***.
3. Fan Characteristics (Graph 2) for field setting of remote controller show a Fan Characteristic of each ESP field setting's possible airflow.
4. Choose ESP setting by using Fan Characteristics (Graph 1) and Fan Characteristics (Graph 2) by the resistance of a connected duct.
5. The remote controller can be used to change **HH**, **H**, and **L**.
6. ESP: external static pressure.
7. The value in Graph 2 shows ESP in rating airflow.
8. Set the external static pressure of the suction duct at 0.6" Wg or less.

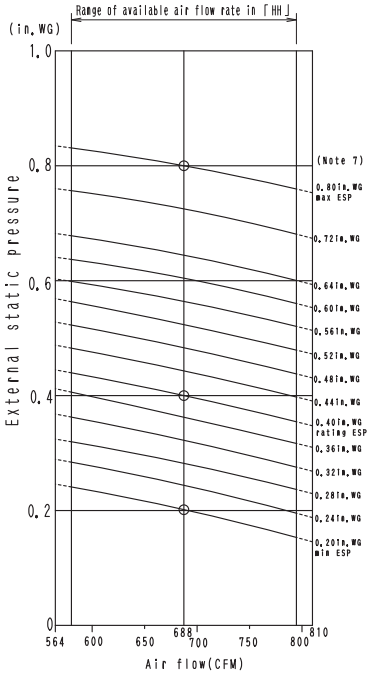
3D066120C

FBQ24PVJU

Fan Characteristics (Graph 1)



Fan Characteristics (Graph 2)
(For local setting of remote controller)

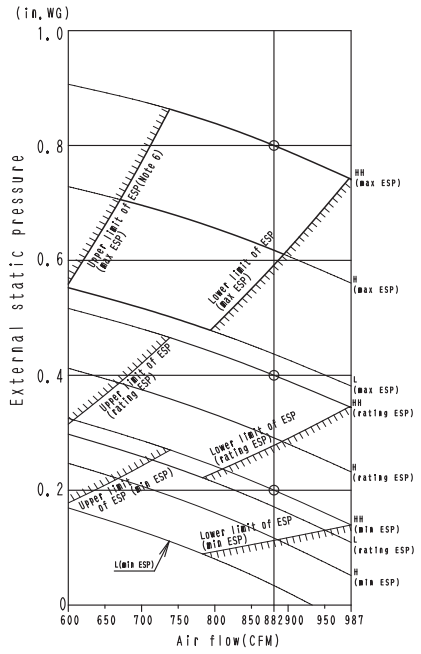


Notes:
1. The external static pressure (ESP) can be changed in 14 levels by the remote controller.
2. Fan Characteristics (Graph 1) show a fan characteristic at the time of ***maximum ESP***, ***rating ESP***, or ***minimum ESP***.
3. Fan Characteristics (Graph 2) for field setting of remote controller show a Fan Characteristic of each ESP field setting's possible airflow.
4. Choose ESP setting by using Fan Characteristics (Graph 1) and Fan Characteristics (Graph 2) by the resistance of a connected duct.
5. The remote controller can be used to change **HH**, **H**, and **L**.
6. ESP: external static pressure.
7. The value in Graph 2 shows ESP in rating airflow.
8. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066121C

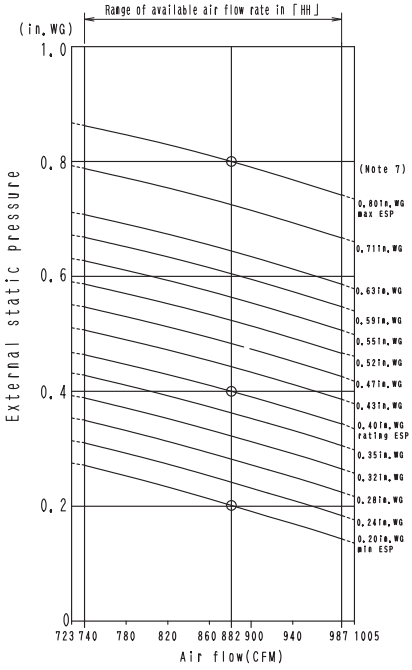
FBQ30PVJU

Fan Characteristics (Graph 1)



Fan Characteristics (Graph 2)

(For local setting of remote controller)

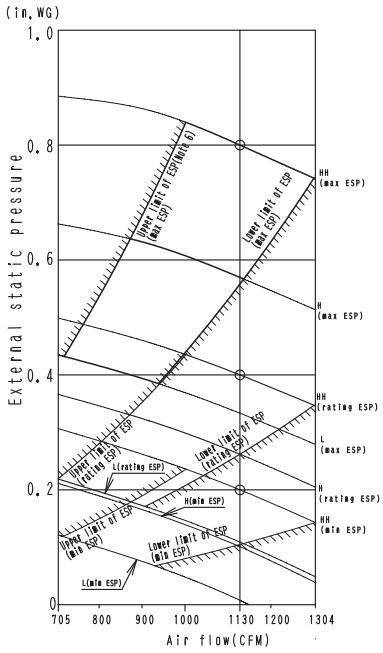


Notes:
1. The external static pressure (ESP) can be changed in 14 levels by the remote controller.
2. Fan Characteristics (Graph 1) show a fan characteristic at the time of ***maximum ESP***, ***rating ESP***, or ***minimum ESP***.
3. Fan Characteristics (Graph 2) for field setting of remote controller show a Fan Characteristic of each ESP field setting's possible airflow.
4. Choose ESP setting by using Fan Characteristics (Graph 1) and Fan Characteristics (Graph 2) by the resistance of a connected duct.
5. The remote controller can be used to change **HH**, **H**, and **L**.
6. ESP: external static pressure.
7. The value in Graph 2 shows ESP in rating airflow.
8. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066122C

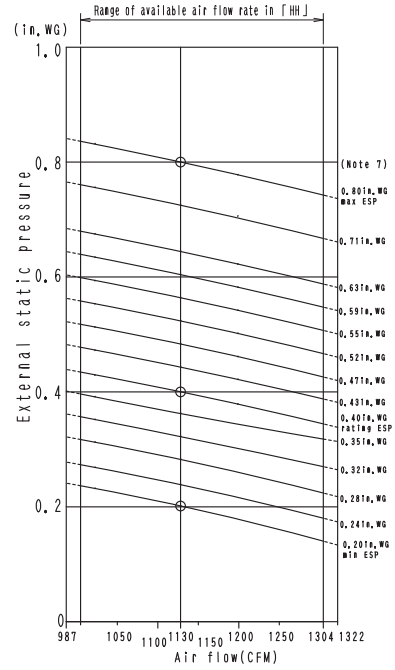
FBQ36PVJU

Fan Characteristics (Graph 1)



Fan Characteristics (Graph 2)

(For local setting of remote controller)

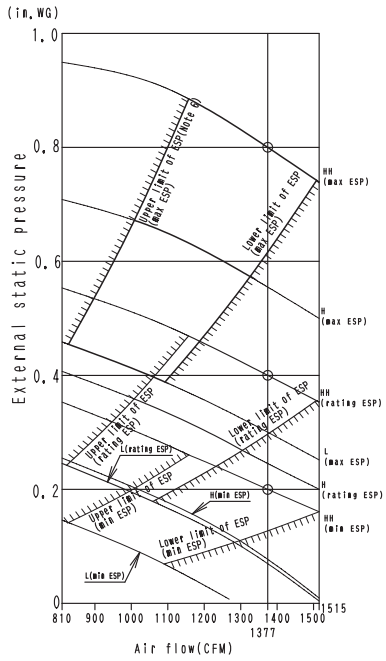


Notes:
1. The external static pressure (ESP) can be changed in 14 levels by the remote controller.
2. Fan Characteristics (Graph 1) show a fan characteristic at the time of ***maximum ESP***, ***rating ESP***, or ***minimum ESP***.
3. Fan Characteristics (Graph 2) for field setting of remote controller show a Fan Characteristic of each ESP field setting's possible airflow.
4. Choose ESP setting by using Fan Characteristics (Graph 1) and Fan Characteristics (Graph 2) by the resistance of a connected duct.
5. The remote controller can be used to change **HH**, **H**, and **L**.
6. ESP: external static pressure.
7. The value in Graph 2 shows ESP in rating airflow.
8. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066123C

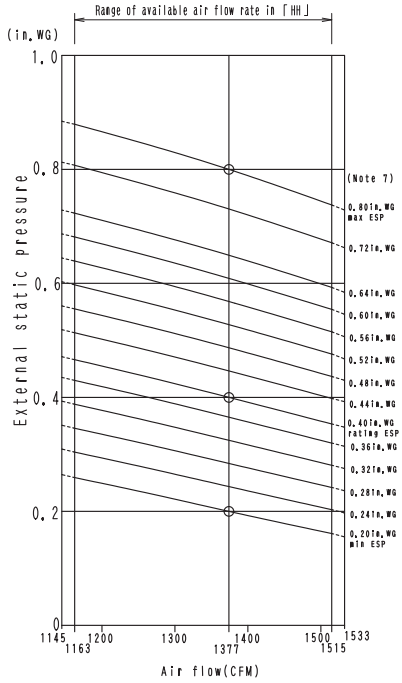
FBQ42PVJU

Fan Characteristics (Graph 1)



Fan Characteristics (Graph 2)

(For local setting of remote controller)



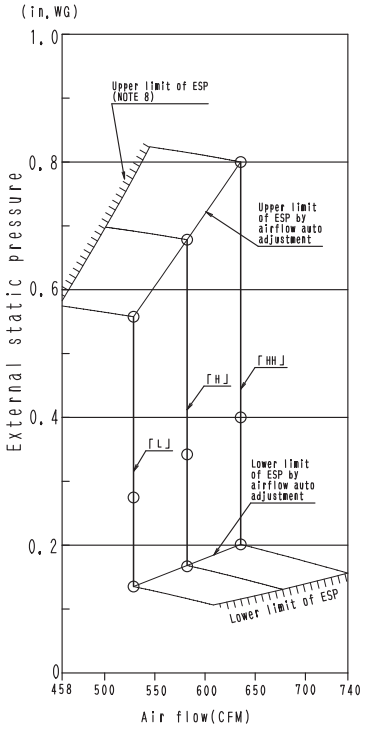
Notes:

1. The external static pressure (ESP) can be changed in 14 levels by the remote controller.
2. Fan Characteristics (Graph 1) show a fan characteristic at the time of ***maximum ESP***, ***rating ESP***, or ***minimum ESP***.
3. Fan Characteristics (Graph 2) for field setting of remote controller show a Fan Characteristic of each ESP field setting's possible airflow.
4. Choose ESP setting by using Fan Characteristics (Graph 1) and Fan Characteristics (Graph 2) by the resistance of a connected duct.
5. The remote controller can be used to change **HH**, **H**, and **L**.
6. ESP: external static pressure.
7. The value in Graph 2 shows ESP in rating airflow.
8. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066449A

11. Airflow Auto Adjustment Characteristics

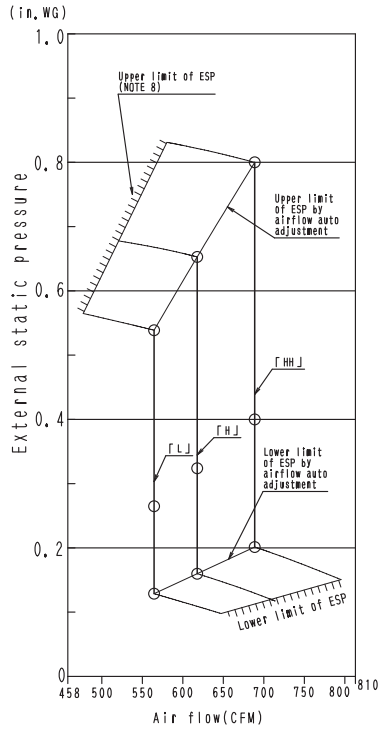
FBQ18PVJU



Notes:
1. The auto airflow adjustment function can be used to offset a reduction in airflow. This function must be performed during installation and commissioning and will adjust the airflow to within ± 10% of the rated value.
2. After completing the installation of the indoor unit ductwork, use the remote controller to set the airflow auto-adjustment.
3. For instructions on how to set the Airflow Auto-Adjustment, refer to the Installation Manual attached to the indoor unit.
4. External static pressure of 0.2 to 0.8" Wg can be adjusted by the Airflow Auto-Adjustment function if airflow is **HH.**
5. If the Auto-Adjustment function is not utilized, the airflow rate will be in accordance with the fan characteristics shown above.
6. This figure shows a fan's characteristics at the time of **HH** and **H** and **L**.
7. The remote controller can be used to change **HH**, **H**, and **L**.
8. **ESP**: external static pressure.
9. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066130B

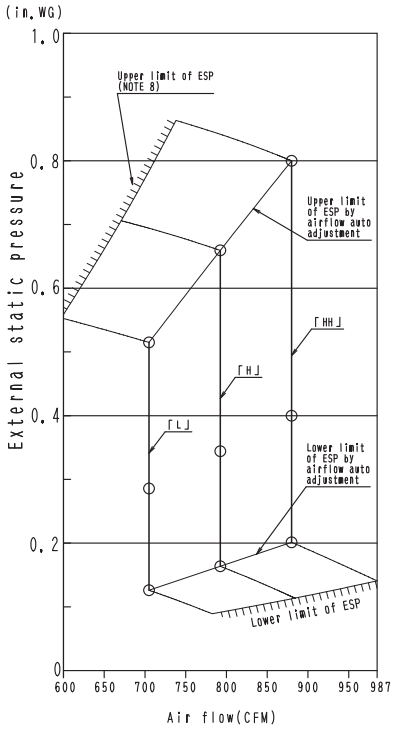
FBQ24PVJU



Notes:
1. The auto airflow adjustment function can be used to offset a reduction in airflow. This function must be performed during installation and commissioning and will adjust the airflow to within ± 10% of the rated value.
2. After completing the installation of the indoor unit ductwork, use the remote controller to set the airflow auto-adjustment.
3. For instructions on how to set the Airflow Auto-Adjustment, refer to the Installation Manual attached to the indoor unit.
4. External static pressure of 0.2 to 0.8" Wg can be adjusted by the Airflow Auto-Adjustment function if airflow is **HH.**
5. If the Auto-Adjustment function is not utilized, the airflow rate will be in accordance with the fan characteristics shown above.
6. This figure shows a fan's characteristics at the time of **HH** and **H** and **L**.
7. The remote controller can be used to change **HH**, **H**, and **L**.
8. **ESP**: external static pressure.
9. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066131B

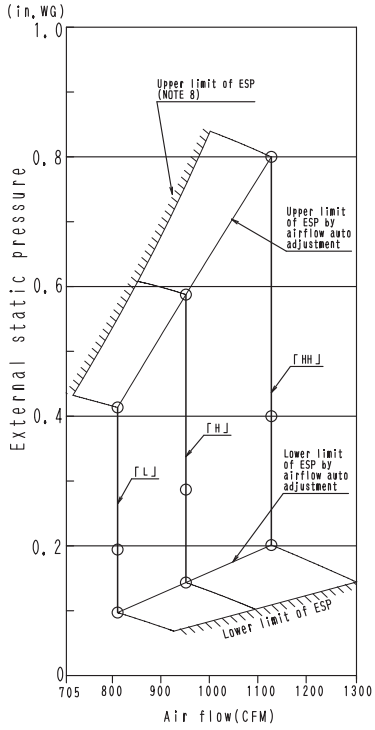
FBQ30PVJU



Notes:
1. The auto airflow adjustment function can be used to offset a reduction in airflow. This function must be performed during installation and commissioning and will adjust the airflow to within ± 10% of the rated value.
2. After completing the installation of the indoor unit ductwork, use the remote controller to set the airflow auto-adjustment.
3. For instructions on how to set the Airflow Auto-Adjustment, refer to the Installation Manual attached to the indoor unit.
4. External static pressure of 0.2 to 0.8" Wg can be adjusted by the Airflow Auto-Adjustment function if airflow is **HH.**
5. If the Auto-Adjustment function is not utilized, the airflow rate will be in accordance with the fan characteristics shown above.
6. This figure shows a fan's characteristics at the time of **HH** and **H** and **L**.
7. The remote controller can be used to change **HH**, **H**, and **L**.
8. **ESP**: external static pressure.
9. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066132B

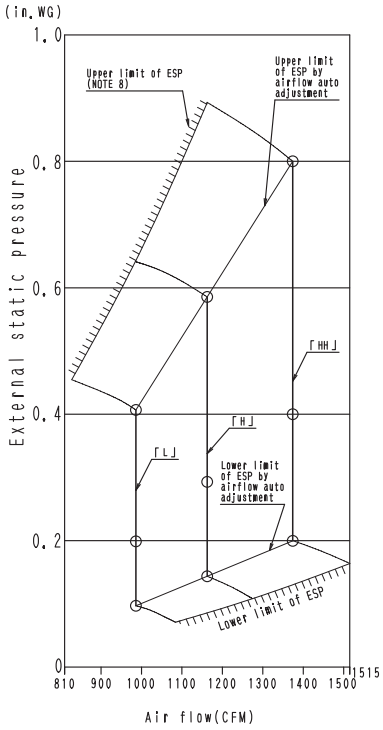
FBQ36PVJU



Notes:
1. The auto airflow adjustment function can be used to offset a reduction in airflow. This function must be performed during installation and commissioning and will adjust the airflow to within ± 10% of the rated value.
2. After completing the installation of the indoor unit ductwork, use the remote controller to set the airflow auto-adjustment.
3. For instructions on how to set the Airflow Auto-Adjustment, refer to the Installation Manual attached to the indoor unit.
4. External static pressure of 0.2 to 0.8" Wg can be adjusted by the Airflow Auto-Adjustment function if airflow is **HH.**
5. If the Auto-Adjustment function is not utilized, the airflow rate will be in accordance with the fan characteristics shown above.
6. This figure shows a fan's characteristics at the time of **HH** and **H** and **L**.
7. The remote controller can be used to change **HH**, **H**, and **L**.
8. **ESP**: external static pressure.
9. Set the external static pressure of the suction duct at 0.6" Wg or less.

3D066133

FBQ42PVJU



Notes:
1. The auto airflow adjustment function can be used to offset a reduction in airflow. This function must be performed during installation and commissioning and will adjust the airflow to within ± 10% of the rated value.
2. After completing the installation of the indoor unit ductwork, use the remote controller to set the airflow auto-adjustment.
3. For instructions on how to set the Airflow Auto-Adjustment, refer to the Installation Manual attached to the indoor unit.
4. External static pressure of 0.2 to 0.8" Wg can be adjusted by the Airflow Auto-Adjustment function if airflow is **HH.**
5. If the Auto-Adjustment function is not utilized, the airflow rate will be in accordance with the fan characteristics shown above.
6. This figure shows a fan's characteristics at the time of **HH** and **H** and **L**.
7. The remote controller can be used to change **HH**, **H**, and **L**.
8. **ESP**: external static pressure.
9. Set the external static pressure of the suction duct at 0.6" Wg or less.

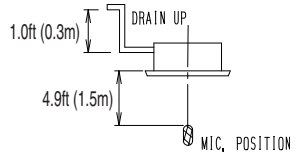
3D066450A

12. Sound Levels (Reference)

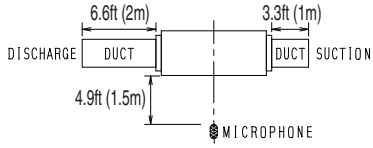
12.1 Indoor unit

12.1.1 Overall

Location of microphone
FCQ18PAVJU / FCQ24PAVJU
FCQ30PAVJU / FCQ36PAVJU
FCQ42PAVJU



Location of microphone
FBQ18PVJU / FBQ24PVJU
FBQ30PVJU / FBQ36PVJU
FBQ42PVJU



dB(A)

Model	208/230V, 60Hz		
	HH	H	L
FCQ18PAVJU	32	30	27
FCQ24PAVJU	36	32	28
FCQ30PAVJU	38	35	31
FCQ36PAVJU	44	38	32
FCQ42PAVJU	45	40	34
FBQ18PVJU	41	39	37
FBQ24PVJU	42	40	38
FBQ30PVJU	43	41	39
FBQ36PVJU	43	41	39
FBQ42PVJU	44	42	40

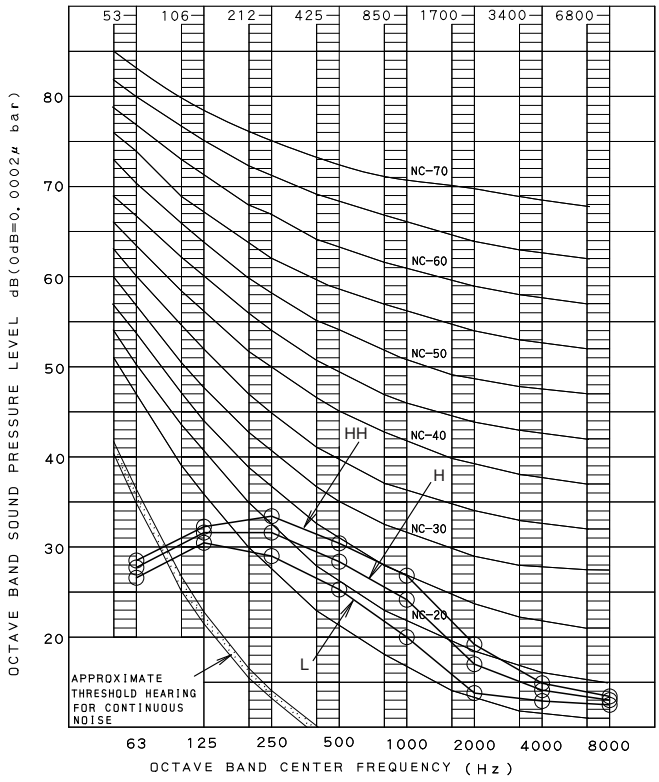
Notes:

1. The operation conditions are assumed to be standard (JIS conditions). Power source 208/230V, 60Hz.
2. The operation values were obtained in an anechoic chamber (conversion values).
3. Sound levels will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipment is installed.

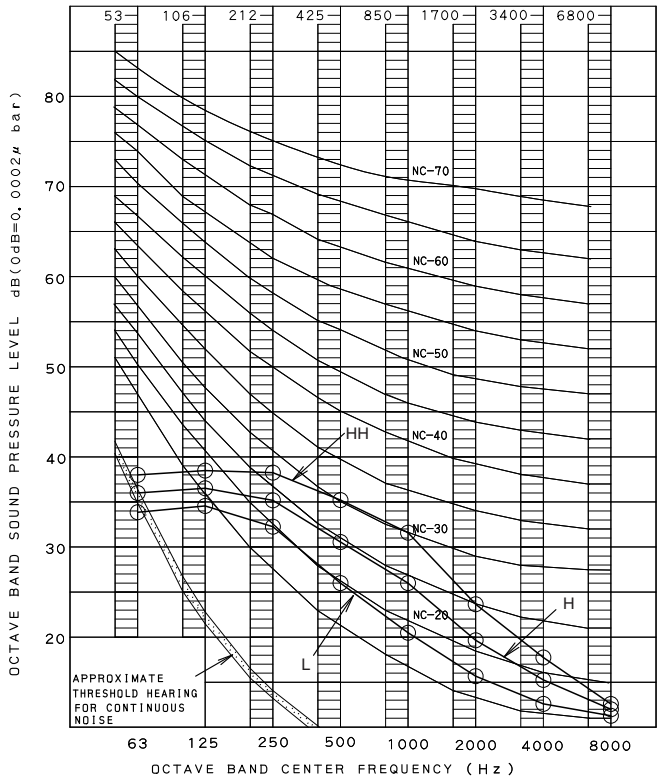
12.1.2 Octave Band Level

○——○ 208/230V, 60Hz

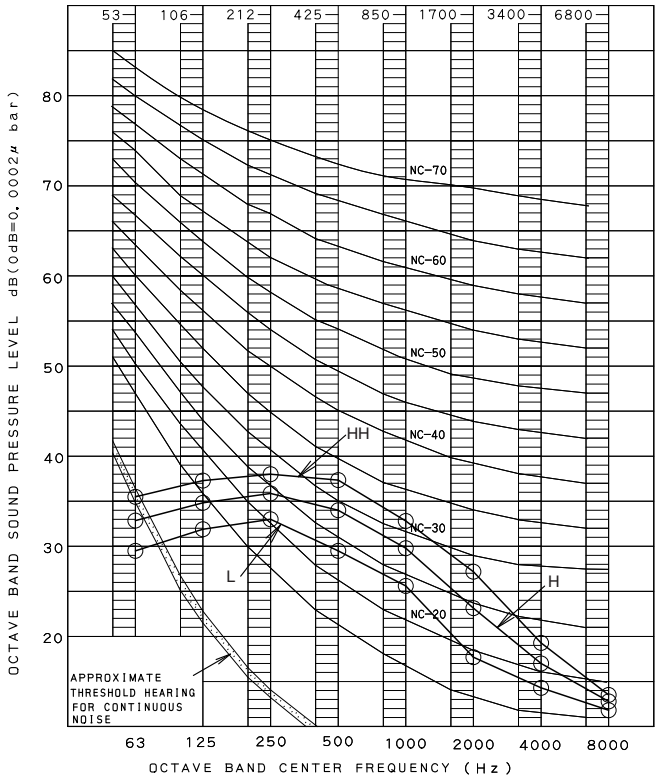
FCQ18PAVJU



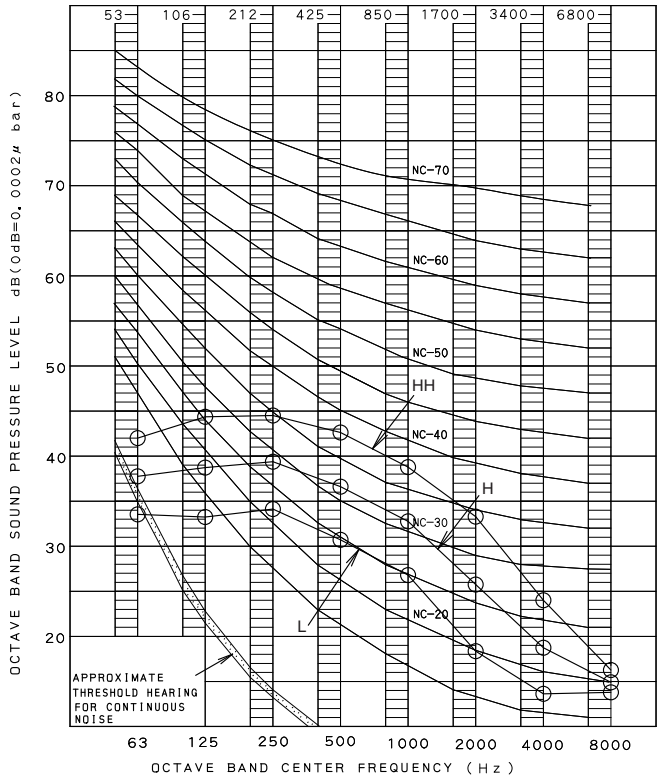
FCQ24PAVJU



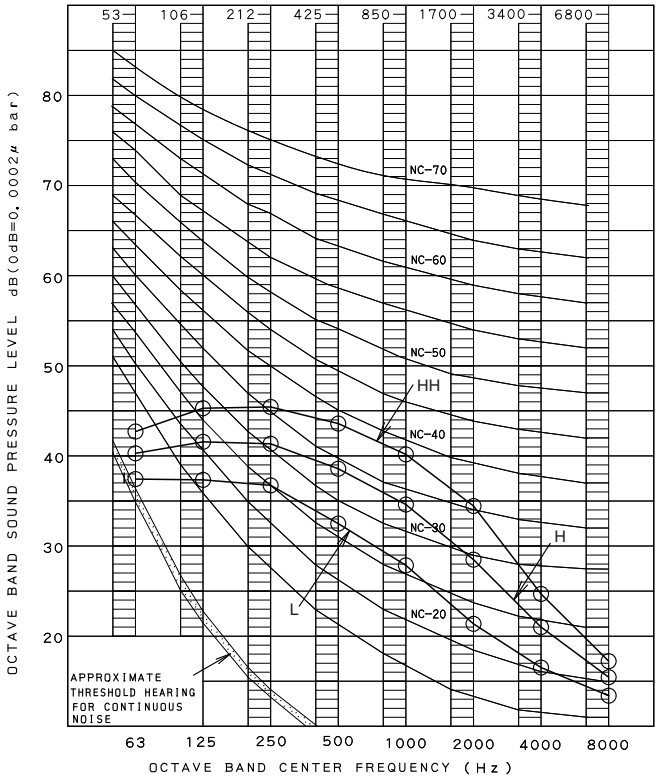
FCQ30PAVJU



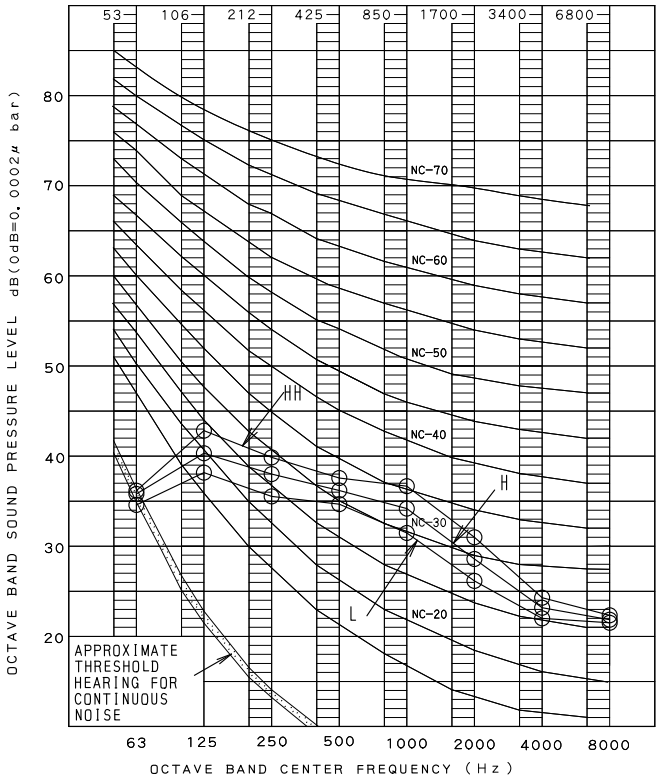
FCQ36PAVJU



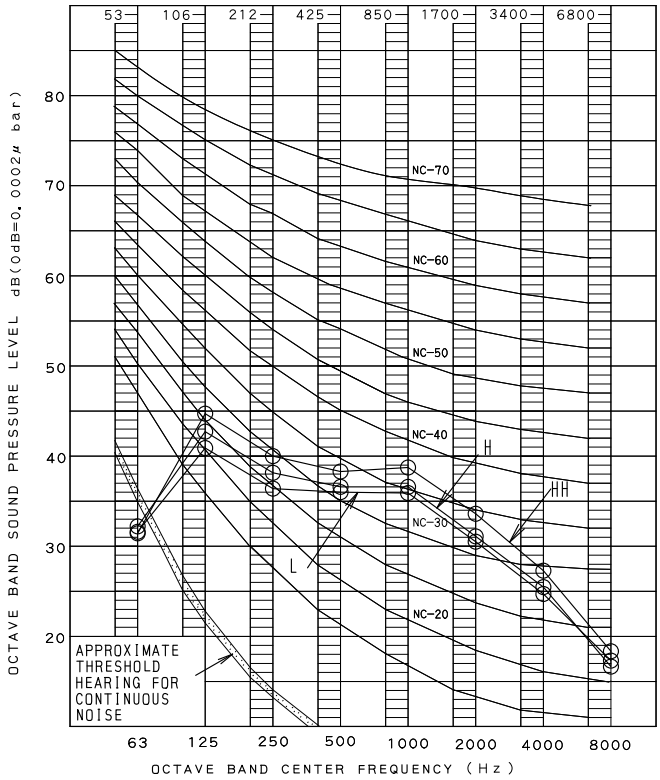
FCQ42PAVJU



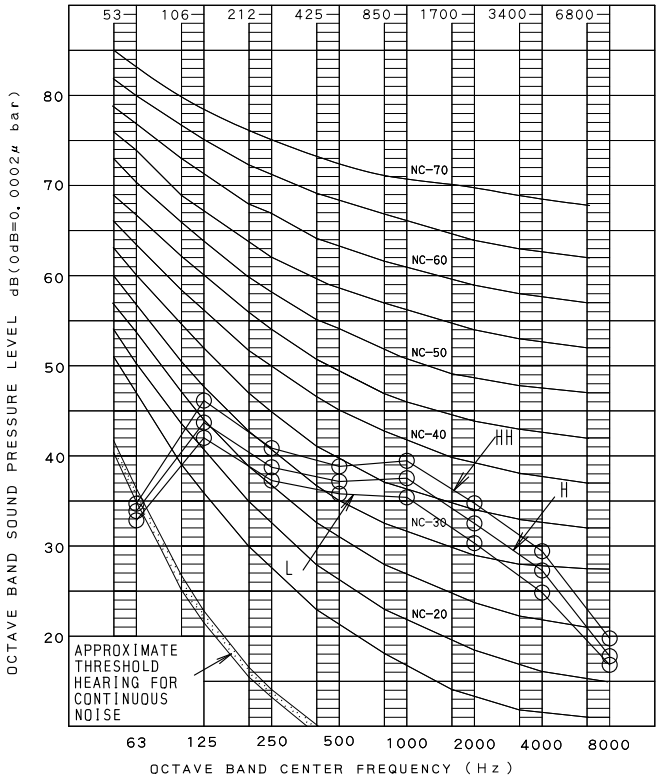
FBQ18PVJU



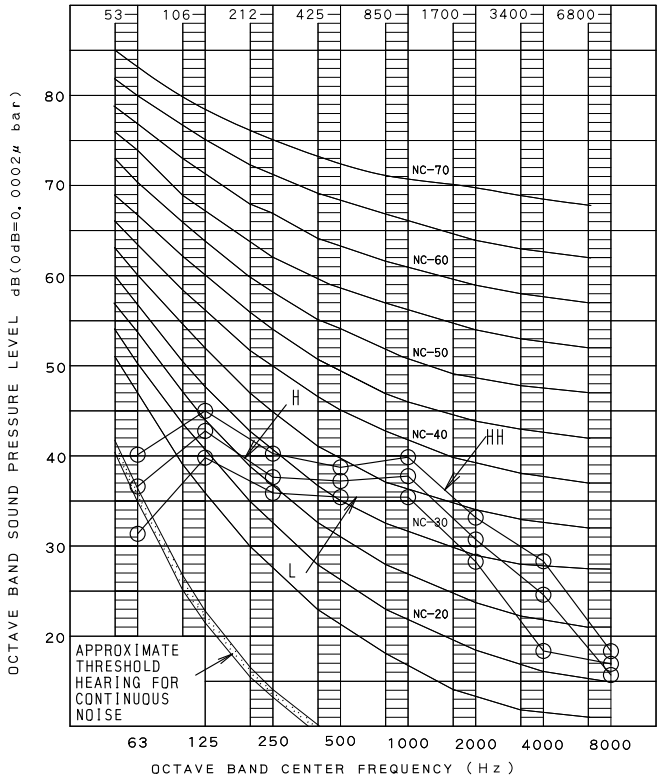
FBQ24PVJU



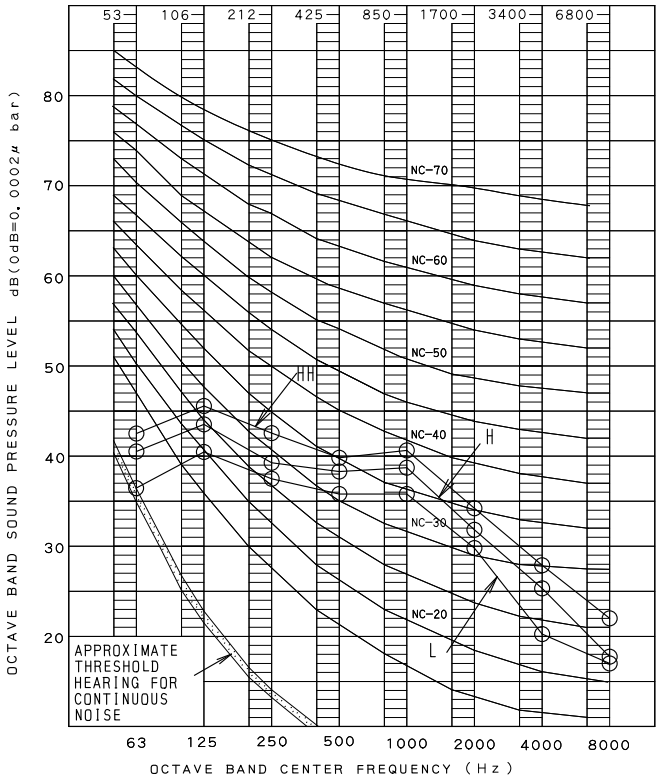
FBQ30PVJU



FBQ36PVJU



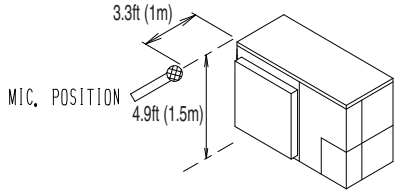
FBQ42PVJU


53
106
212
425
850
1700
3400
6800
80
70
60
50
40
30
20
NC-70
NC-60
NC-50
NC-40
NC-30
NC-20
HH
H
L
APPROXIMATE THRESHOLD HEARING FOR CONTINUOUS NOISE
63
125
250
500
1000
2000
4000
8000
OCTAVE BAND CENTER FREQUENCY (Hz)
OCTAVE BAND SOUND PRESSURE LEVEL dB(0dB=0.00024 bar)

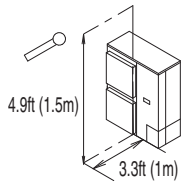
12.2 Outdoor unit

12.2.1 Overall

Location of microphone
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU
RZR18PVJU / RZR24PVJU / RZR30PVJU



Location of microphone
RZQ36PVJU9 / RZQ42PVJU9
RZR36PVJU / RZR42PVJU



dB(A)

Model (Heat pump)	208/230V, 60Hz	Model (Cooling only)	208/230V, 60Hz
RZQ18PVJU9	49	RZR18PVJU	49
RZQ24PVJU9	49	RZR24PVJU	49
RZQ30PVJU	49	RZR30PVJU	49
RZQ36PVJU9	58	RZR36PVJU	58
RZQ42PVJU9	58	RZR42PVJU	58

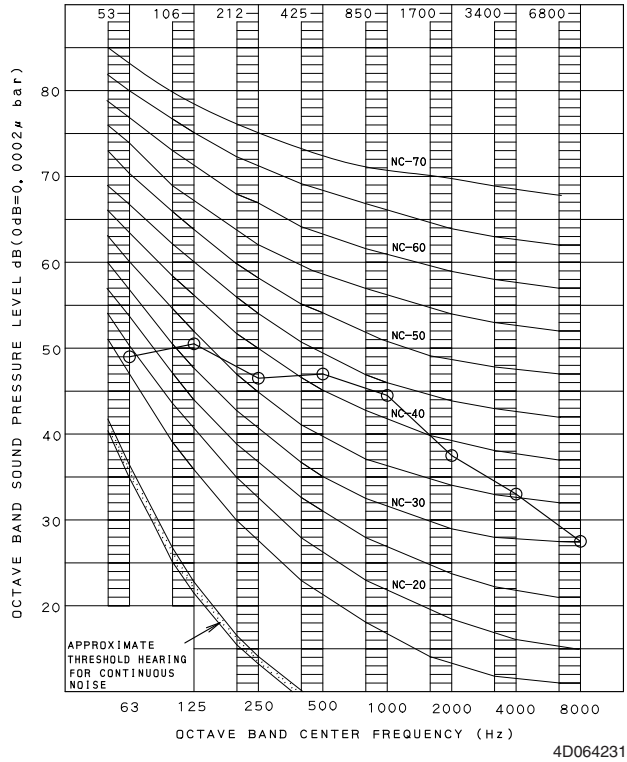
Notes:

1. The operation conditions are assumed to be standard (JIS conditions). Power source 208/230V, 60Hz.
2. The operation values were obtained in an anechoic chamber (conversion values).
3. Sound levels will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipment is installed.

12.2.2 Octave Band Level

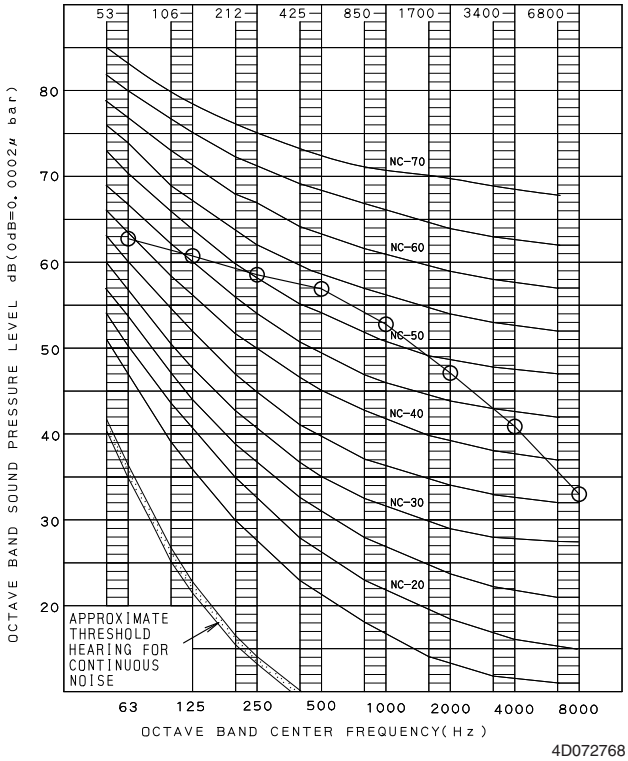
○——○ 208/230V, 60Hz

RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU
RZR18PVJU / RZR24PVJU / RZR30PVJU



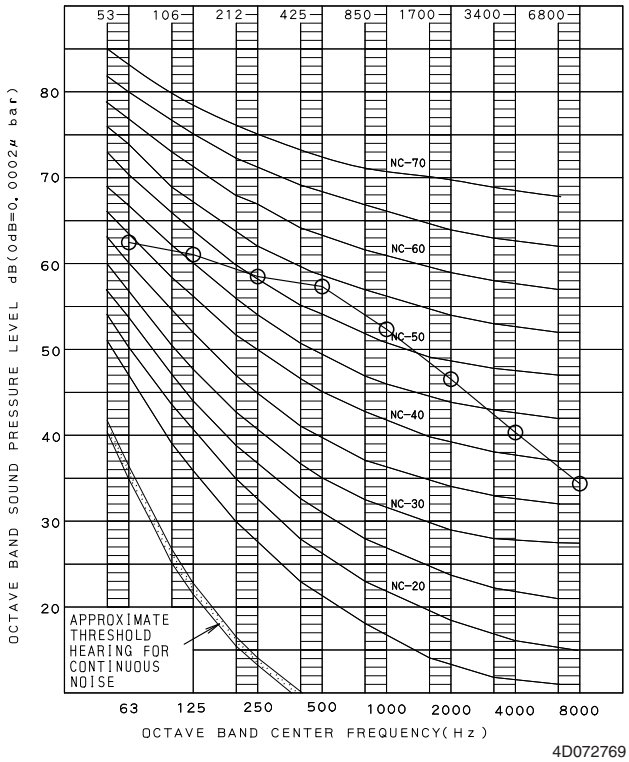
4D064231

RZQ36PVJU9
RZR36PVJU



4D072768

RZQ42PVJU9
RZR42PVJU

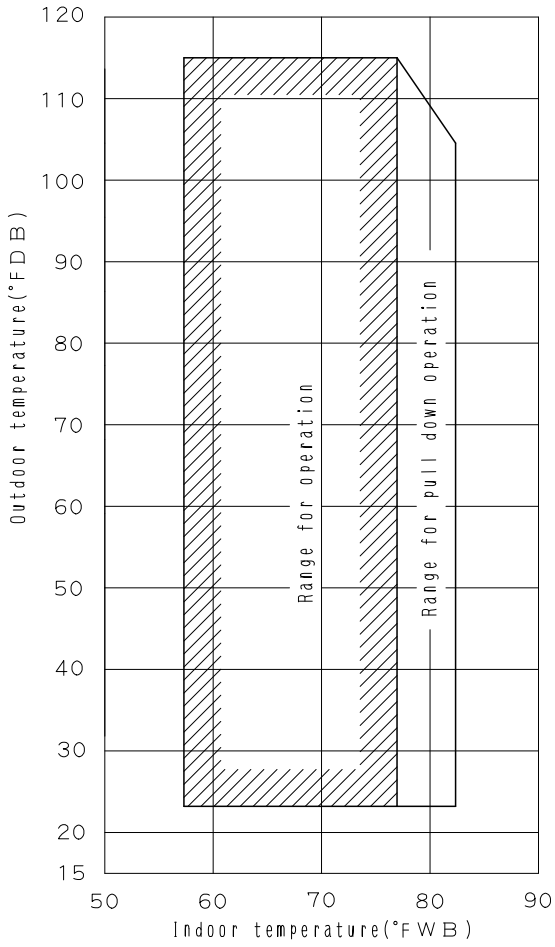


4D072769

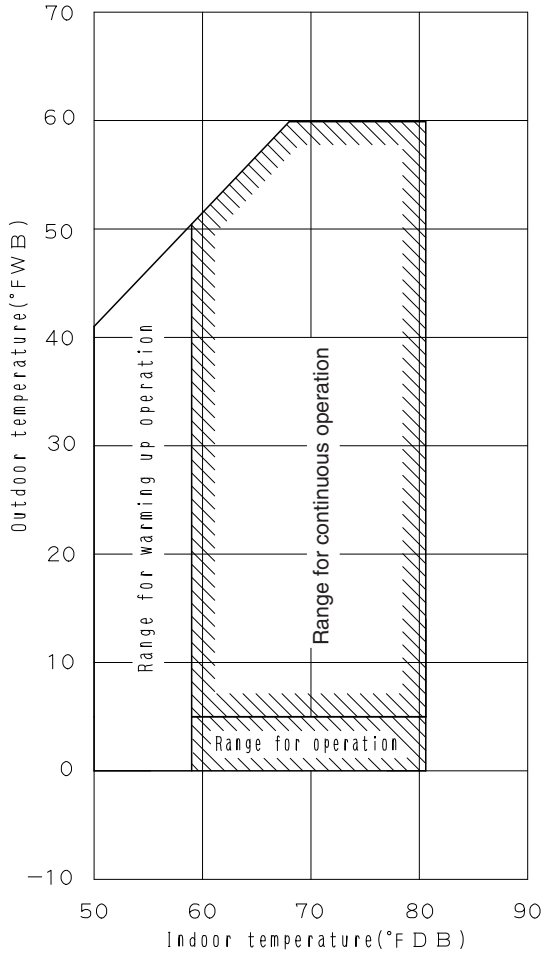
13. Operation limits

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

Cooling



Heating (RZQ-P only)

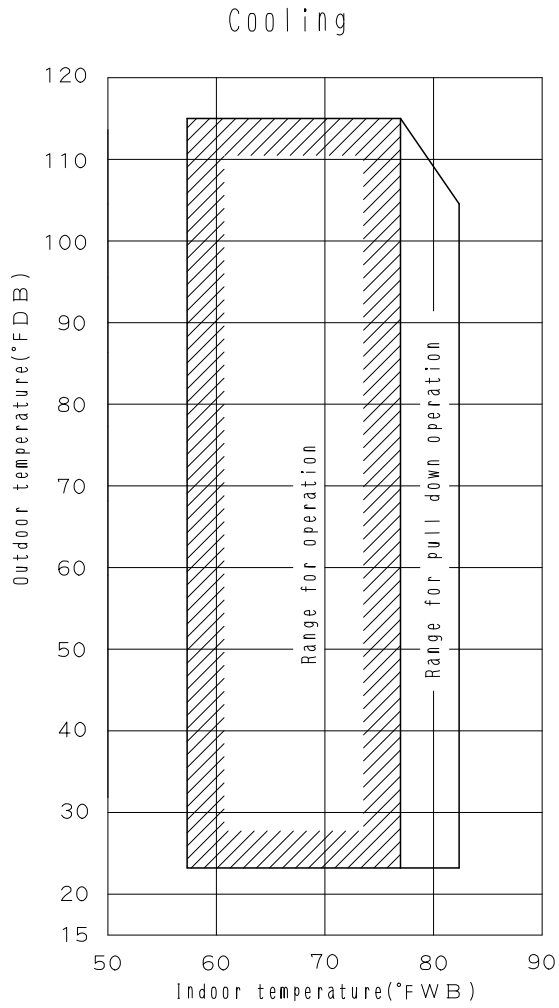


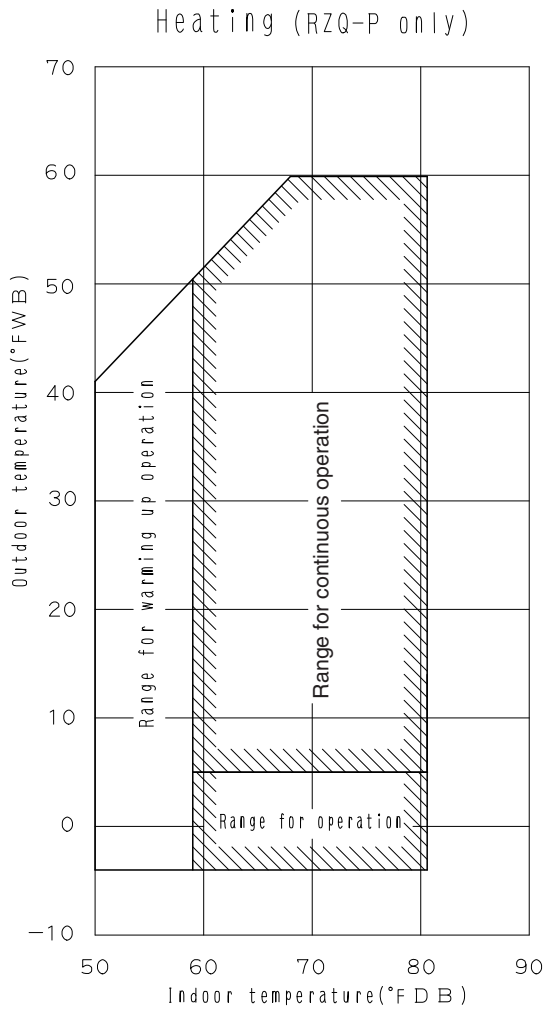
NOTES:

1. These figures assume the following operation conditions,
Indoor and outdoor units:
Equivalent pipe length : 25 ft.
Level difference : 0 ft.

2. Operation can be extended to 0°F in cooling with use of the optional wind baffle.

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9





NOTES:

1. These figures assume the following operation conditions,
Indoor and outdoor units:
Equivalent pipe length : 25 ft.
Level difference : 0 ft.

2. Operation can be extended to 0°F in cooling with use of the optional wind baffle.

14. Accessories

14.1 Indoor unit

14.1.1 FCQ

Optional accessories (For unit)

Item			Model				
			FCQ18PAVJU	FCQ24PAVJU	FCQ30PAVJU	FCQ36PAVJU	FCQ42PAVJU
Decoration panel			BYCP125K-W1				
Sealing member of air discharge outlet			KDBH55K160F				
Panel spacer			KDBP55H160FA				
Filter related	Replacement long life filter		KAFP551K160				
Fresh air intake kit	Chamber type	Without T shape pipe	KDDP55B160				
		With T shape pipe	KDDP55B160K				

C: 3D074051

Optional accessories (For controls)

Item		Model				
		FCQ18PAVJU	FCQ24PAVJU	FCQ30PAVJU	FCQ36PAVJU	FCQ42PAVJU
Remote controller	Wired	BRC1E71				
	Wireless	–				
Simplified remote controller		BRC2A71				
Remote sensor		KRCS01-4B				
Installation box for adaptor PCB		KRP1H98				
Central remote controller		DCS302C71				
Unified ON/OFF controller		DCS301C71				
Schedule timer		DST301BA61				
intelligent Touch Controller		DCS601C71				
Wiring adapter PCB		*KRP1C75				
Group control adaptor PCB		*KRP4A74				
Installation box for adaptor PCB		KRP1H98 (Note2, 3)				

C: 3D074051

Note:
1. Installation box (KRP1H98) is necessary for each adaptor marked *.
2. Up to two adaptors can be fixed for each installation box.
3. Only one installation box can be installed to each indoor unit.

14.1.2 FHQ

Optional accessories (For unit)

No.	Item		Model				
			FHQ18PVJU	FHQ24PVJU	FHQ30PVJU	FHQ36MVJU	FHQ42MVJU
1	Replacement long life filter	Resin net	KAF501DA160				

C: 3D049335A

Optional accessories (For controls)

No.	Item		Model				
			FHQ18PVJU	FHQ24PVJU	FHQ30PVJU	FHQ36MVJU	FHQ42MVJU
1	Remote controller	Wired	BRC1E71				
		Wireless	BRC7E83				
2	Simplified remote controller		BRC2A71				
3	Remote sensor		KRCS01-1B				
4	Installation box for adaptor PCB		KRP1C93				
5	Central remote controller		DCS302C71				
5-1	Electrical box		KJB311AA				
6	Unified ON/OFF controller		DCS301C71				
6-1	Electrical box		KJB212AA				
7	Schedule timer		DST301BA61				
8	External control adaptor for outdoor unit		*DTA104A62				
9	DIII-NET expander adaptor		*DTA109A51				

C: 3D049198C

Note:
1. Installation box (No.4) is necessary for each adaptor marked *.
2. Electrical box (No.5-1/6-1) is required for (No.5/6).

14.1.3 FAQ

Optional accessories (For controls)

No.	Item		Model	
			FAQ18PVJU	FAQ24PVJU
1	Remote controller	Wired	BRC1E71	
		Wireless	BRC7E818	
2	Simplified remote controller		BRC2A71	
3	Remote sensor		KRCS01-1B	
4	Central remote controller		DCS302C71	
4-1	Electrical box		KJB311AA	
5	Unified ON/OFF controller		DCS301C71	
5-1	Electrical box		KJB212AA	
6	Schedule timer		DST301BA61	
7	External control adaptor for outdoor unit		—	
8	DIII-NET expander adaptor		—	

C: 3D049198C

Note:
1. Electrical box (No.4-1/5-1) is required for (No.4/5).

14.1.4 FBQ

Optional accessories (For controls)

No.	Item		Model				
			FBQ18PVJU	FBQ24PVJU	FBQ30PVJU	FBQ36PVJU	FBQ42PVJU
1	Remote controller	Wireless	BRC4C82 (Note 3)				
		Wired	BRC1E71				
2	Simplified remote controller		BRC2A71				
3	Remote sensor (For wireless remote controller)		KRCS01-4B				
4	Unified ON/OFF controller		DCS301C71				
4-1	Electrical box		KJB212AA				
5	Central remote controller		DCS3021C71				
5-1	Electrical box		KJB311AA				
6	Schedule timer		DST301BA61				
7	intelligent Touch Controller		DCS601C71				
8	DIII-NET expander adaptor		DTA109A51				
9	Wiring adaptor PCB		*KRP1C74				
10	External control adaptor PCB for outdoor unit		*DTA104A61				
11	Group control adaptor PCB		*KRP4A71				
12	Fixing plate		KRP4A96 (Note 4,5)				

C: 3D074109

Note:
1. Fixing plate (No.12) is necessary for each adaptor marked *.
2. Electrical box (No.4-1/5-1) is required for controller (No.4/5).
3. Only 2 speeds (HH, L) are available.
4. Up to 2 adaptor PCBs can be installed in the fixing plate.
5. Only 1 fixing plate can be installed for each indoor unit.

14.2 Outdoor unit

Optional accessories (For unit)

Item	Model									
	RZR18 PVJU	RZR24 PVJU	RZR30 PVJU	RZR36 PVJU	RZR42 PVJU	RZQ18 PVJU9	RZQ24 PVJU9	RZQ30 PVJU	RZQ36 PVJU9	RZQ42 PVJU9
Central drain plug	KKPJ5F180									
Fixture for preventing overturning	KPT-60B160									
Wire fixture for preventing overturning	K-KYZP15C									

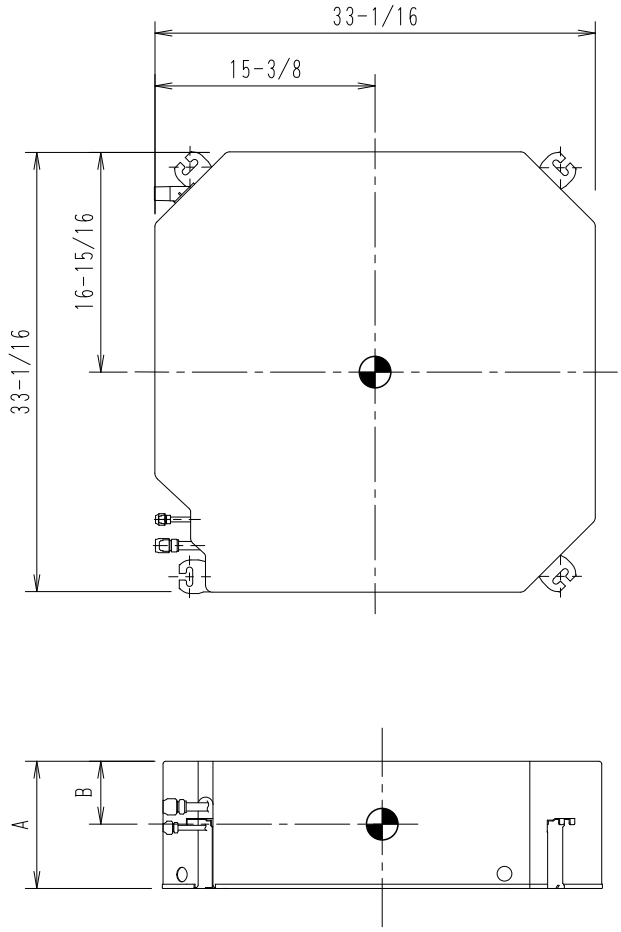
3D047388C

15. Center of gravity

15.1 Indoor unit

FCQ18PAVJU / FCQ24PAVJU / FCQ30PAVJU
FCQ36PAVJU / FCQ42PAVJU

Unit (in.)

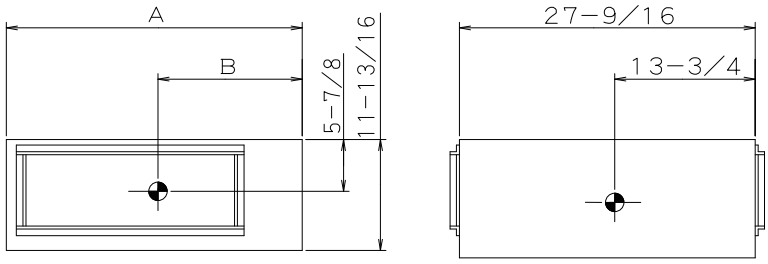


MODEL NAME	A	B
FCQ18~30PAVJU	9-11/16	3-9/16
FCQ36・42PAVJU	11-5/16	4-3/4

C: 4D070529A

FBQ18PVJU / FBQ24PVJU / FBQ30PVJU / FBQ36PVJU / FBQ42PVJU

Unit (in.)



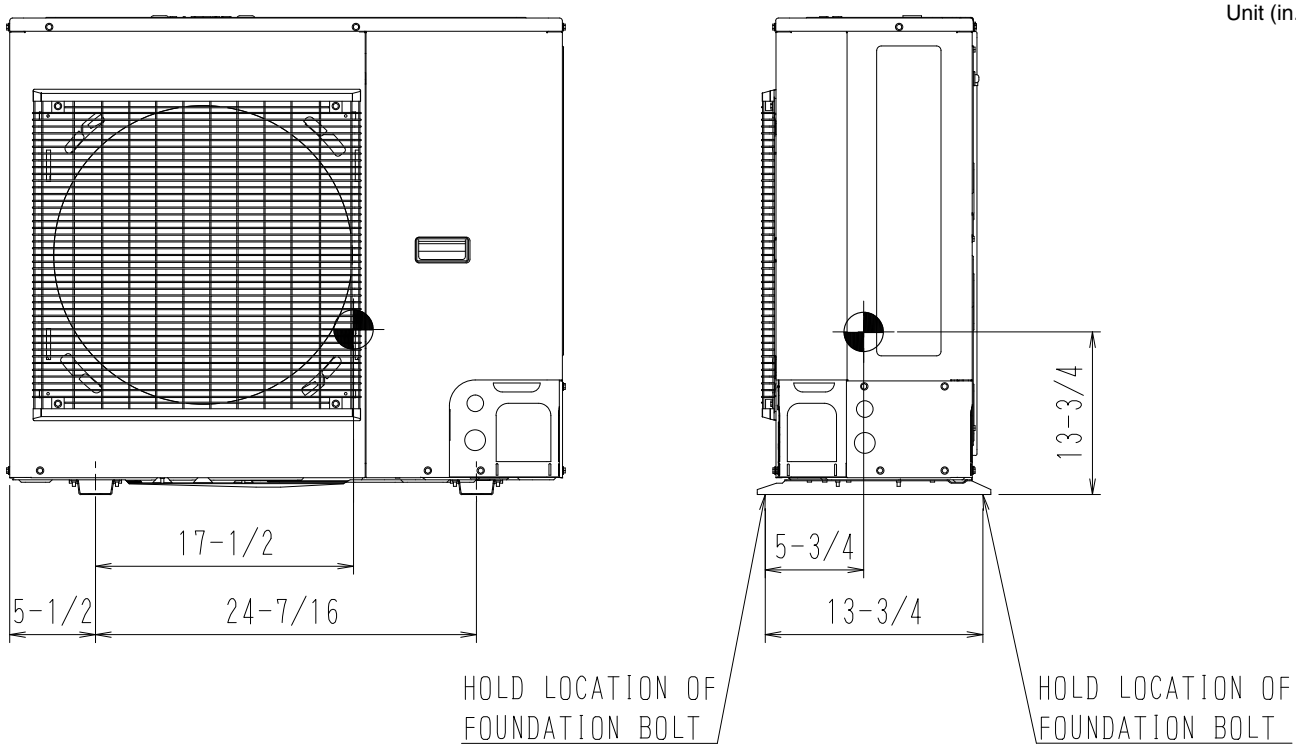
MODEL NAME	A	B
FBQ18・24・30PVJU	39-3/8	18-1/8
FBQ36・42PVJU	55-1/8	23-5/8

C: 4D065975A

15.2 Outdoor unit

RZR18PVJU / RZR24PVJU / RZR30PVJU
RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

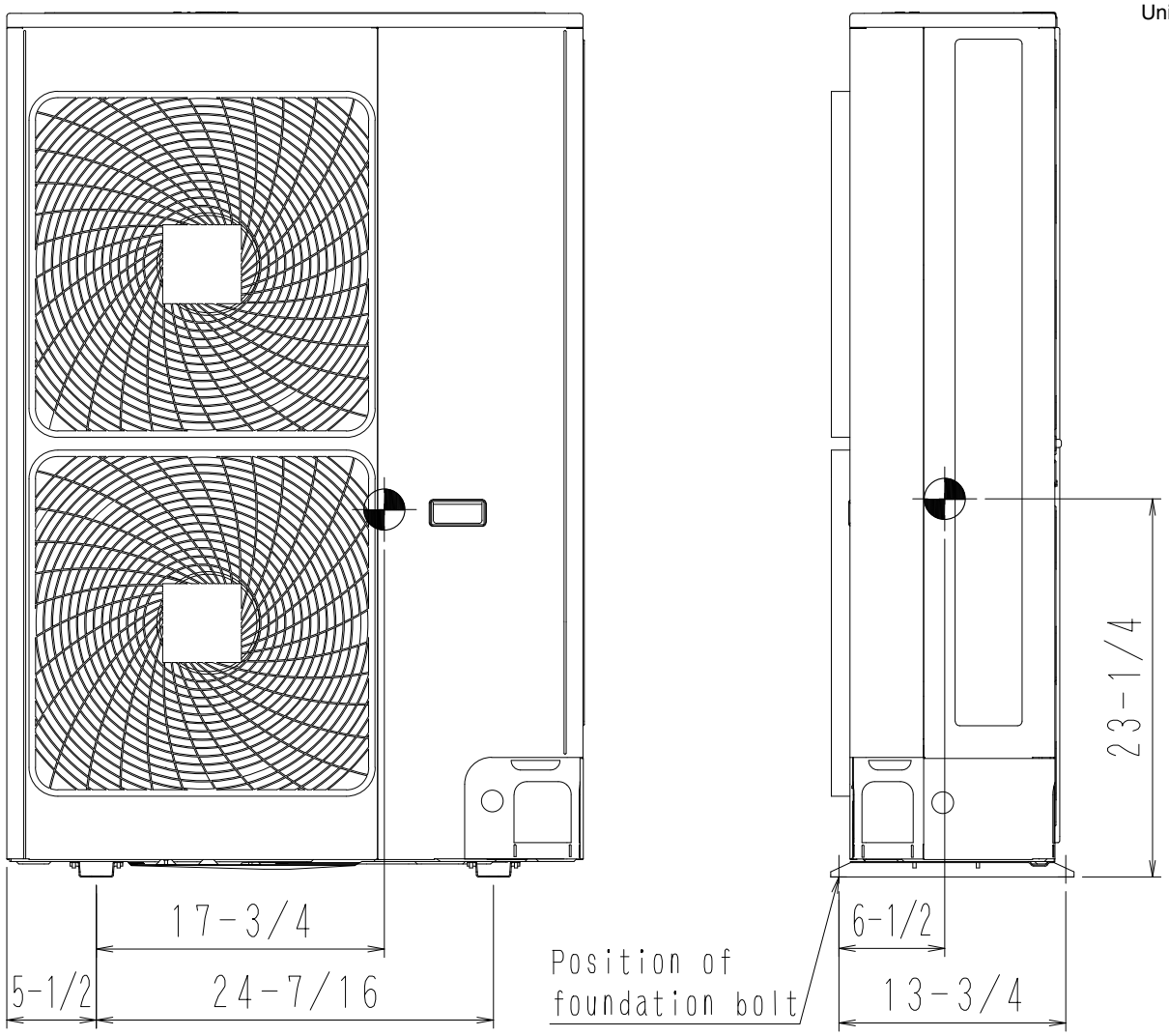
Unit (in.)



4D064214A

RZR36PVJU / RZR42PVJU
RZQ36PVJU9 / RZQ42PVJU9

Unit (in.)



4D065352A

16. Installation of indoor unit

16.1 FCQ18PAVJU / FCQ24PAVJU / FCQ30PAVJU / FCQ36PAVJU / FCQ42PAVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Read these “SAFETY CONSIDERATIONS for Installation” carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation. Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.
Always use a licensed installer or contractor to install this product. Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.
Meanings of DANGER, WARNING, CAUTION, and NOTE Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** ..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.
- Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.
- If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.
- After completing the installation work, check that the refrigerant gas does not leak throughout the system.
- Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.

3P161684-6K

- Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.

⚠ WARNING

- Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.
- When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.
- Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire, or the unit falling.
- Install the air conditioner on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.
- Take into account strong winds, typhoons, or earthquakes when installing. Improper installation 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, state, and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.
- When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire, or the terminals overheating.
- Before touching electrical parts, turn off the unit.
- Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.
- Securely fasten the outdoor unit terminal cover (panel). If the terminal cover/panel is not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.
- When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.
- Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.

⚠ CAUTION

- Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.
- Do not allow children to play on or around the unit to prevent injury.
- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- Heat exchanger fins are sharp enough to cut.
  To avoid injury wear glove or cover the fins when working around them.
- Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.
- Insulate piping to prevent condensation.
- Be careful when transporting the product.
- Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.
- Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.

- Refrigerant R410A in the system must be kept clean, dry, and tight.
  (a) Clean and Dry -- Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.
  (b) Tight -- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping Work and follow the procedures.
- Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.
- The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.
- Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.
- Do not install the air conditioner in the following locations:
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.
- Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.

⚠ NOTE

- Install the power supply and control wires for the indoor and outdoor units at least 3.5 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 feet may not be sufficient to eliminate the noise.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.
- If the conventional refrigerant and refrigerator oil are mixed in R410A, the refrigerant may deteriorate.
- This air conditioner is an appliance that should not be accessible to the general public.
- The wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.

2. BEFORE INSTALLATION

Do not exert pressure on the resin parts when opening the unit or when moving it after opening.
Be sure to check the type of R410A refrigerant to be used before doing any work. (Using an incorrect refrigerant will prevent normal operation of the unit.)

- When opening the unit or moving it after opening, be sure to lift it by holding on to the lifting lugs without exerting any pressure on other parts, especially, drain piping, and other resin parts.
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Use a sling of soft material, where unpacking is unavoidable or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Do not dispose of any parts necessary for installation until the installation is complete.

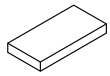
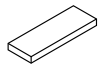
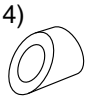
1. PRECAUTIONS

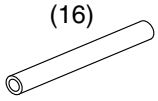
- Be sure to read this manual before installing the indoor unit.
- When selecting installation site, refer to the paper pattern.
- This unit is suitable for installation in a household, commercial and light industrial environment.
- Do not install or operate the unit in rooms mentioned below.
  - Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate.)
  - Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode.)
  - Where volatile flammable gas like thinner or gasoline is used.
  - Where machines can generate electromagnetic waves. (Control system may malfunction.)
  - Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.

2. ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain hose	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp	(5) Paper pattern for installation
Quantity	1 pc.	1 pc.	8 pcs.	6 pcs.	1 pc.
Shape					Also used as packing material 

Name	(6) Screw (M4)	(7) Washer fixing plate	Insulation for fitting	Sealing pad		
Quantity	4 pcs.	4 pcs.	1 each	1 each	1 pc.	1 pc.
Shape	For paper pattern for installation 		(8) for gas pipe  (9) for liquid pipe 	(10) Large  (11) Medium-1  (12) Medium-2 	(13) Small 	(14) 

Name	Installation guide	Insulation tube	Conduit mounting plate	
Quantity	1 pc.	1 pc.	1 each	(Other)
Shape	(15) 	(16) 	(17)  (18) 	• Installation manual • Operation manual

3. OPTIONAL ACCESSORIES

- The optional decoration panel and remote controller are required for this indoor unit. (Refer to Table 1, 2) (However, the remote controller is not required for the slave unit of a simultaneous operation system.)

Table 1

Unit model	Optional decoration panel
FCQ18 · 24 · 30 · 36 · 42PAVJU	BYCP125K-W1
	Color : Fresh white

Table 2

Remote controller	
Wired type	BRC1E71/BRC1D71

NOTE

- If you wish to use a remote controller that is not listed in “Table 2” on page 5, select a suitable remote controller after consulting catalogs and technical materials.

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

1. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor unit and outdoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the outdoor unit fully installed?	The unit may malfunction or the components burn out.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

2. Items to be checked at time of delivery

* Also review the “1. SAFETY CONSIDERATIONS”

Items to be checked	Check
Are the control box cover, air filter, suction grille attached?	
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the operation manual over to your customer?	

Points for explanation about operations

The items with ⚠ WARNING and ⚠ CAUTION marks in the operation manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the operation manual.

4. NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

〈Hold the unit by the 4 lifting lugs when opening the box and moving it, and do not exert pressure on to any other part piping (refrigerant, drain, etc.) or plastic parts.
If the temperature or humidity inside the ceiling might rise above 86°F or RH 80%, respectively, use the high-humidity kit (sold separately) or add extra insulation to the main unit body.
Use glass wool or polyethylene foam as insulation and make sure it is at least 3/8in. thick and fits inside the ceiling opening.〉

The direction this product blows can be selected. However, a separately sold shut-off material kit is needed in order to make the unit blow in two, three, or four (corner shut-off) directions.

(1) Select an installation location with the customer's approval which matches the following conditions.
- A location from which cool (warm) air will reach the whole room.
- A location with no objects blocking the air passage.
- A location where drainage can be done with no problem.
- A location strong enough to support the weight of the indoor unit.
- Locations where the wall is not significantly tilted.
- A location which leaves enough room for installation and service work.
- A location where there is no risk of flammable gas leaking.
- A location where the length of the indoor-outdoor piping is no longer than the tolerated length (see the installation manual that came with the outdoor unit for details).

[Space required for installation] (Unit: in.)

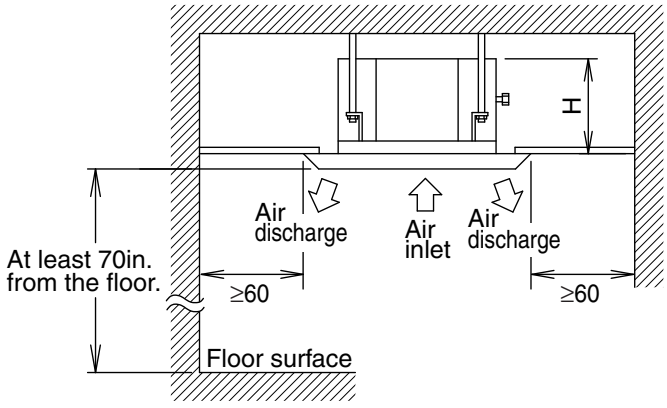


Fig. 1

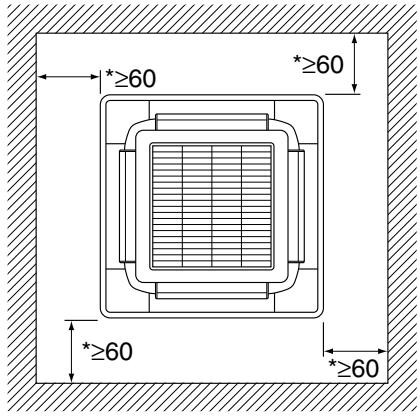


Fig. 2

Model	H (in.)
FCQ18 · 24 · 30PAVJU	10
FCQ36 · 42PAVJU	11-3/4

CAUTION

- The indoor and outdoor units and the power supply wiring and remote controller wire must be installed at least 40in. away from any televisions or radios. This is to prevent interference with picture and sound reception. (Interference may occur even at 40in. away depending on the reception quality.)

(2) Ceiling height
This product can be installed in ceilings up to 11-1/2ft. high (13-3/4ft. high for the 36 and 42).
If the ceiling height is 8-3/4ft. (10-1/2ft. for the 36 and 42) or more, field settings will have to be made with the remote controller. See “11. FIELD SETTING” for details.

(3) Air direction
The air direction shown in Fig. 3 is an example.
Select the appropriate number of directions according to the shape of the room and the location of the unit. (Field settings have to be made using the remote controller and the outlet vents have to be shut off if two, three, or four (corner shut-off) directions are selected. See the shut-off materials (sold separately) installation manual for details.)

(4) Use suspension bolts for installation. Check if the location for the installation is strong enough to support the weight of the unit, reinforce it if necessary, and install using suspension bolts. (The spacing of the installation is shown on the “paper pattern for installation (5)”.)

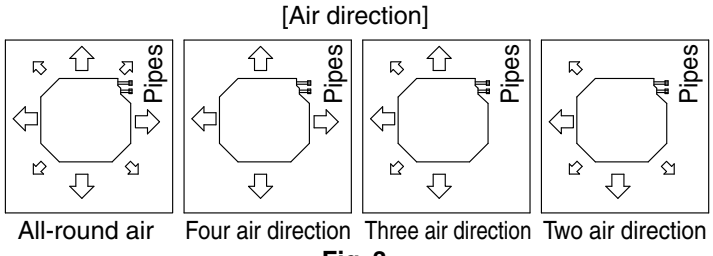


Fig. 3

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of ceiling opening to unit and suspension bolt position.

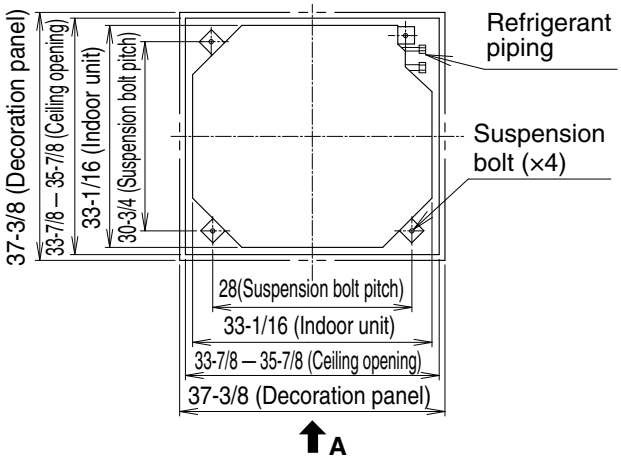


Fig. 4

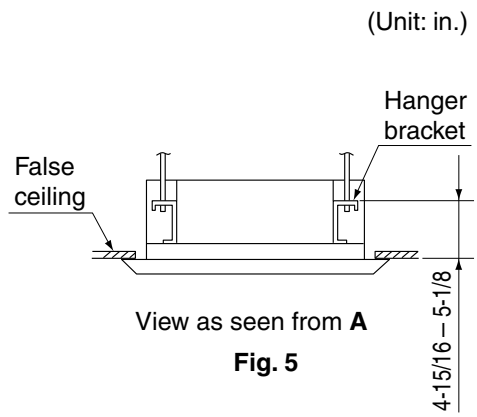


Fig. 5

■ **Installation is possible when ceiling opening dimensions is as follows**

- When installing the unit within the frame for fixing false ceiling.

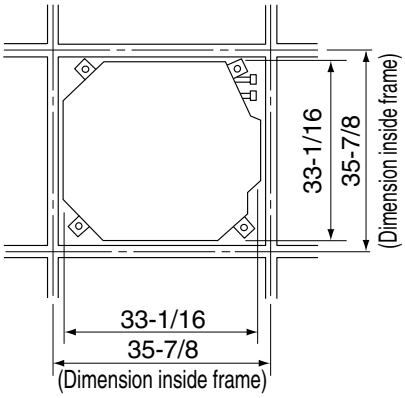


Fig. 6

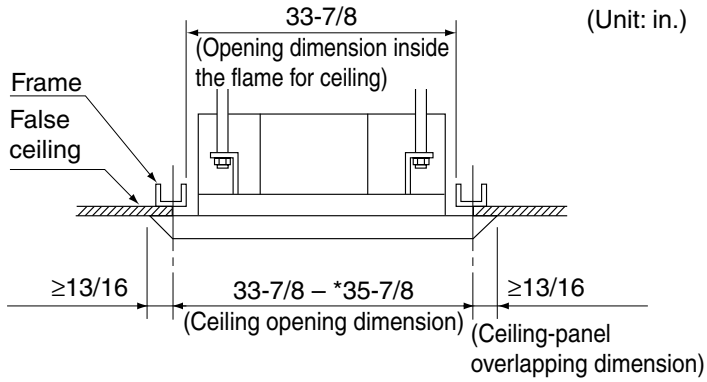


Fig. 7

NOTE

- Installation is possible with a ceiling dimension of 35-7/8in. (marked with *). However, to achieve a ceiling-panel overlapping dimension of 13/16in., the spacing between the ceiling and the unit should be 1-3/8in. or less. If the spacing between ceiling and the unit is over 1-3/8in., attach ceiling material to ■ part or recover the ceiling.

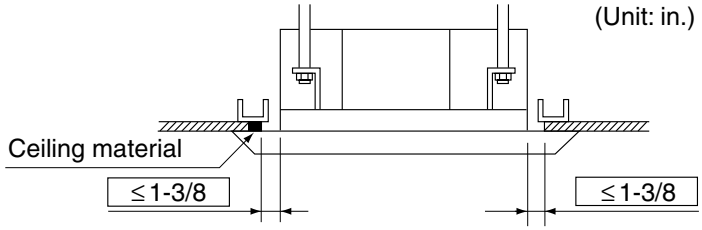


Fig. 8

(2) Make the ceiling opening needed for installation where applicable. (For existing ceilings)

- Refer to the paper pattern for installation (5) for ceiling opening dimensions.
- Create the ceiling opening required for installation. From the side of the opening to the casing outlet, implement the refrigerant and drain piping and wiring for remote controller (unnecessary for wireless type) and indoor-outdoor unit casing outlet. Refer to “6. REFRIGERANT PIPING WORK”, “7. DRAIN PIPING WORK” and “8. ELECTRIC WIRING WORK”.
- After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.

(3) Install the suspension bolts.

(Use either a M8~M10 size bolt or the equivalent) Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance (2-4in.) from the ceiling before proceeding further.

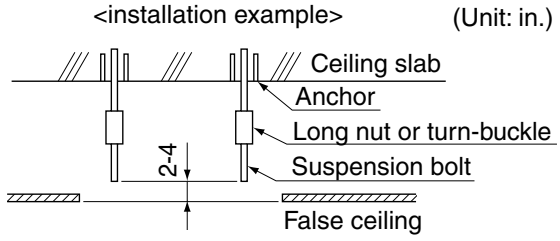


Fig. 9

NOTE

- All the above parts are field supplied.

5. INDOOR UNIT INSTALLATION

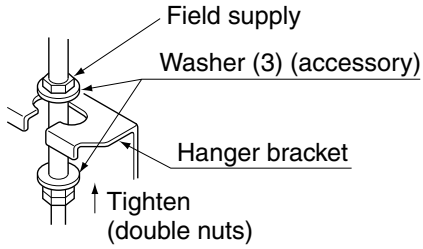
Installing optional accessories (except for the decoration panel) before installing the indoor unit is easier. However, for existing ceilings, install fresh air inlet component kit and branch duct before installing the unit.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

(1) For new ceilings

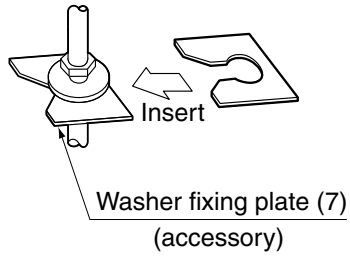
(1-1)Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer (3) from the upper and lower sides of the hanger bracket.
  The washer fixing plate (7) will prevent the washer from falling.



[Securing the hanger bracket]

Fig. 10



[Securing the washer]

Fig. 11

(1-2) Refer to the paper pattern for installation (5) for ceiling opening dimension.
Consult the builder or carpenter for details.

- The center of the ceiling opening is indicated on the paper pattern for installation.
  The center of the unit is indicated on the triangular mark to the unit bottom and on the paper pattern for installation.
- Fix the paper pattern to the unit with screws (6) (×4).
- Ceiling height is shown on the side of the paper pattern for installation (5). Adjust the height of the unit according to this indication.

Please perform one of the following, as the shape of the paper pattern for installation differs according to the model.

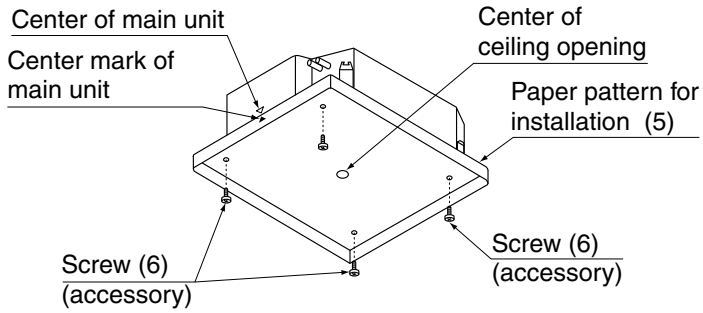


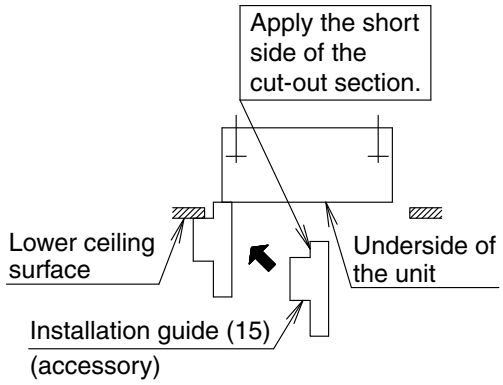
Fig. 12

[Installation of paper pattern for installation]

<Ceiling work>

(1-3) Adjust the unit to the right position for installation.
(Refer to "**4. PREPARATIONS BEFORE INSTALLATION-(1)**".)

- Using the Installation guide (15) allows you to check the positions from the underside of the unit to the lower ceiling surface.



(1-4) Check the unit is horizontally level.

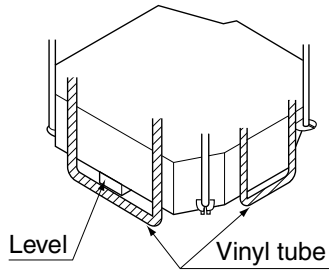
- The indoor unit is equipped with a built-in drain pump and float switch. Verify that it is level by using a level or a water-filled vinyl tube.

⚠ CAUTION

If the unit is tilted against condensate flow, the float switch may malfunction and cause water to drip.

(1-5) Remove the washer fixing plate (7) used for preventing the washer from falling and tighten the upper nut.

(1-6) Remove the paper pattern for installation (5).



[Maintaining horizontality]

Fig. 13

(2) For existing ceilings

(2-1) Install the indoor unit temporarily.
Perform step (1-1) in (1) For new ceilings.

(2-2) Adjust the height and position of the unit.
(Refer to "**4. PREPARATIONS BEFORE INSTALLATION-(1)**" and (1-3) in (1) For new ceilings.)

(2-3) Perform steps (1-4), (1-5) in (1) For new ceilings.

6. REFRIGERANT PIPING WORK

⟨For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.⟩

⟨Execute heat insulation work completely on both sides of the gas piping and the liquid piping. Otherwise, a water leakage can result sometimes.⟩

(When using a heat pump, the temperature of the gas piping can reach up to approximately 250°F, so use insulation which is sufficiently resistant.)

⟨Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 86°F or RH80%, reinforce the refrigerant insulation. (13/16in. or thicker) Condensate may form on the surface of the insulating material.⟩

⟨Be sure to check the type of R410A refrigerant to be used before doing any work. (Using an incorrect refrigerant will prevent normal operation of the unit.)⟩

⚠ CAUTION

- Use a pipe cutter and flare suitable for the type of refrigerant.
- Apply ester oil or ether oil around the flare section before connecting.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

- **Do not mix air or other gas with the specified refrigerant in the refrigeration cycle.**
- **Ventilate the room if refrigerant gas leaks during the work.**
- The outdoor unit is charged with refrigerant.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 14)**
- Refer to “Table 3” for the dimensions of flare nut spaces.

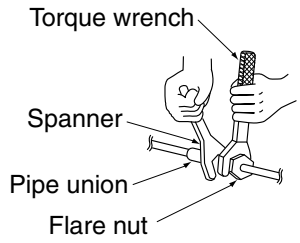


Fig. 14

- When connecting the flare nut, apply ester oil or ether oil to the flare section (inside), and spin 3-4 times before screwing in. **(Refer to Fig. 15)**
- **Keep all the screw mounting resin parts (e.g., piping presser plates) away from oil.**
  If oil adheres, the strength of the screw mounting resin parts may drop.

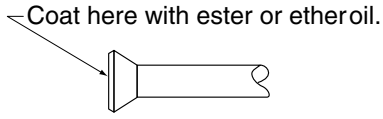


Fig. 15

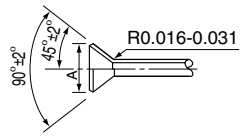
⚠ CAUTION

Over-tightening the flare nut may break it and/or cause the refrigerant to leak.

NOTE

- Use the flare nut included with the unit main body.

Table 3

Pipe size	Tightening torque	Flare dimensions A (in.)	Flare shape
ϕ 1/4	10.4 – 12.7lbf·ft.	0.342 – 0.358	
ϕ 3/8	24.1 – 29.4lbf·ft.	0.504 – 0.520	
ϕ 1/2	36.5 – 44.5lbf·ft.	0.638 – 0.654	
ϕ 5/8	45.6 – 55.6lbf·ft.	0.760 – 0.776	

- Refer to “Table 3” to determine the proper tightening torque.

— Not recommendable but in case of emergency

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Pipe size	Further tightening angle	Recommended arm length of tool
ϕ 1/4	60 to 90 degrees	Approx. 6in.
ϕ 3/8	60 to 90 degrees	Approx. 8in.
ϕ 1/2	30 to 60 degrees	Approx. 10in.
ϕ 5/8	30 to 60 degrees	Approx. 12in.

After the work is finished, make sure to check that there is no gas leak.

- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the attached heat insulating materials for fitting (8) and (9). (Fasten both ends with the clamps (4).) **(Refer to Fig. 16)**
- Wrap the sealing pad (11) only around the insulation for the joints on the gas piping side. **(Refer to Fig. 16)**

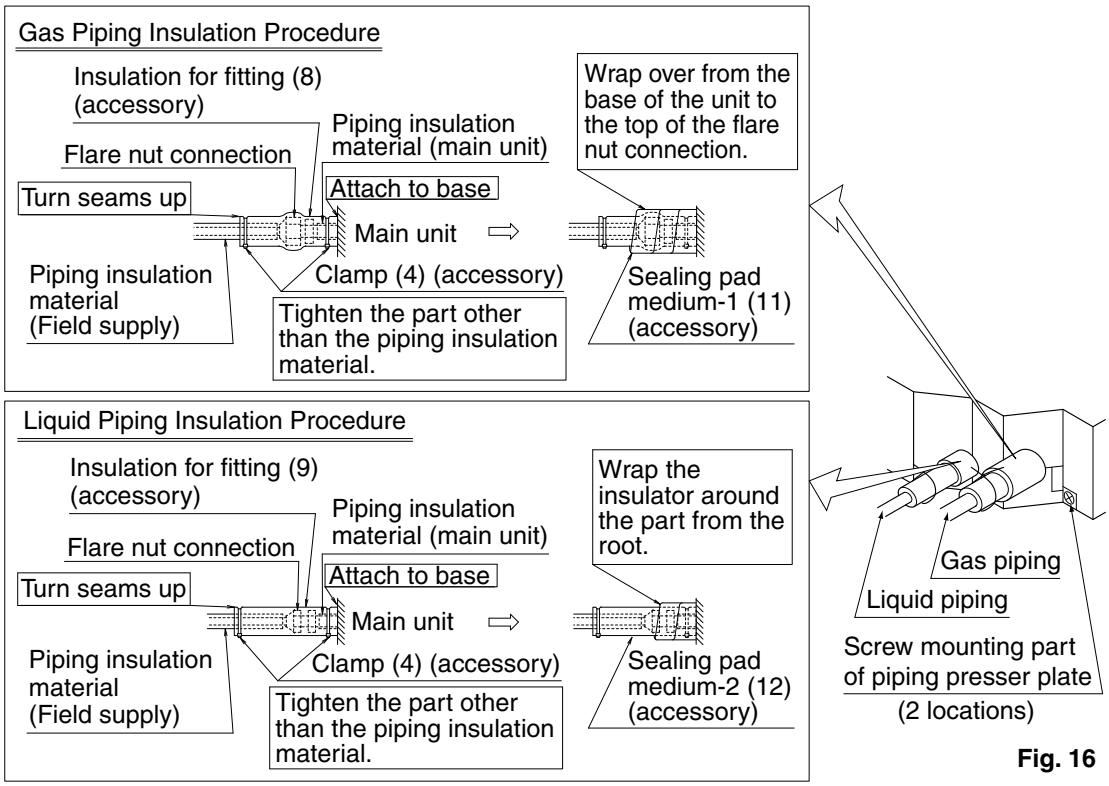


Fig. 16

— ⚠ CAUTION

For field insulation, be sure to insulate field piping all the way into the pipe connections inside the machine. Exposed piping may cause condensation or burns on contact.

⚠ CAUTION

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

"Do not use flux when brazing refrigerant piping. Therefore, use the phosphor copper brazing filler metal (BCuP-2/B-Cu93P-710/795) which does not require flux."

(Flux has extremely harmful influence on refrigerant piping systems. For instance, if the chlorine based flux is used, it will cause pipe corrosion or, in particular, if the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing field refrigerant piping, nitrogen gas shall be blown through the piping to expel air from the piping.
  If you brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the piping, and could cause system malfunction.
- When brazing the refrigerant piping, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant piping. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9psi with a pressure-reducing valve if brazing while inserting nitrogen into the piping. **(Refer to Fig. 17)**

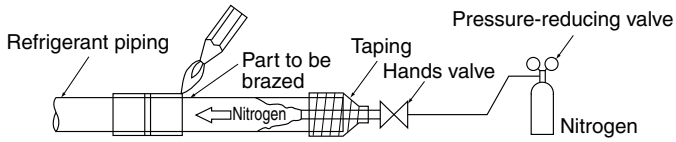


Fig. 17

7. DRAIN PIPING WORK

(1) Rig drain piping

- As for drain work, perform piping in such a manner that water can be drained properly.
- Employ a pipe with either the same diameter or with the diameter larger (excluding the raising section) than that of the connecting pipe (PVC pipe, nominal diameter 1in., outside diameter 1-1/4in.).
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming.
- If the drain pipe cannot be sufficiently set on a slope, execute the drain raising piping.
- To keep the drain pipe from sagging, space hanger bracket every 3 to 5ft..

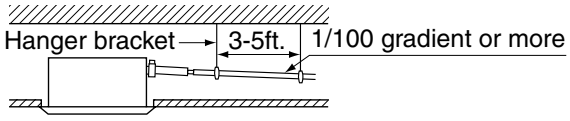


Fig. 18-1

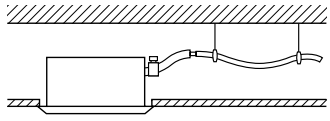


Fig. 18-2

⚠ CAUTION

Water pooling in the drainage piping can cause the drain to clog.

- Use the attached drain hose (1) and metal clamp (2).
- Insert the drain hose into the drain socket up to the base, and tighten the metal clamp securely within the portion of a white tape of the hose-inserted tip. Tighten the metal clamp until the screw head is less than 5/32in. from the hose.
- Wrap the attached sealing pad (10) over the metal clamp and drain hose to insulate.

- Make sure that heat insulation work is executed on the following 2 spots to prevent any possible water leakage due to dew condensation.
  - Indoor drain pipe
  - Drain socket

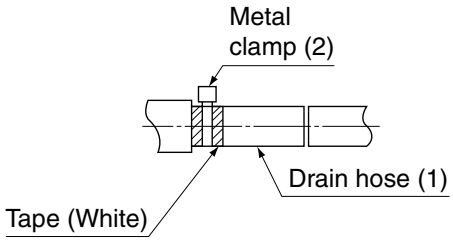


Fig. 19

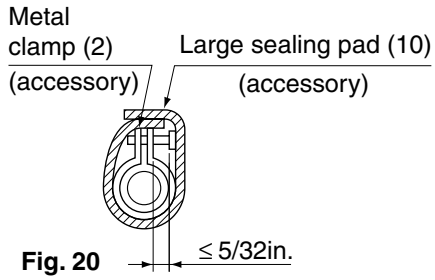


Fig. 20

<PRECAUTIONS FOR DRAIN RAISING PIPING>

- Install the drain raising pipes at a height of less than 26-1/2in..
  The drain pump of this unit has a high delivery flow rate. Therefore, the higher the drain raising height is, the lower the sound of draining will be. For this reason, a minimum drain raising height of 12in. is recommended.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 11-3/4in. from the unit.

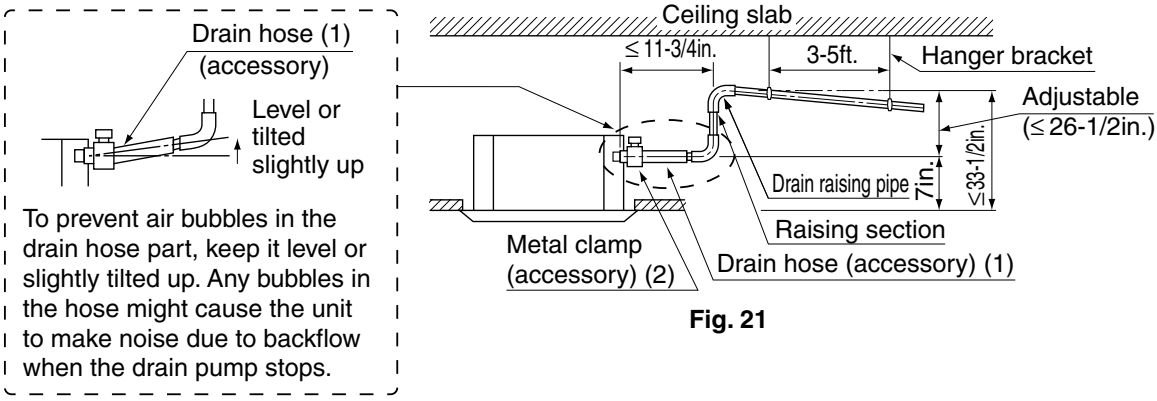


Fig. 21

NOTE

- To ensure no excessive pressure is applied to the included drain hose (1), do not bend or twist when installing. (This may cause leakage.)
- If converging multiple drain pipes, install according to the procedure shown below.

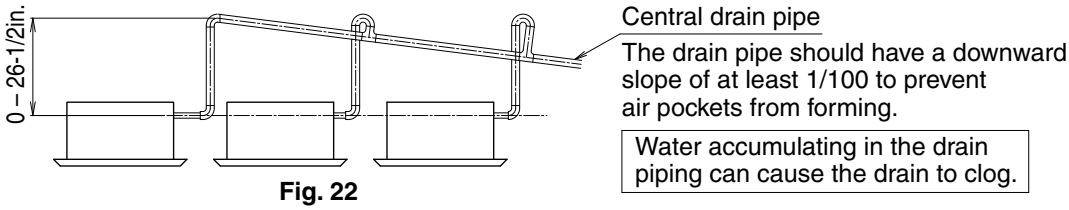


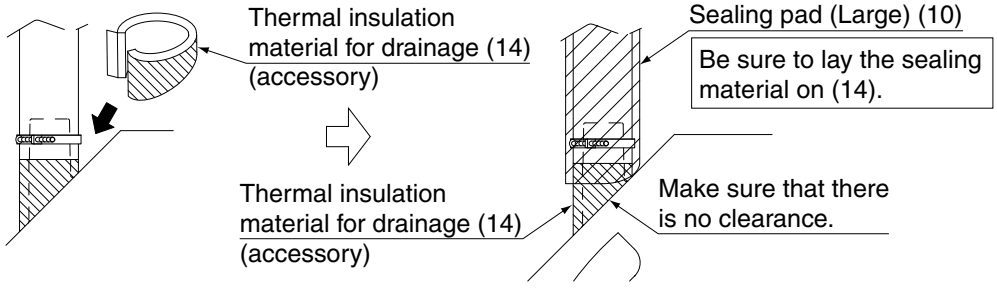
Fig. 22

Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

(2) After piping work is finished, check if drainage flows smoothly.

WHEN ELECTRIC WIRING WORK IS FINISHED

- Add approximately 1/4gal. of water slowly from the air outlet and check drainage flow.
- Check drainage flow during COOL running, explained under “12. TEST RUN”.
- Refer to the figure on the following after checking the draining of water, and mount the thermal insulation material for drainage (14) and thermal insulate the drain socket.

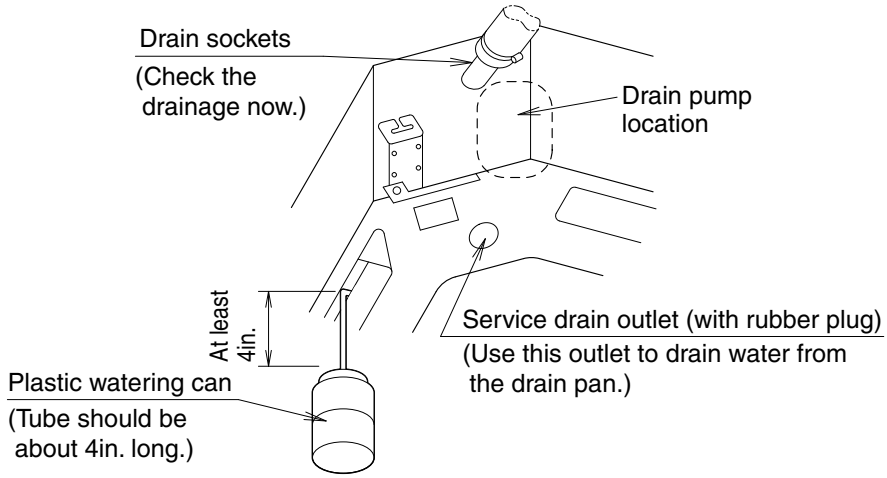


WHEN ELECTRIC WIRING WORK IS NOT FINISHED

⚠ CAUTION

- Electrical wiring work should be done by a certified electrician.
- If someone who does not have the proper qualifications performs the work, perform the following after the test run is complete.

- Remove the control box cover. Connect the single phase power supply (SINGLE PHASE 60Hz 208/230V) to connections L1 and L2 on the terminal block for wiring the units. Connect the ground wire firmly. When carrying out wiring work around the control box, make sure none of the connectors come undone. Be sure to attach the control box cover before turning on the power.
- Put approximately 1/4gal. of water into the drain pan through the blow-off mouth on the left-hand side of the drain socket. Make sure not to pour water over the drain pump or any electric parts including those of the drain pump.
- When the power is turned on, the drain pump will operate and you can check the draining of water through the transparent part of the drain socket. (The drain pump will stop automatically in 10 minutes.)
  After checking the draining of water, mount the thermal insulation material for drainage (14) and thermal insulate the drain socket.
- After confirming drainage **(Fig. 23, Fig. 24)**, turn off the power and remove the power supply.
- Attach the control box cover as before.



<Adding water through air discharge outlet>
[Method of adding water]

Fig. 23

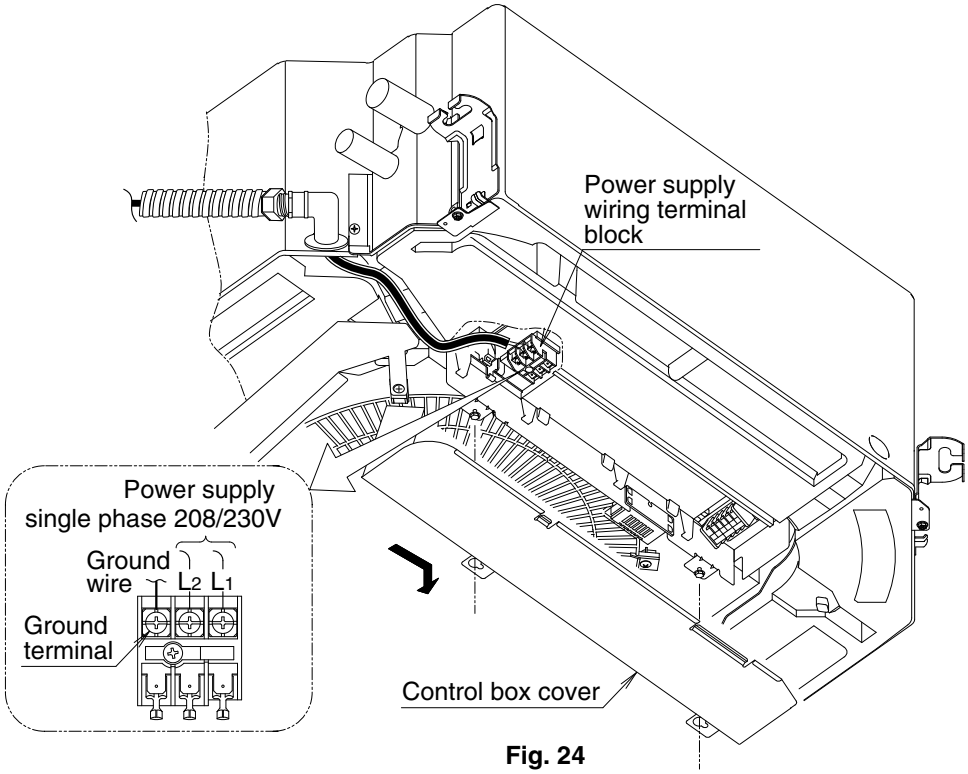


Fig. 24

⚠ CAUTION

Drain piping connections
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.

8. ELECTRIC WIRING WORK

8-1 General instructions

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also “WIRING DIAGRAM” attached to the unit body.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.
- Do not connect the ground wire to gas pipes, plumbing pipes, lightning rods, or telephone ground wires.
  - Gas pipes: might cause explosions or fire if gas leaks.
  - Plumbing: no grounding effect if hard vinyl piping is used.
  - Telephone ground wires or lightning rods: might cause abnormally high electric potential in the ground during lighting storms.

8-2 Electrical characteristics

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MOP	kW	FLA
FCQ18PAVJU	60	208/230	Max. 253 Min. 187	0.4	15	0.056	0.3
FCQ24PAVJU				0.5	15	0.056	0.4
FCQ30PAVJU				0.6	15	0.056	0.5
FCQ36PAVJU				1.4	15	0.120	1.1
FCQ42PAVJU				1.5	15	0.120	1.2

MCA: Minimum Circuit Ampacity (A) MOP: Maximum Overcurrent Protective Device (A)
kW: Fan Motor Rated Output (kW) FLA: Full Load Ampacity (A)

8-3 Specifications for field supplied fuses and wire

Power supply wiring		Remote controller wiring Transmission wiring	
Fuse/Breaker	Size	Wire	Size
15A	Wire size must comply with local codes.	Stranded, non-shielded copper (2 conductor)	AWG18 - 16

Allowable length of transmission wirings and remote controller wiring are as follows.
(1) Outdoor unit - Indoor unit:
Max. 3280ft. (Total wiring length: 6560ft.)
(2) Indoor unit - Remote controller
Max. 1640ft.

NOTE

1. Vinyl cord with sheath or cable (Insulated thickness : 0.04in. or more)

NOTE: Either a fuse or a breaker is acceptable.

9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

9-1 How to connect wires

Connection of wiring between units, ground wire and the remote controller wire (Refer to Fig. 25)

- Wiring the units and ground wire
  Remove the control box cover and connect wires of matching number to the terminal block for wiring the units (3 P) inside. And connect the ground wire to the ground terminal. In doing this, pull the wires inside through the hole and fix the wires securely with the included clamp (4) (2 points).
- Remote controller wires (not necessary for slave unit of simultaneous operation system)
  Remove the control box cover and pull the wires inside through the hole and connect to the terminal block for remote controller (6 P). (no polarity) Securely fix the remote controller wire with the included clamp (4) (2 points).
- After connection, attach sealing pad (13).
- Be sure to attach it to prevent the infiltration of water from the outside.

[PRECAUTIONS]

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
   - Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 1lbf·ft. ±10 %)

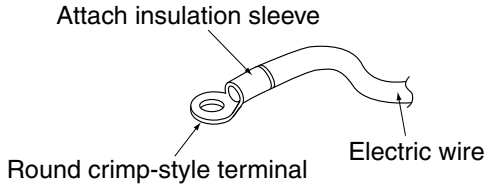


Fig. 25

2. **Tightening torque for the terminal screws.**
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

Terminal	Size	Tightening torque
Terminal block for remote controller (6P)	M3.5	0.58 – 0.72lbf·ft
Power supply terminal block (3P)	M4	0.87 – 1.06lbf·ft

When none is available, follow the instructions below.

3. Do not connect wires of different gauge to the same grounding terminal.

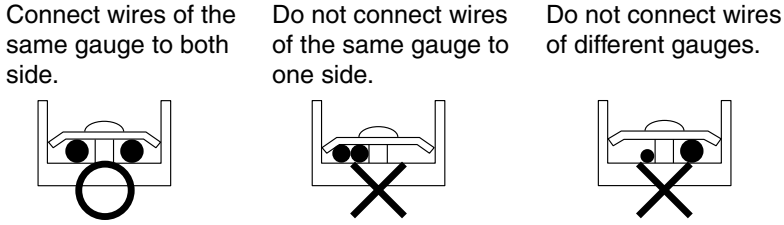


Fig. 26

   Looseness in the connection may deteriorate protection.
4. Outside the unit, keep transmission wiring at least 2in. away from power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER.” attached to the remote controller.
6. **Never connect power supply wiring to the terminal block for remote controller. A mistake of the sort could damage the entire system.**
7. Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as popping open the control box cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.
8. Pass the power supply wire through the attached insulation tube (16) between the outlet of conduit and the power supply terminal, and bind them together with the attached clamp (4). **(Refer to Fig. 27-2)**
9. Use a pair of conduit mounting plate (17) and (18) to connect a conduit to the unit as shown Fig. 27-1.

10. Use a 90° elbow type of conduit with dimensions Fig. 27-1 to prevent it from hitting the swing motor housing of decoration panel.

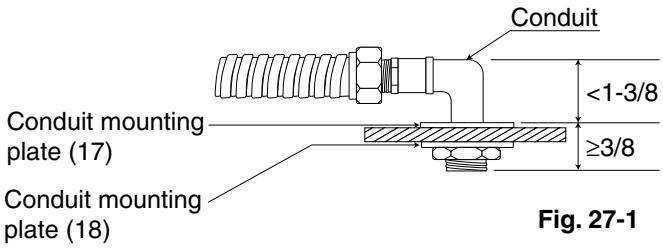


Fig. 27-1

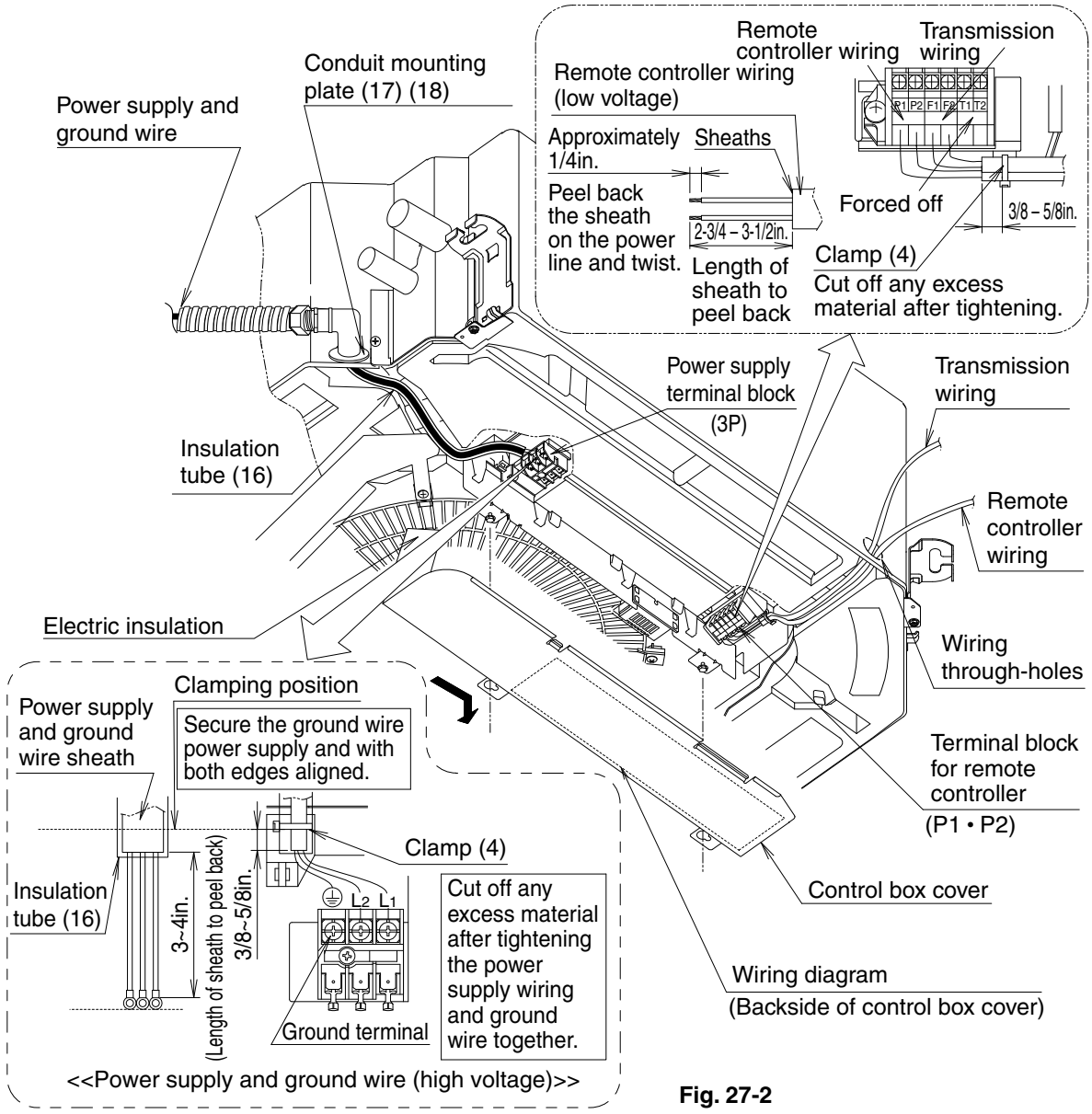


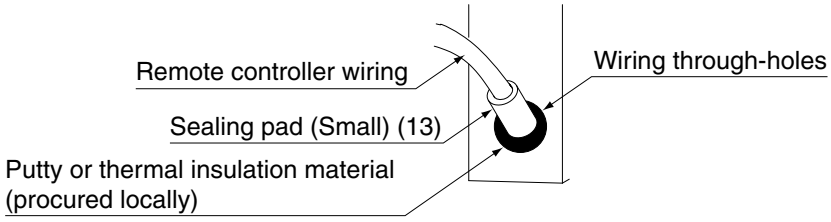
Fig. 27-2

Observe the notes mentioned below when wiring to the terminal block for wiring the units.

⚠ CAUTION

- When clamping wiring, use the included clamping material to prevent outside pressure being exerted on the wiring connections and clamp firmly. When doing the wiring, make sure the wiring is neat and does not cause the control box cover to stick up, then close the cover firmly.
- When attaching the control box cover, make sure you do not pinch any wires.
- After all the wiring connections are done, fill in any gaps in the through holes with putty or insulation (procured locally) to prevent small animals and insects from entering the unit from outside. (If they get in, they could cause short circuits in the control box.)
- Outside the unit, separate the low voltage wiring (remote controller wire) and high voltage wiring (power supply, ground, and other power wiring) at least 2in. so that they do not pass through the same place together. Proximity may cause electrical interference, malfunctions, and breakage.

Processing method of wiring through-holes



9-2 Wiring example

⚠ WARNING

Install a ground fault circuit interrupter.
The installation of a ground fault circuit interrupter is imperative for the prevention of electric shocks and fire accidents.

- Fit the power supply wiring of each unit with a disconnect switch and a maximum overcurrent protective device as shown in the drawing.

COMPLETE SYSTEM EXAMPLE

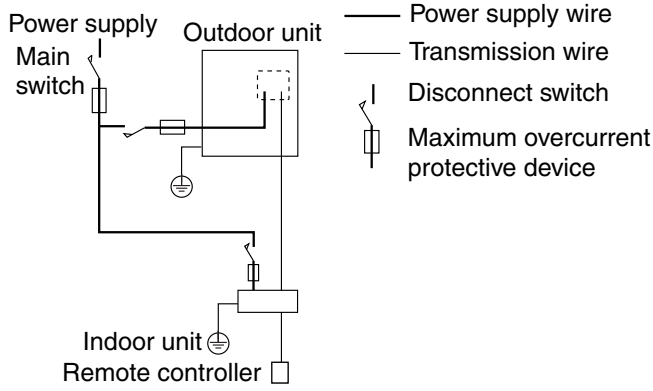


Fig. 28

1. When using 1 remote controller (Normal operation)

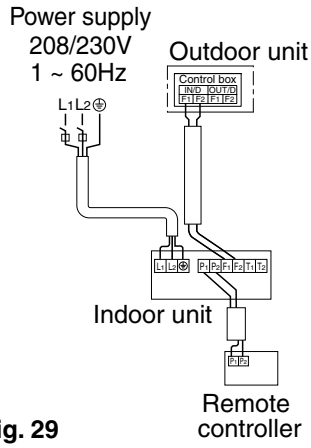


Fig. 29

2. When using 2 remote controllers

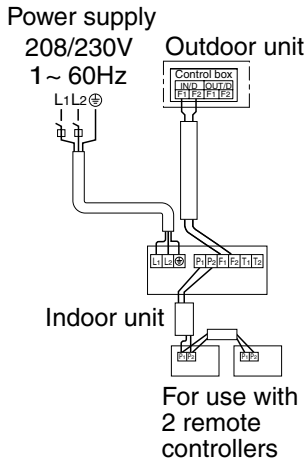


Fig. 30

[PRECAUTIONS]

1. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

9-3 Control by 2 remote controllers (controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

- The settings of the BRC1E71 remote controller should be switched while referring to the manual supplied with the remote controller.
- In case of the BRC1D71 remote controller.

(1) Insert a ⊖ screwdriver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part. (The remote controller PC board is attached to the upper part of remote controller.) **(Refer to Fig. 31)**

(2) Turn the **main/sub changeover** switch on one of the two remote controller PC boards to “S”. (Leave the switch of the other remote controller set to “M”.) **(Refer to Fig. 32)**

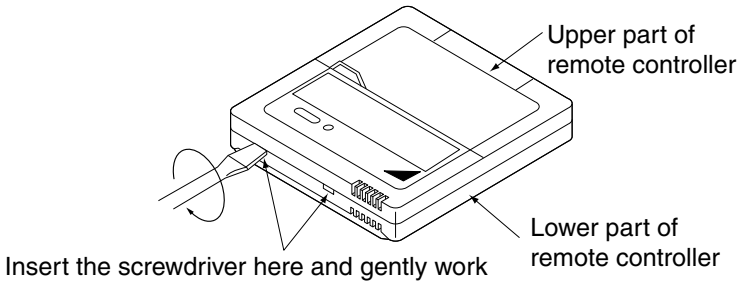


Fig. 31

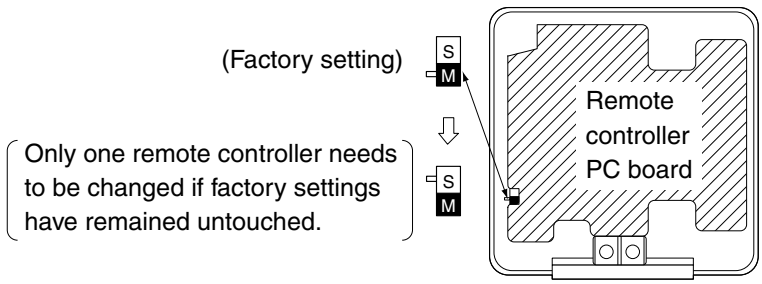


Fig. 32

Wiring Method (See “ELECTRIC WIRING WORK”)

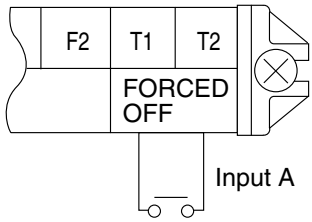
(3) Remove the control box cover

(4) Add remote control 2 (slave) to the terminal block for remote controller (P1, P2) in the control box. (There is no polarity.) (Refer to Fig. 30 and 8-3.)

9-4 Computerized control (forced off and on/off operation)

(1) Wire specifications and how to perform wiring

- Connect the input from outside to terminals T1 and T2 of the terminal block for remote controller.



Wire specification	2-conductor, stranded, non-shielded copper, PVC or vinyl jakcet
Gauge	AWG18 - 2
Length	Max. 328ft.
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 1 mA.

(2) Actuation

- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input “ON” stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION

- Turn the power on and then use the remote controller to select operation.

9-5 Centralized control

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

10. INSTALLATION OF THE DECORATION PANEL

<If performing a test run without attaching the decoration panel, read “11. FIELD SETTING” and “12. TEST RUN” first.>
Refer to the installation manual attached to the decoration panel.
After installing the decoration panel, ensure that there is no space between the unit body and decoration panel.
Note:
Since the electric insulation sheet stacked to the control box cover gets sandwiched between the unit body and decoration panel, when closing the cover, slip the insulation sheet between them first and then attach the cover to the control box.

11. FIELD SETTING

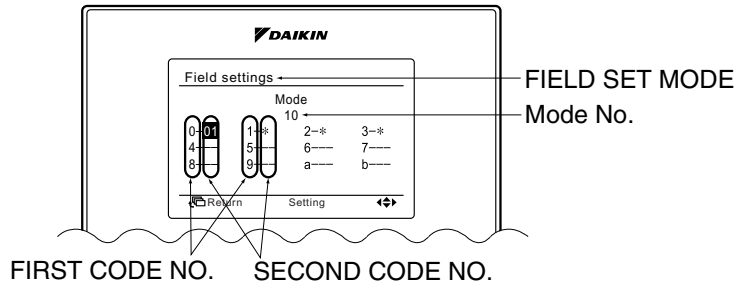
⚠ CAUTION

When performing field setting or test run without attaching the decoration panel, do not touch the drain pump. This may cause electric shock.

- Check that the outdoor unit has been wired properly.

Make sure the control box covers are closed on the indoor and outdoor units.
Field setting must be made from the remote controller and in accordance with installation conditions.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.” and “SECOND CODE NO.”.
- For setting procedures and instructions, see “Field settings” in the installation manual provided with the remote controller.



11-1 Setting ceiling height

- Select the SECOND CODE NO. that corresponds to the ceiling height in “Table 4”. (SECOND CODE NO. is factory set to “01”.)

Table 4

		FCQ - PAVJU		Mode No. Note) 1	FIRST CODE NO.	SECOND CODE NO.
		18 · 24 · 30 type	36 · 42 type			
Ceiling height (ft.)	Standard · All round outlet	≤ 8-3/4	≤ 10-1/2	13 (23)	0	01
	High ceiling 1	8-3/4 - 10	10-1/2 - 12			02
	High ceiling 2	10 - 11-1/2	12 - 13-3/4			03

Note:
1. “Mode No.” setting is done in a batch for the group. To make or confirm settings for an individual unit, set the internal mode number in parentheses.
2. The figure of the ceiling height is for the all round outlet. For the settings for four-direction (part of corner closed off), three-direction and two-direction outlets, see the installation manual supplied with the sealing member of air discharge kit sold separately.

11-2 Setting of air direction

- See the installation manual supplied with the sealing member of air discharge outlet kit sold separately technical guide, for ceiling height settings for two and three-direction air discharge. (The SECOND CODE NO. is factory set to “01” (all round outlet) before shipping.)

11-3 Settings for optional accessories

- When installing optional accessories, refer to the installation manual provided with them and make necessary settings.

11-4 Setting of air filter sign

- Remote controllers are equipped with liquid crystal display air filter signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for filter contamination-light.)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02
No Display			3	

Note:

1. “Mode No.” setting is done in a batch for the group. To make or confirm settings for an individual unit, set the internal mode number in parentheses.
2. Make settings for “No Display” in cases where no cleaning display is required, e.g., at the time of regular maintenance servicing.

- The air conditioner is provided with a long life filter as a standard accessory. Explain to the customer the necessity of cleaning the filter periodically along with the set time for filter cleaning for the prevention of clogging.

12. TEST RUN

Refer to the installation manual of the outdoor unit.

- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual attached to the outdoor unit or the service manual.
  If any of the items in “Table 6” is displayed, there may be a problem with the wiring or power supply, so check the wiring again.

Table 6

Remote controller display	Contents
“ CENTRAL CONTROL ” is lit up	• There is a short circuit at the FORCED OFF terminals (T1, T2).
“U4” is lit up “UH” is lit up	• The power supply on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission and / or the FORCED OFF.
No display	• The power supply on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller, the transmission, and / or the FORCED OFF.

- If the decoration panel is installed on the indoor unit during the test run, check the operation of the swing flap on the panel.
- In order to protect the indoor unit, instruct the customer not to operate the air conditioner until the interior work is completed if the interior work has not been finished at the end of the test run.
  (If the air conditioner is operated, substances discharged from the paint, adhesive, etc. can contaminate the indoor unit, and they may cause splashing or leakage of water.)

NOTE

- After the test run is finished, check the items listed in “**2. Items to be checked at time of delivery**”.

16.2 FHQ18PVJU / FHQ24PVJU / FHQ30PVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this 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 danger, warning, caution and note symbols.

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** ..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas is heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or qualified personnel to carry out installation work. Do not try to install the air conditioner by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **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 injuries.
- **Carry out the specified installation work after considering strong winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment 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 no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wire and transmission wire, 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.

C: 3PN06240-12Q

- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations :**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **Install drain pipe in order to ensure proper drainage and do the thermal insulation of the pipe in order to prevent condensate.**
  Improper drain pipe may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
  Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least 5 minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **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.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wire and transmission wire at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts especially the refrigerant piping.**
- Be sure to check the type of refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When selecting installation site, refer to the paper pattern.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists.**
  - **(Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.**
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

- Entrust installation to the place of purchase or a qualified person. Improper installation could lead to leak and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

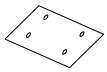
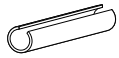
⚠ NOTE

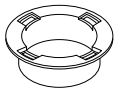
- Be sure to read this manual before installing the indoor unit.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain pipe	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	9 pcs.
Shape				

Name	(5) Paper pattern for installation	Insulation pipe cover	Sealing pad
Quantity	1 pc.	1 each	1 each
Shape		(6) For gas pipe  (7) For liquid pipe 	(8) Large  (9) Small 

Name	(10) Resin bush	(11) Insulating tube	
Quantity	1 pc.	3 pcs.	(Other) • Operation manual • Installation manual
Shape		For wire 	

2-2 OPTIONAL ACCESSORIES

- The remote controller are required for this indoor unit in Table 1.
- These are 2 types of remote controllers : wired and wireless. Select a remote controller according to customer request and install in an appropriate place.

Table 1

Remote controller	
Wired type	BRC1C71
Wireless type	BRC7E83

NOTE

- If you wish to use a remote controller that is not listed in “Table 1” on page 4, select a suitable remote controller after consulting catalogs and technical materials.

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

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

b. Items to be checked at time of delivery

∗ Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the instruction manual over to your customer?	

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

Please attach additional insulation pipe cover to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 3/8 in.. or more as insulation pipe cover.

(1) Select an installation site where the following conditions are fulfilled and that meets your customer’s approval.

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.

DANGER

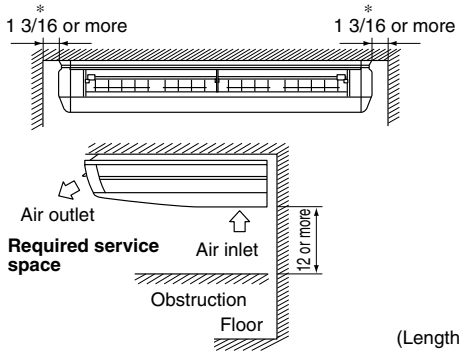
- Do not install unit in an area where flammable materials are present due to the risk explosion resulting in serious injury or death.

WARNING

- If the supporting structural members are not strong enough to take the unit’s weight, the unit could fall out of place and cause serious injury.

NOTE

- When a margin is in the space of the ∗ section, service and maintenance work will become still easier if it vacates 7 7/8 in. or more.



(Length : in.)

- Where pipe between indoor and outdoor units is possible within the allowable limit.
  (Refer to the installation manual for the outdoor unit.)
- Install the indoor and outdoor units, power wire and connecting wires at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise.
  (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)

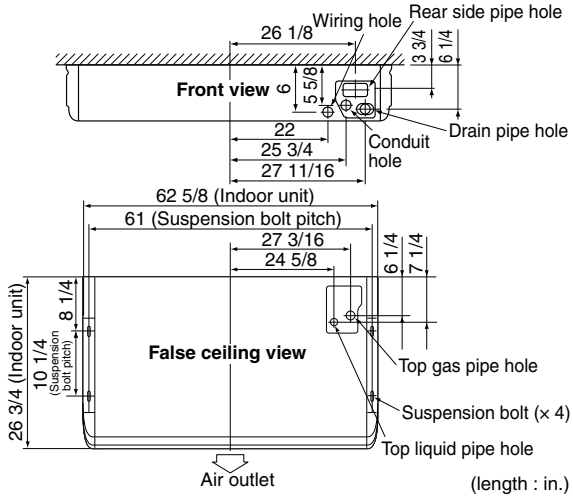
(2) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.
(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

(3) This product may be installed on ceilings up to 10.6 ft. from the floor.

(4) A direction of installation.
- Refrigerant piping : the rear side, right side or upper part.
- Wiring : only the rear side.
- Drain piping : the rear right side or the right side.
  (As the rear left, installation is impossible.)

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of holes for indoor unit, suspension bolt position, piping and wiring.



(length : in.)

(2) Make holes for suspension bolts, refrigerant and drain pipe, and wire.
- Refer to the paper pattern for installation.
- Select the location for each of holes and open the holes in the ceiling.

(3) Remove the parts from the indoor unit.

(3-1) Detach the suction grille.
- Slide the locking knobs (×2) on the suction grille inward (direction of arrows) and lift upwards. **(Refer to Fig. 1)**
- With the suction grille open, remove the suction grille forward, holding on to the rear tabs (×2) on the suction grille. **(Refer to Fig. 2)**

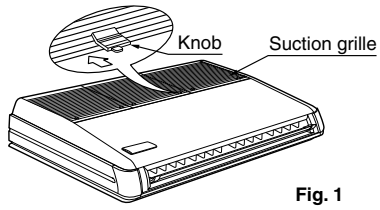


Fig. 1

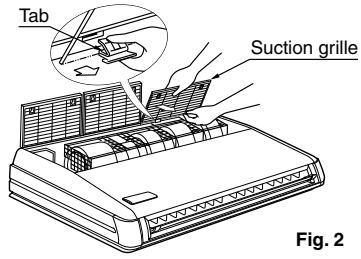


Fig. 2

(3-2) Remove the decoration panels (left and right) and the protection net.
- After removing the securing screws for the decoration panels (one each), pull them forward (in the direction of the arrow) and remove them. **(Refer to Fig. 3)**
- Remove the securing screws for the protection net. **(Refer to Fig. 3)**

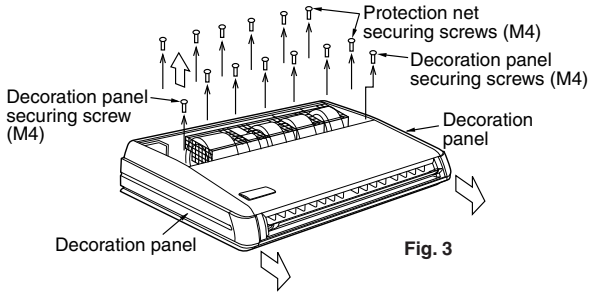


Fig. 3

- Raise one side of the protection net upwards (in the direction of the arrow (i)) and remove back (the arrow (ii)). **(Refer to Fig. 4, 5)**
- Take out the accessories.

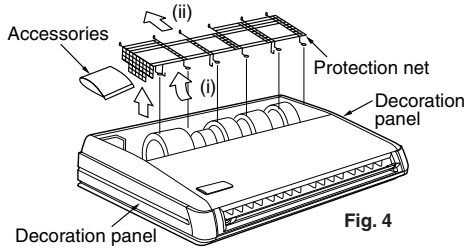


Fig. 4

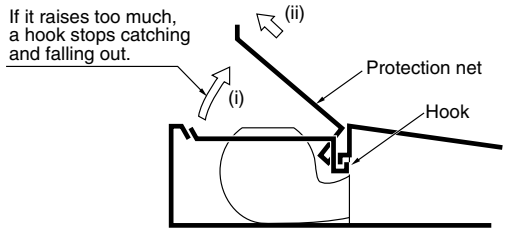


Fig. 5

(3-3) Remove the rear metal plate for transmission wire, remote controller wire and refrigerant pipe.

- It is necessary to drill the knock out hole in the removable part. Knock down several times with a punch and hammer and remove the removable part with pliers.
- When setting the refrigerant pipe to the rear side, remove the securing screws and the metal plate. **(Refer to Fig. 6).**

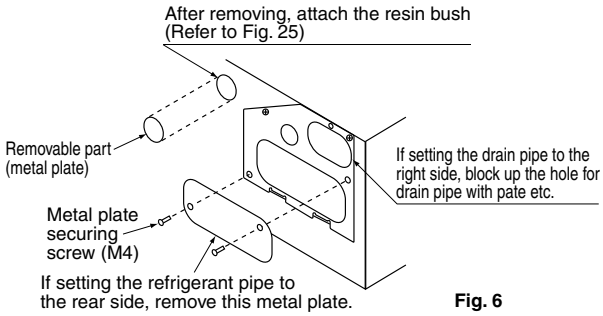


Fig. 6

(3-4) Remove the hanger brackets.

- Loosen the 2 bolts (M8) used to attach the hanger brackets which are on each side (4 places left and right) to within 3/8 in.. **(Refer to Fig. 7, 8)**
- After removing the securing screws (M5) for the hanger brackets which are on the rear side, pull the hanger brackets back (in the direction of the arrow), and remove them. **(Refer to Fig. 8)**

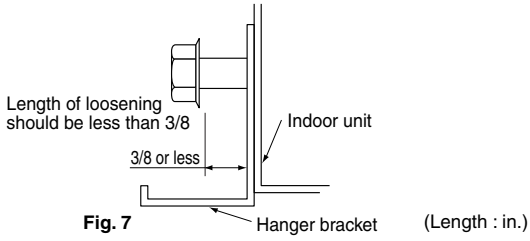


Fig. 7

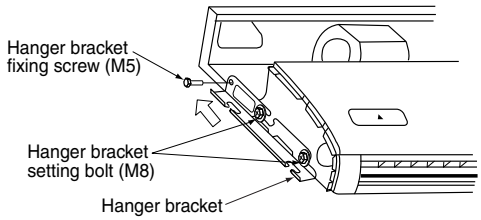


Fig. 8

(4) Attach the suspension bolts. (Use suspension bolts which are W3/8 or M8-M10 in size.)

- Adjust the distance of the suspension bolts from the ceiling in advance. **(Refer to Fig. 9)**

NOTE

- Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

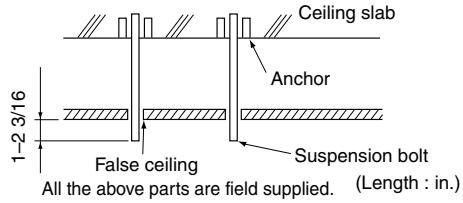


Fig. 9

5. INDOOR UNIT INSTALLATION

It may be easier to attach accessory parts before installing the indoor unit. Therefore, please also read the instruction manuals which are provided with the accessory parts.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

(1) Secure the hanger brackets to the suspension bolts. (Refer to Fig. 10)

NOTE

- To ensure they are safely secured, use the included washers, and secure them with double nuts to make sure.

(2) Lift the indoor unit's main body, insert the bolts (M8) for the hanger brackets into the attachment part on the hanger brackets, while sliding the main body from the front. (Refer to Fig. 11)

(3) Fasten the bolts for the hanger brackets (M8) securely in 4 places, left and right. (Refer to Fig. 11)

(4) Replace the screws for the hanger brackets which had been removed (M5) securely in 2 places left and right. This is necessary to prevent any forward and back slide in the main body of the indoor unit. (Refer to Fig. 11)

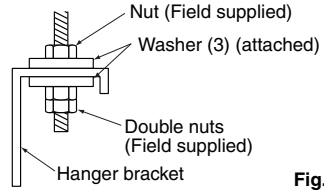


Fig. 10

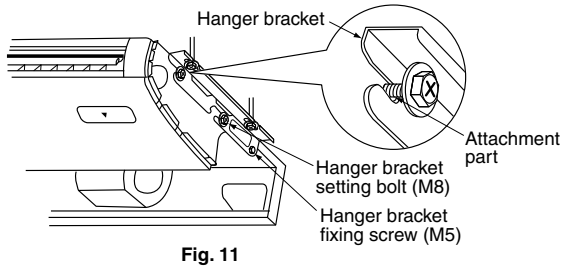


Fig. 11

(5) When hanging the indoor unit main body, be sure to use a level or a plastic tube with water in it to make sure the drain piping is set either level or slightly tilted, in order to ensure proper drainage. (Refer to Fig. 12)

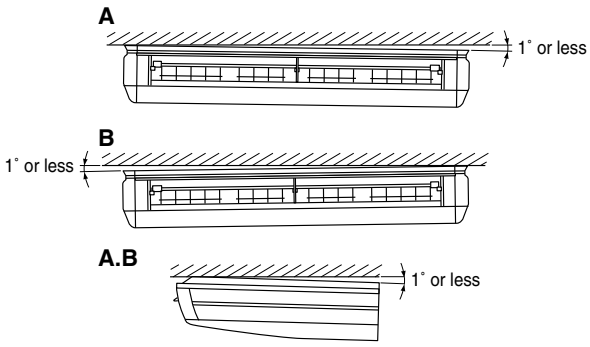


Fig. 12

A. When the drain piping is tilted to the right, or to the right and back.

Place it level, or tilt it slightly to the right or the back. (1° or less.)

B. When the drain piping is tilted to the left, or to the left and back.

Place it level, or tilt it slightly to the left or the back. (1° or less.)

CAUTION

- Setting the unit at an angle opposite to the drain piping might cause a water leakage.

6. REFRIGERANT PIPING WORK

DANGER

- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

CAUTION

- **Use a pipe cutter and flare suitable for the type of refrigerant.**
- **To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.**
- **Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.**

6-1 GENERAL INSTRUCTIONS

- **For refrigerant pipe of outdoor units, see the installation manual attached to the outdoor unit.**
- **Execute thermal insulation work completely on both sides of the gas pipe and the liquid pipe.**

  Otherwise, a water leakage can result.
  Be sure to use insulation that is designed for use with HVAC systems.
- **Also, in cases where the temperature and humidity of the refrigerant pipe sections might exceed 86°F or RH 80%, reinforce the thermal insulation. (3/4 in. or thicker)**

  Condensate may form on the surface of the insulation pipe cover.
- **Before refrigerant pipe work, check which type of refrigerant is used.**

  Proper operation is not possible if the types of refrigerant are not the same.

6-2 CONNECTING THE REFRIGERANT PIPE

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 13)**
- Refer to “Table 2” to determine the proper tightening torque.
- Refer to “Table 2” for the dimensions of flare shape.
- When connecting the flare nut, coat the flare section with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 14)**

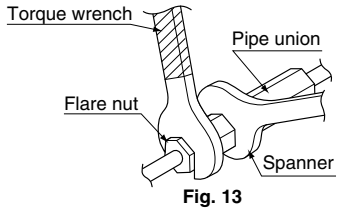


Fig. 13

CAUTION

- Be careful for oil not to adhere to any portions other than a flare part. If oil adhere to resin parts etc., there is a possibility of damaging by deterioration.

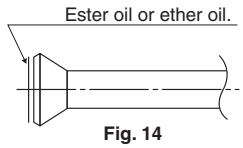
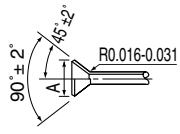


Fig. 14

NOTE

- Use the flare nut included with the unit main body.

Table 2

Pipe size (in.)	Tightening torque (ft. lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ3/8	24.1-29.4	0.504-0.520	
ϕ5/8	45.6-55.6	0.760-0.776	

CAUTION

- Overtightening may damage the flare and cause a refrigerant leakage

Not recommended but in case of emergency

You must use a torque wrench, but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below :

Table 3

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ3/8	60 to 90 degrees	Approx. 7 7/8
ϕ5/8	30 to 60 degrees	Approx. 11 13/16

After the work is finished, make sure to check that there is no gas leak.

6-3 BRAZING REFRIGERANT PIPING

DANGER

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

"Do not use flux when brazing refrigerant pipe. Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux."
(Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing local refrigerant pipe, nitrogen gas shall be blown through the pipe to expel air from the pipe.
  If you brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the pipe, and could cause system malfunction.
- When brazing the refrigerant pipe, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant pipe. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9 psi with a pressure-reducing valve if brazing while inserting nitrogen into the pipe. **(Refer to Fig. 15)**

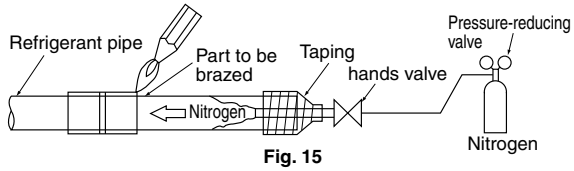


Fig. 15

DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensate or a burn if touched.

6-4 PIPING INSULATION

- Make absolutely sure to execute thermal insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the insulation pipe cover (6) and (7). (Fasten both ends with the clamps (4).) **(Refer to Fig. 16)**
- Wrap the small sealing pad (9) only around the insulation for the joints on the gas piping side. **(Refer to Fig. 16)**

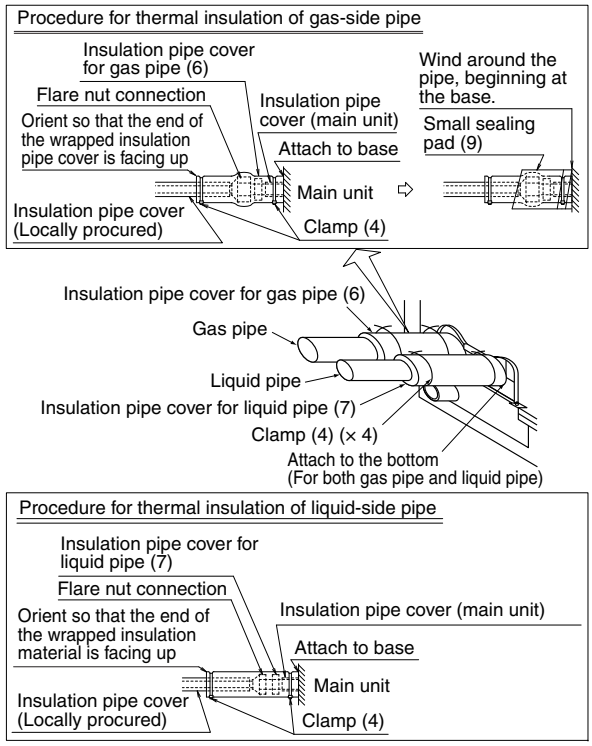


Fig. 16

(1) For piping facing back.
Remove the rear metal plate for pipe. **(Refer to Fig. 17)**
- The figure of the direction of back shows when both the piping and drain pipe are set backward.
  When setting the piping to face up or right, attach the rear metal plate for refrigerant pipe and plug a hole for drain pipe. (See "4 PREPARATIONS BEFORE INSTALLATION" (3-3) on page 6)

(2) For piping facing up.
- When setting the piping to face up, the L-shaped branch pipe kit sold separately is required.
- Removing the top penetration lid and use the L-shaped branch pipe kit sold separately to set the pipe. **(Refer to Fig. 18, 19)**

(3) For piping facing right.
- Cut out a slit hole on the decoration panel (right) and set the pipe. **(Refer to Fig. 17)**

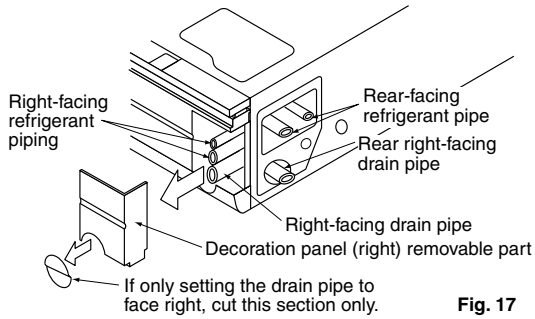


Fig. 17

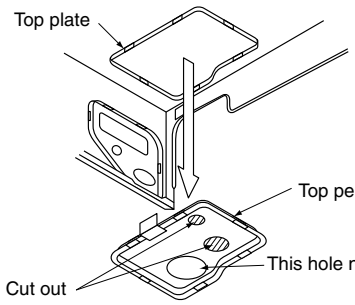


Fig. 18 (A figure from an inside bottom)

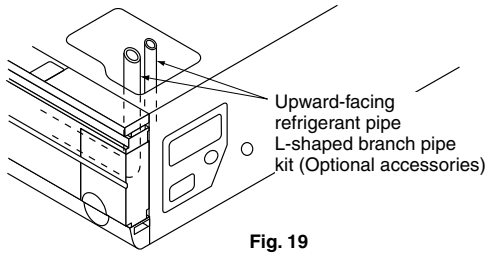


Fig. 19

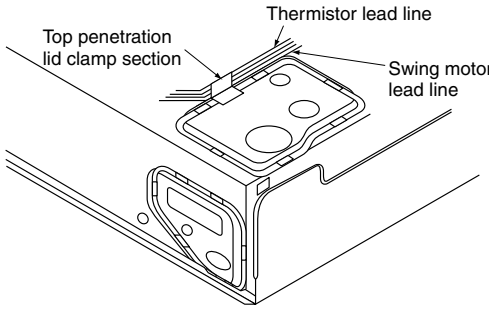


Fig. 20 (A figure from an inside bottom)

- When piping is complete, cut the removed penetration lid into the shape of the pipe using scissors and attach.
  As when before removing the top penetration lid, secure the lead lines for the swing motor and thermistor by passing them through the clamp section on the top penetration lid.
  (Refer to Fig. 18, 20)
- When doing this, block any gaps between the pipe penetration lid and the pipes using putty to prevent dust from entering the indoor unit.

7. DRAIN PIPING WORK

(1) Carry out the drain piping.

- Make sure piping provides proper drainage.
- You can select whether to bring the drain piping out from the rear right or right. For rear right-facing and right-facing situations, refer to "6. REFRIGERANT PIPING WORK" on page 7.
- Make sure the pipe diameter is the same or bigger than the branch piping. (vinyl-chloride piping, nominal diameter 1 in., external diameter 1 1/4 in.)
- Make sure the piping is short, has at least a 1/100 slope, and can prevent air pockets from forming. **(Refer to Fig. 21)**
- Do not allow any slack to gather in the drain pipe inside the indoor unit.
  (Slack in the drain pipe can cause the suction grille to break.)

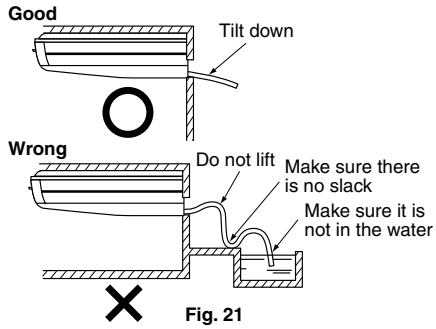


Fig. 21

CAUTION

- Water accumulating in the drain piping can cause the drain to clog.

- Be sure to use the drain pipe (1) and metal clamp (2).
  Also, insert the drain pipe completely into the drain socket, and securely attach the metal clamp bracket inside the gray tape area on the inserted tip of the drain pipe. **(Refer to Fig. 22)**
  Screw the screws on the metal clamp bracket until there is 5/32 in. left. (Pay attention to the direction of the attachment to prevent the metal clamp bracket from coming into contact with the suction grille.) **(Refer to Fig. 23)**

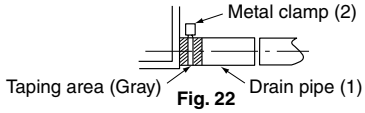


Fig. 22

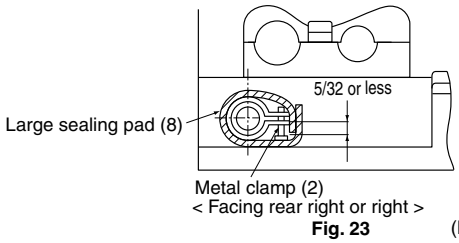


Fig. 23 (Length : in.)

- Insulate the metal clamp bracket and drain pipe from the bottom using the large sealing pad (8). **(Refer to Fig. 23)**
- Be sure to insulate all drain piping running indoors.

(2) Check to make sure the water flows smoothly after piping is complete.

- Slowly pour 600 ml of drain-checking water into the drain pan through the air outlet.

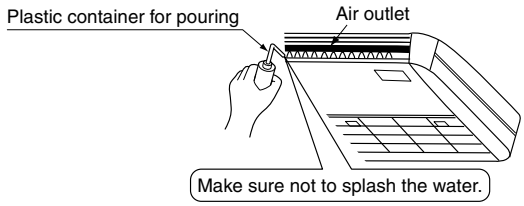


Fig. 24

CAUTION

- Drain piping connections :
  Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.

- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

8. ELECTRIC WIRING WORK

8-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also "Wiring diagram label" attached to the control box lid.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wires must be performed by an authorized electrician.
- An earth leakage circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.

DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

8-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FHQ18PVJU	60	208-230V	Max. 253V Min. 187V	1.3	15	130	1.0
FHQ24PVJU				1.3	15	130	1.0
FHQ30PVJU				1.3	15	130	1.0

MCA : Min. Circuit Amps (A); MFA : Max. Fuse Amps (A)
W: Fan Motor Rated Output (W); FLA : Full Load Amps (A)

8-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRES

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	fuse/breaker	Size	Wire	Size
FHQ18PVJU	15A	Wire size must comply with local codes.	2-conductor non-shielded	AWG 18-2
FHQ24PVJU				
FHQ30PVJU				

Allowable length of transmission wire between indoor/outdoor units and between the indoor unit and the remote controller wire are as follows.

(1) Outdoor unit - Indoor unit : Max. 3280 ft.

(2) Indoor unit - Remote controller : Max. 1640 ft.

NOTE: Either a fuse or a breaker is acceptable.

9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

9-1 HOW TO CONNECT WIRES

CAUTION

- Even if the control box lid is removed, pull the remote controller wire, transmission wire and the power supply wire inside the unit using conduits for each, so that the wires do not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant pipe in order to prevent external pressure being applied to transmission wire and power supply wire.
- To avoid short circuits in the electric parts box, be sure to apply the sealing material or putty (not included) to the wiring hole to prevent the infiltration of water, insects or other small creatures.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller wire and transmission wire together with power supply wire. Doing so may cause malfunction.
- Remote controller wire, transmission wire and power supply wire should be located at least 5 in. from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

<Method of wiring power supply, units and connecting remote controller wiring> (Refer to Fig. 26)

- Attaching the resin bush
  Attach the resin bush (10) for remote controller wiring.
- Installation of conduit
  Insert the conduit for power supply wire in the conduit hole, and fix it with the lock nut.

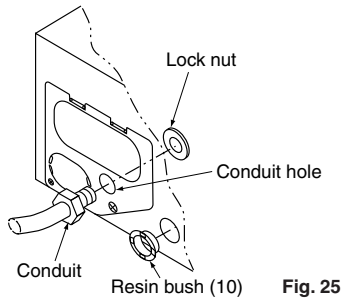


Fig. 25

- **Power supply wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid, match up the phases on the power supply terminal block inside (2P), and make the connections. After this is done, use the attached clamp (4) to bind wire between units to the anchor point. **(Refer to Fig. 27)**
- **Remote controller wire and transmission wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid.
  Thread the remote controller wire and transmission wire through the insulating tube (11) and secure with the clamp (4), and cut off the insulating tube (11) to suitable length. Pull the wires inside through resin bush and connect the wires to the transmission terminal block (6P) inside the control box. After connecting, use the clamp (4) to bind the remote controller wire together with the transmission wire to the anchor. **(Refer to Fig. 26, 27, 28)**

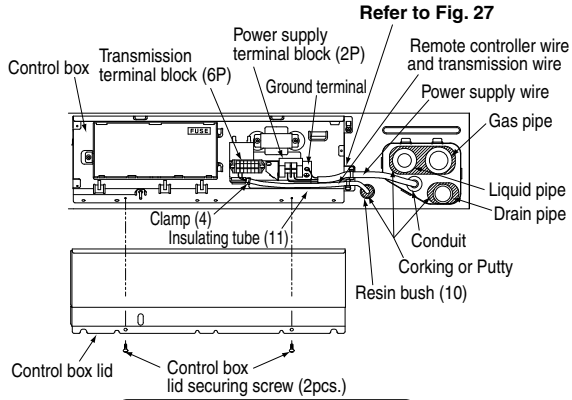


Fig. 26

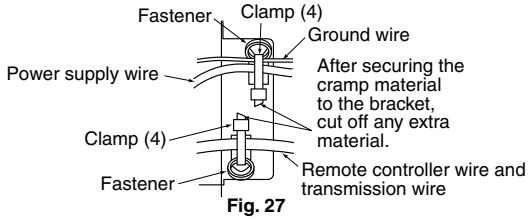


Fig. 27

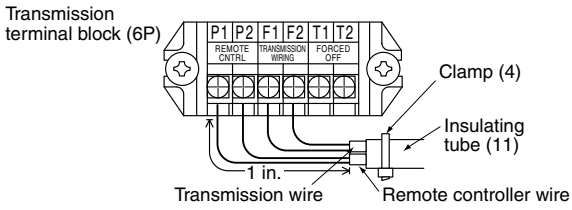


Fig. 28

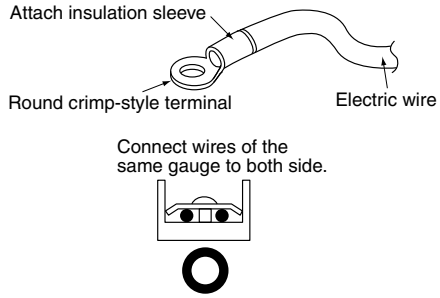
- In the insulating tube (11), it can let the remote controller wire and transmission wire pass to 2.

WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as to not obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.

NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal.
     (Looseness in the connection may cause overheating.)
   - Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 0.97 ft lbf ±10%)



2. Tightening torque for the terminal screws.
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

Table 4

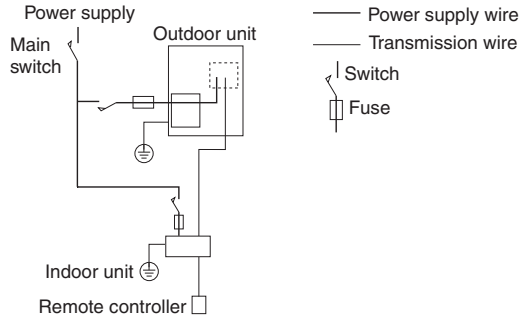
Terminal	Size	Tightening torque (ft-lbf)
Transmission terminal block (6P)	M3.5	0.58 – 0.72
Power supply terminal block (2P)	M4	0.87 – 1.06
Ground terminal	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire at least 5 in. away from power supply wire. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wire, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

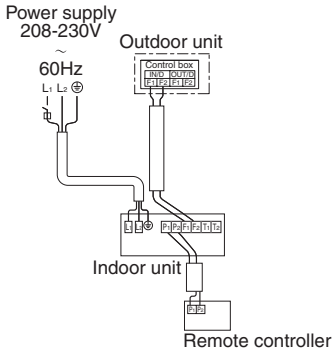
9-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

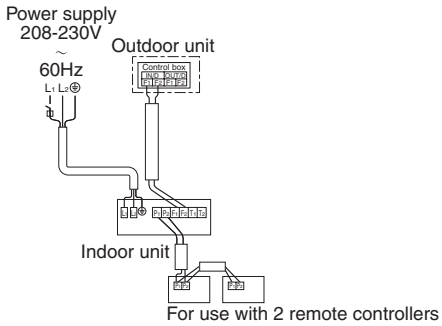
COMPLETE SYSTEM EXAMPLE



1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



NOTE

1. All transmission wires except for remote controller wire are polarized and must match the terminal symbol.
2. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
3. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

10. ATTACHING THE SUCTION GRILLE, THE DECORATION PANELS AND THE PROTECTION NET

Once wiring is complete, firmly attach the control box lid, the suction grille, the decoration panels and the protection net in the order opposite to detachment.

- Attaching the protection net
  Attach the protection net from the way of the hook (i), fix 2 securing screws of the middle of the other side first (ii), then fix the remaining securing screws (iii).

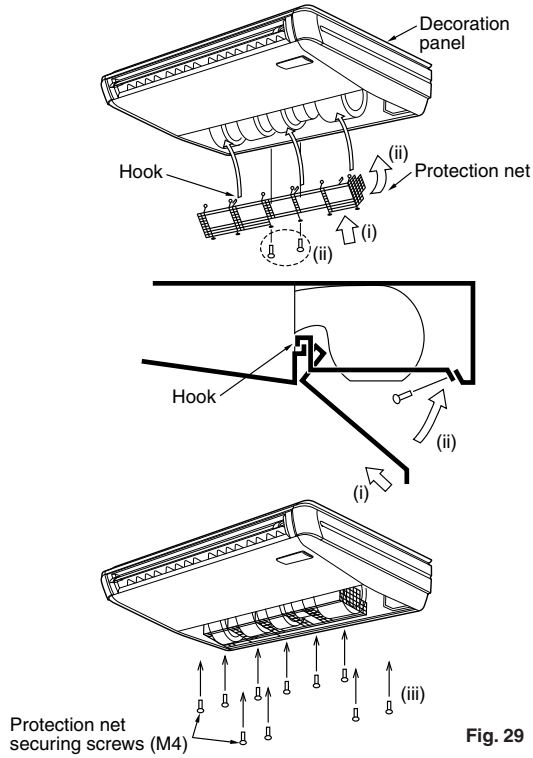


Fig. 29

11. FIELD SETTING

Make sure the control box lids are closed on the indoor and outdoor units, and turn on the power.
Field setting must be made from the remote controller in accordance with the installation manual.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting and operation, refer to the “FIELD SETTING” in the installation manual of the remote controller.

11-1 Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filer signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for air filter contamination-light.)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

<When using wireless remote controllers>

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

11-2 2 remote controllers control (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to "MAIN" and the other to "SUB".

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part.
The remote controller PC board is attached to the upper part of remote controller. **(Refer to Fig. 30)**

(2) Turn the MAIN/SUB changeover switch on one of the 2 remote controllers PC boards to "S". (Leave the switch of the other remote controllers set to "M".) **(Refer to Fig. 31)**

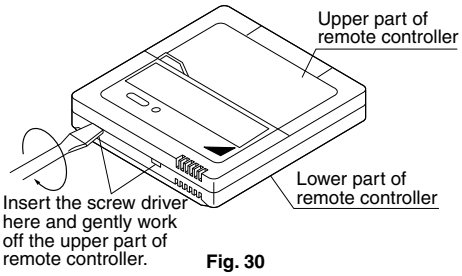


Fig. 30

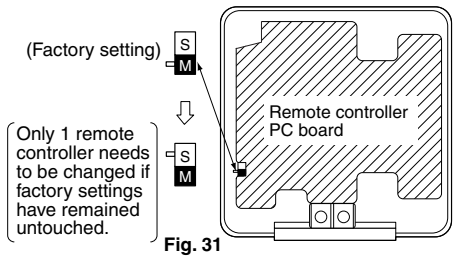


Fig. 31

Wiring Method

(See "8. ELECTRIC WIRING WORK" and "9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER" on page from 10 to 12.)

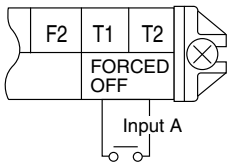
(3) Remove the control box lid.

(4) Add 2nd remote controller to the transmission terminal block (P1, P2) in the control box. (There is no polarity.) (Refer to Fig. 28 on page 11 and Table 4 on page 11)

11-3 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

See "FIELD SETTING" on page 12 for local settings.

(1) Wire specifications and how to perform wiring
Connect the input from outside to terminals T1 and T2 of the transmission terminal block.



Wire specification	Stranded, non-shielded copper, 2-conductor
Gauge	AWG 18-2
Length	Max. 328 ft.
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 10 mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

11-4 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

12. TEST OPERATION

Refer to the section of "FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED." on page 4.

- Make sure if the service lids are closed on the indoor and outdoor units.
- After finishing the construction of refrigerant pipe, drain pipe and electric wire, conduct the check operation referring to the installation manual of the outdoor unit.
- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
  It any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
" [ ] " (under centralized control) is lit up	• There is a short circuit at the FORCED OFF terminals (T1, T2)
"U4" is lit up "UF" is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

- If "U3" is lit up, the malfunction code shows the check operation has not been performed yet.

12-1 HOW TO DIAGNOSE FOR MALFUNCTION

With the power on, it is possible to monitor the type of malfunction by looking at the malfunction code displayed in the remote controller.

If nothing is displayed in the remote controller, check the following items before attempting a diagnosis based on the malfunction code, as they might be a cause.

- Disconnected or incorrect wiring (between power supply and the outdoor unit, between the outdoor and indoor units, and between the indoor unit and the remote controller)
- Burnt out indoor or outdoor unit fuse
- " 88 " will be displayed for a few seconds on the remote controller immediately after the power is turned on.
  This display indicates that the remote controller is being checked to see whether it is ok or not, and does not indicate a malfunction.

Diagnose with the display on the liquid crystal display remote controller.

1. With the wired remote controller. (NOTE 1)
   When the operation stops due to trouble, operation lamp flashed, and " 👁 " and the malfunction code are indicated in the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the malfunction code list it case of group control, the unit No. is displayed so that the indoor unit No. with the trouble can be recognized. (NOTE 2).
2. With the wireless remote controller.
   (Refer also to the operation manual attached to the wireless remote controller)
   When the operation stops due to trouble. the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the malfunction code list looking for the malfunction code which can be found by following procedures. (NOTE 2)
   (1) Press the INSPECTION /TEST OPERATION button, " 👁 " is displayed and " 0 " flashes.
   (2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
   Number of beeps

3 short beeps	Perform all the following operations
1 short beep	Perform (3) and (6)
1 long beep	No trouble

   (3) Press the OPERATION MODE SELECTOR button and upper figure of the malfunction code flashes.
   (4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
   (5) Press the OPERATION MODE SELECTOR button and lower figure of the malfunction code flashes.
   (6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
   - A long beep indicate the malfunction code.

NOTE

1. In case wired remote controller. Press the INSPECTION / TEST OPERATION button on remote controller, " 👁 " starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code " 00 "(normal).
   The display changes from the inspection mode to the normal mode.

Order	Operation
(1)	Open gas side stop valve.
(2)	Open liquid side stop valve.
(3)	Electrify crank case heater for 6 hours.
(4)	Set to cooling with the remote controller and push " ON/OFF " button to start operation.
(5)	Push" 👁/TEST "button twice and operate in TEST OPERATION MODE for 3 minutes.
(6)	Push" SWING "button and confirm its operation.
(7)	Push" 👁/TEST "button and operate normally.
(8)	Confirm its function according to the operation manual.

12-2 MALFUNCTION CODE

- For places where the malfunction code is left blank, the "👁" indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Condensate level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked.
A7	Air flow direction adjust motor is fault.
A9	Drive for electronic expansion valve is fault.
AJ	Type set improper
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
C4	Sensor R2T for heat exchanger temperature is fault.
C5	Sensor R3T for heat exchanger temperature is fault.
C9	Sensor R1T for suction air temperature is fault.
CJ	Sensor for remote controller is fault.
	The remote controller thermistor does not function, but the system thermo run is possible.
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)
E5	Compressor motor lock malfunction
E7	Outdoor fan motor lock malfunction Outdoor fan instantaneous overcurrent malfunction
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
F6	The refrigerant is overcharged.
H9	Outdoor air thermistor faulty (outdoor unit)
J3	Discharge pipe thermistor faulty (outdoor unit)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
J9	Sensor for heat exchanger is fault.
JA	Sensor for high pressure is fault.
JC	Sensor for low pressure is fault.
L4	Overheated heat-radiating fin (outdoor)
	Inverter cooling defect.

L5	Instantaneous overcurrent (outdoor)
	Possible ground fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor)
	Compressor possibly locked.
LC	Transmission malfunction between the outdoor control units' inverters (outdoor)
P1	Open-phase (outdoor)
P3	PC board temperature sensor malfunction (outdoor)
P4	Heat-radiating fin temperature sensor malfunction (outdoor)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U2	Power source voltage malfunction
	Includes the defect in K1M.
U3	The check operation has not performed.
U4 UF	Transmission error (indoor unit - outdoor unit)
	Miswiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wire between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wire. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) The power is not supplied to outdoor unit.
U9	Same transmission for in / outdoor unit is fault.
UA	Miss setting for multi system
	Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)

16.3 FHQ36MVJU / FHQ42MVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this 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 danger, warning, caution and note symbols.

⚠ **DANGER** .....Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

⚠ **NOTE** .....Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas is heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or qualified personnel to carry out installation work. Do not try to install the air conditioner by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **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 injuries.
- **Carry out the specified installation work after considering strong winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment 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 no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wire and transmission wire, 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.

- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations :**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **Install drain pipe in order to ensure proper drainage and do the thermal insulation of the pipe in order to prevent condensate.**
  Improper drain pipe may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
  Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least 5 minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **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.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wire and transmission wire at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts especially the refrigerant piping.**
- Be sure to check the type of refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When selecting installation site, refer to the paper pattern.
- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.**
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

- Entrust installation to the place of purchase or a qualified person. Improper installation could lead to leak and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

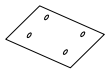
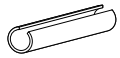
⚠ NOTE

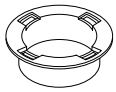
- Be sure to read this manual before installing the indoor unit.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain pipe	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	9 pcs.
Shape				

Name	(5) Paper pattern for installation	Insulation pipe cover	Sealing pad
Quantity	1 pc.	1 each	1 each
Shape		(6) For gas pipe  (7) For liquid pipe 	(8) Large  (9) Small 

Name	(10) Resin bush	(11) Insulating tube	
Quantity	1 pc.	3 pcs.	(Other) • Operation manual • Installation manual
Shape		For wire 	

2-2 OPTIONAL ACCESSORIES

- The remote controller are required for this indoor unit in Table 1.
- These are 2 types of remote controllers : wired and wireless. Select a remote controller according to customer request and install in an appropriate place.

Table 1

Remote controller	
Wired type	BRC1C71
Wireless type	BRC7E83

NOTE

- If you wish to use a remote controller that is not listed in “Table 1” on page 4, select a suitable remote controller after consulting catalogs and technical materials.

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

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

b. Items to be checked at time of delivery

∗ Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the instruction manual over to your customer?	

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

Please attach additional insulation pipe cover to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 3/8 in.. or more as insulation pipe cover.

(1) Select an installation site where the following conditions are fulfilled and that meets your customer’s approval.

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.

DANGER

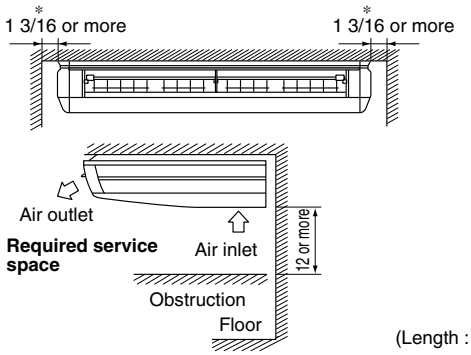
- Do not install unit in an area where flammable materials are present due to the risk explosion resulting in serious injury or death.

WARNING

- If the supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.

NOTE

- When a margin is in the space of the ∗ section, service and maintenance work will become still easier if it vacates 7 7/8 in. or more.



(Length : in.)

- Where pipe between indoor and outdoor units is possible within the allowable limit.
  (Refer to the installation manual for the outdoor unit.)
- Install the indoor and outdoor units, power wire and connecting wires at least 3.5 ft. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 3.5 ft. may not be sufficient enough to eliminate the noise.)

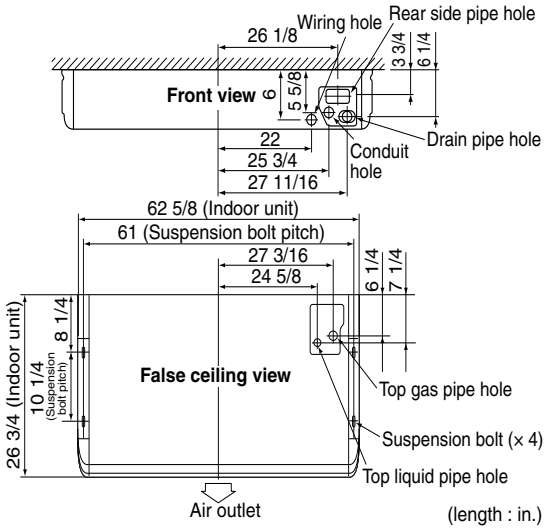
(2) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.
(Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

(3) This product may be installed on ceilings up to 10.6 ft. from the floor.

(4) A direction of installation.
- Refrigerant piping : the rear side, right side or upper part.
- Wiring : only the rear side.
- Drain piping : the rear right side or the right side.
  (As the rear left, installation is impossible.)

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of holes for indoor unit, suspension bolt position, piping and wiring.



(length : in.)

(2) Make holes for suspension bolts, refrigerant and drain pipe, and wire.
- Refer to the paper pattern for installation.
- Select the location for each of holes and open the holes in the ceiling.

(3) Remove the parts from the indoor unit.

(3-1) Detach the suction grille.
- Slide the locking knobs (×2) on the suction grille inward (direction of arrows) and lift upwards. **(Refer to Fig. 1)**
- With the suction grille open, remove the suction grille forward, holding on to the rear tabs (×2) on the suction grille. **(Refer to Fig. 2)**

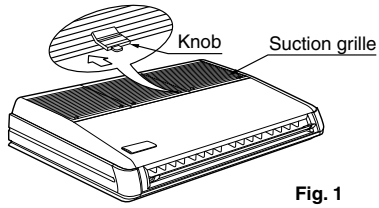


Fig. 1

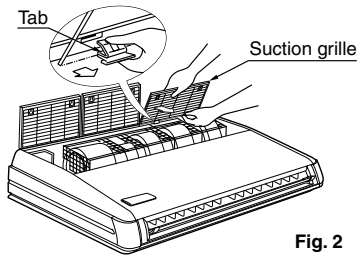


Fig. 2

(3-2) Remove the decoration panels (left and right) and the protection net.
- After removing the securing screws for the decoration panels (one each), pull them forward (in the direction of the arrow) and remove them. **(Refer to Fig. 3)**
- Remove the securing screws for the protection net. **(Refer to Fig. 3)**

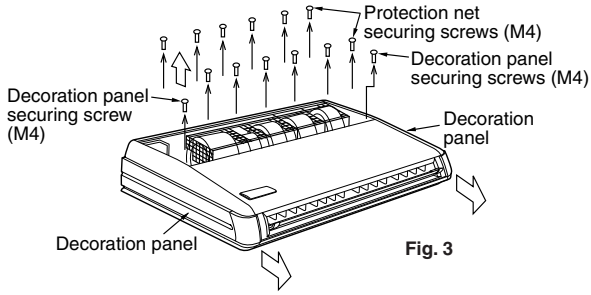


Fig. 3

- Raise one side of the protection net upwards (in the direction of the arrow (i)) and remove back (the arrow (ii)). **(Refer to Fig. 4, 5)**
- Take out the accessories.

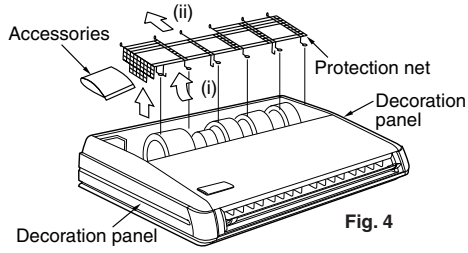


Fig. 4

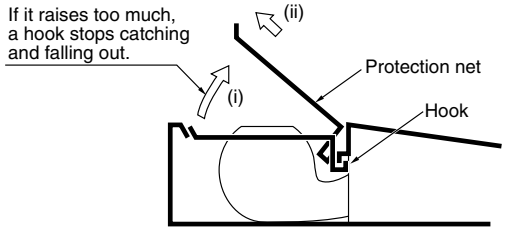


Fig. 5

(3-3) Remove the rear metal plate for transmission wire, remote controller wire and refrigerant pipe.

- It is necessary to drill the knock out hole in the removable part. Knock down several times with a punch and hammer and remove the removable part with pliers.
- When setting the refrigerant pipe to the rear side, remove the securing screws and the metal plate. **(Refer to Fig. 6)**.

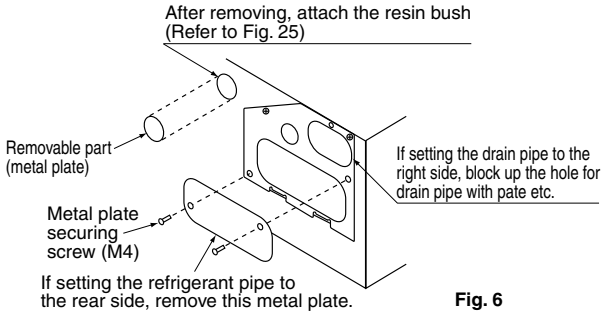


Fig. 6

(3-4) Remove the hanger brackets.

- Loosen the 2 bolts (M8) used to attach the hanger brackets which are on each side (4 places left and right) to within 3/8 in.. **(Refer to Fig. 7, 8)**
- After removing the securing screws (M5) for the hanger brackets which are on the rear side, pull the hanger brackets back (in the direction of the arrow), and remove them. **(Refer to Fig. 8)**

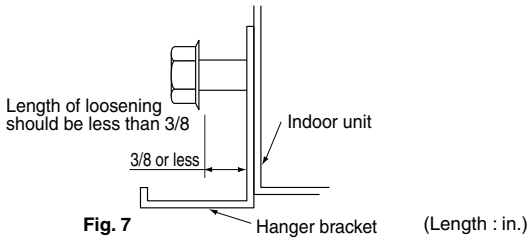


Fig. 7

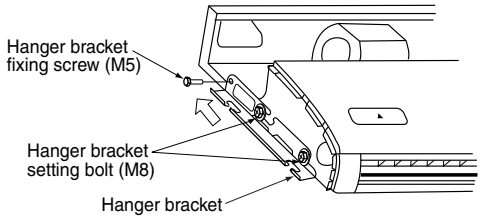


Fig. 8

(4) Attach the suspension bolts. (Use suspension bolts which are W3/8 or M8-M10 in size.)

- Adjust the distance of the suspension bolts from the ceiling in advance. **(Refer to Fig. 9)**

NOTE

- Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further.

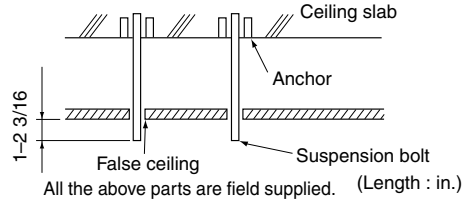


Fig. 9

5. INDOOR UNIT INSTALLATION

It may be easier to attach accessory parts before installing the indoor unit. Therefore, please also read the instruction manuals which are provided with the accessory parts.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

(1) Secure the hanger brackets to the suspension bolts. (Refer to Fig. 10)

NOTE

- To ensure they are safely secured, use the included washers, and secure them with double nuts to make sure.

(2) Lift the indoor unit's main body, insert the bolts (M8) for the hanger brackets into the attachment part on the hanger brackets, while sliding the main body from the front. (Refer to Fig. 11)

(3) Fasten the bolts for the hanger brackets (M8) securely in 4 places, left and right. (Refer to Fig. 11)

(4) Replace the screws for the hanger brackets which had been removed (M5) securely in 2 places left and right. This is necessary to prevent any forward and back slide in the main body of the indoor unit. (Refer to Fig. 11)

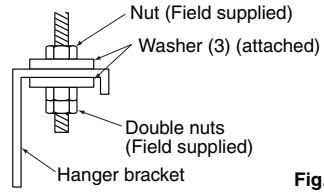


Fig. 10

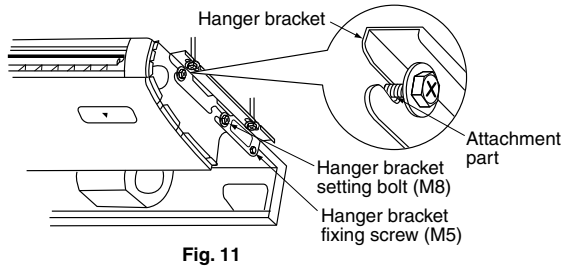


Fig. 11

(5) When hanging the indoor unit main body, be sure to use a level or a plastic tube with water in it to make sure the drain piping is set either level or slightly tilted, in order to ensure proper drainage. (Refer to Fig. 12)

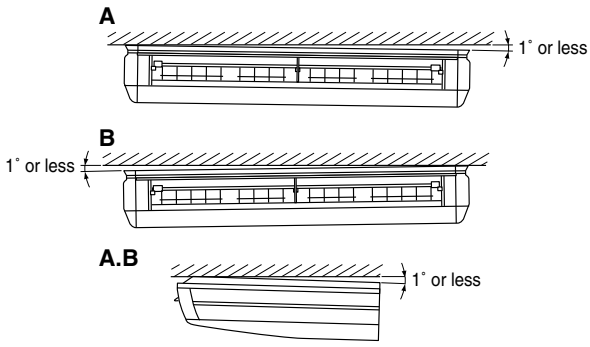


Fig. 12

A.When the drain piping is tilted to the right, or to the right and back.
Place it level, or tilt it slightly to the right or the back. (1° or less.)

B.When the drain piping is tilted to the left, or to the left and back.
Place it level, or tilt it slightly to the left or the back. (1° or less.)

CAUTION

- Setting the unit at an angle opposite to the drain piping might cause a water leakage.

6. REFRIGERANT PIPING WORK

DANGER

- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

CAUTION

- **Use a pipe cutter and flare suitable for the type of refrigerant.**
- **To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.**
- **Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.**

6-1 GENERAL INSTRUCTIONS

- **For refrigerant pipe of outdoor units, see the installation manual attached to the outdoor unit.**
- **Execute thermal insulation work completely on both sides of the gas pipe and the liquid pipe.**

  Otherwise, a water leakage can result sometimes.

  Be sure to use insulation that is designed for use with HVAC systems.

- **Also, in cases where the temperature and humidity of the refrigerant pipe sections might exceed 86°F or RH 80%, reinforce the thermal insulation. (3/4 in. or thicker)**

  Condensate may form on the surface of the insulation pipe cover.

- **Before refrigerant pipe work, check which type of refrigerant is used.**

  Proper operation is not possible if the types of refrigerant are not the same.

6-2 CONNECTING THE REFRIGERANT PIPE

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 13)**
- Refer to “Table 2” to determine the proper tightening torque.
- Refer to “Table 2” for the dimensions of flare shape.
- When connecting the flare nut, coat the flare section (inside) with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 14)**

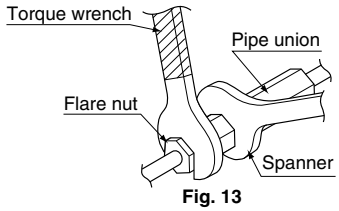


Fig. 13

CAUTION

- Be careful for oil not to adhere to any portions other than a flare part. If oil adhere to resin parts etc., there is a possibility of damaging by deterioration.

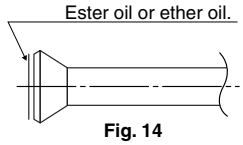
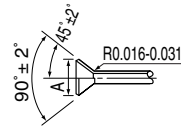


Fig. 14

NOTE

- Use the flare nut included with the unit main body.

Table 2

Pipe size (in.)	Tightening torque (ft. lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ3/8	24.1–29.4	0.504–0.520	
ϕ5/8	45.6–55.6	0.760–0.776	

CAUTION

- Overtightening may damage the flare and cause a refrigerant leakage.

Not recommended but in case of emergency

You must use a torque wrench, but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below :

Table 3

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ3/8	60 to 90 degrees	Approx. 7 7/8
ϕ5/8	30 to 60 degrees	Approx. 11 13/16

After the work is finished, make sure to check that there is no gas leak.

6-3 BRAZING REFRIGERANT PIPING

CAUTION

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

"Do not use flux when brazing refrigerant pipe. Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux."
(Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing local refrigerant pipe, nitrogen gas shall be blown through the pipe to expel air from the pipe.
  If you brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the pipe, and could cause system malfunction.
- When brazing the refrigerant pipe, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant pipe. Once this is done, connect the indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 2.9 psi with a pressure-reducing valve if brazing while inserting nitrogen into the pipe. **(Refer to Fig. 15)**

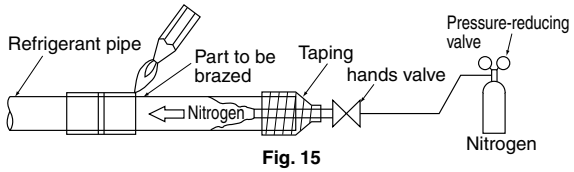


Fig. 15

DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

CAUTION

- Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensate or a burn if touched.

6-4 PIPING INSULATION

- Make absolutely sure to execute thermal insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the insulation pipe cover (6) and (7). (Fasten both ends with the clamps (4).) **(Refer to Fig. 16)**
- Wrap the small sealing pad (9) only around the insulation for the joints on the gas piping side. **(Refer to Fig. 16)**

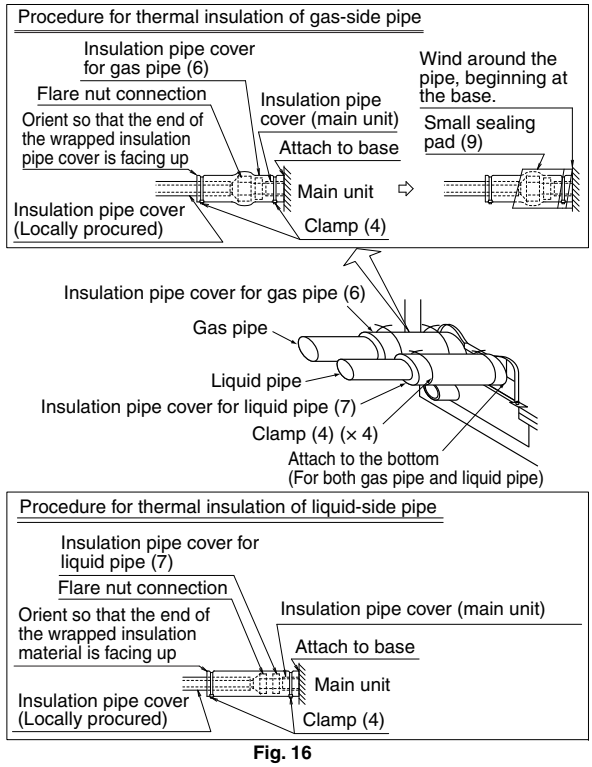


Fig. 16

(1) For piping facing back.

- Remove the rear metal plate for pipe. **(Refer to Fig. 17)**
- The figure of the direction of back shows when both the piping and drain pipe are set backward.
  When setting the piping to face up or right, attach the rear metal plate for refrigerant pipe and plug a hole for drain pipe. (See "4 PREPARATIONS BEFORE INSTALLATION" (3-3) on page 6)

(2) For piping facing up.

- When setting the piping to face up, the L-shaped branch pipe kit sold separately is required.
- Removing the top penetration lid and use the L-shaped branch pipe kit sold separately to set the pipe. **(Refer to Fig. 18, 19)**

(3) For piping facing right.

- Cut out a slit hole on the decoration panel (right) and set the pipe. **(Refer to Fig. 17)**

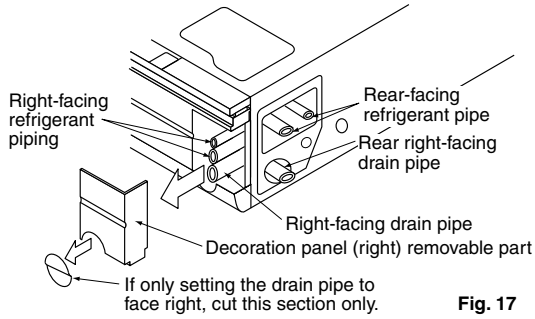


Fig. 17

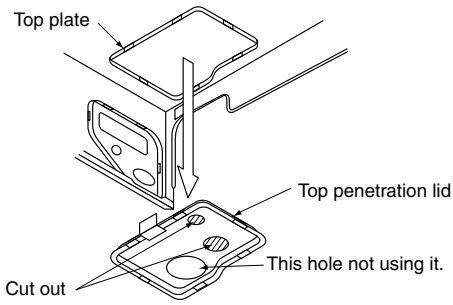


Fig. 18 (A figure from an inside bottom)

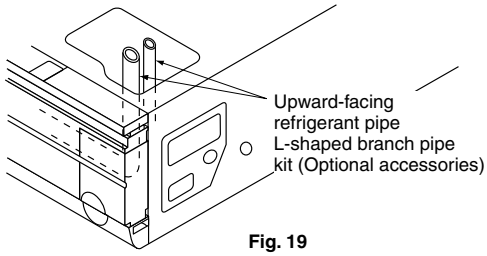


Fig. 19

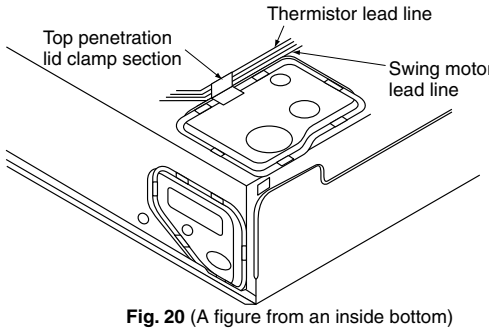


Fig. 20 (A figure from an inside bottom)

- When piping is complete, cut the removed penetration lid into the shape of the pipe using scissors and attach.
  As when before removing the top penetration lid, secure the lead lines for the swing motor and thermistor by passing them through the clamp section on the top penetration lid.
  (Refer to Fig. 18, 20)
- When doing this, block any gaps between the pipe penetration lid and the pipes using putty to prevent dust from entering the indoor unit.

7. DRAIN PIPING WORK

(1) Carry out the drain piping.

- Make sure piping provides proper drainage.
- You can select whether to bring the drain piping out from the rear right or right. For rear right-facing and right-facing situations, refer to "6. REFRIGERANT PIPING WORK" on page 7.
- Make sure the pipe diameter is the same or bigger than the branch piping. (vinyl-chloride piping, nominal diameter 1 in., external diameter 1 1/4 in.)
- Make sure the piping is short, has at least a 1/100 slope, and can prevent air pockets from forming. **(Refer to Fig. 21)**
- Do not allow any slack to gather in the drain pipe inside the indoor unit.
  (Slack in the drain pipe can cause the suction grille to break.)

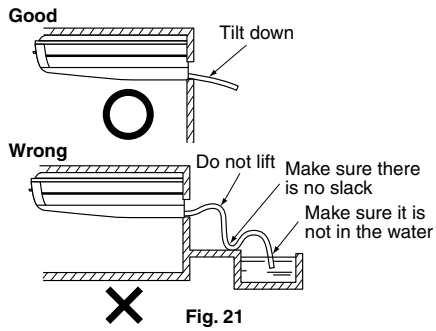


Fig. 21

CAUTION

- Water accumulating in the drain piping can cause the drain to clog.

- Be sure to use the drain pipe (1) and metal clamp (2).
  Also, insert the drain pipe completely into the drain socket, and securely attach the metal clamp bracket inside the gray tape area on the inserted tip of the drain pipe. **(Refer to Fig. 22)**
  Screw the screws on the metal clamp bracket until there is 5/32 in. left. (Pay attention to the direction of the attachment to prevent the metal clamp bracket from coming into contact with the suction grille.) **(Refer to Fig. 23)**

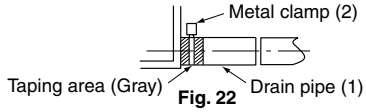


Fig. 22

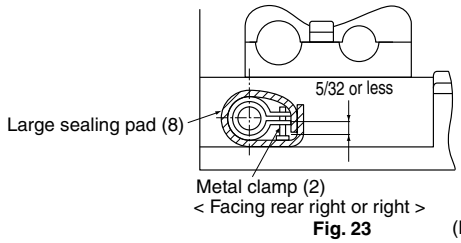


Fig. 23 (Length : in.)

- Insulate the metal clamp bracket and drain pipe from the bottom using the large sealing pad (8). **(Refer to Fig. 23)**
- Be sure to insulate all drain piping running indoors.

(2) Check to make sure the water flows smoothly after piping is complete.

- Slowly pour 600 ml of drain-checking water into the drain pan through the air outlet.

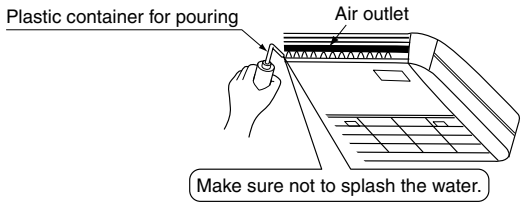


Fig. 24

CAUTION

- Drain piping connections :
  Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.

- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

8. ELECTRIC WIRING WORK

8-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also "Wiring diagram label" attached to the control box lid.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wires must be performed by an authorized electrician.
- An ground leakage circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.

DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

8-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FHQ24MVJU	60	208-230V	Max. 253V Min. 187V	1.3	15	130	1.0
FHQ30MVJU				1.3	15	130	1.0
FHQ36MVJU				1.4	15	130	1.1
FHQ42MVJU				1.4	15	130	1.1

MCA : Min. Circuit Amps (A); MFA : Max. Fuse Amps (A)
W: Fan Motor Rated Output (W); FLA : Full Load Amps (A)

8-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRES

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	Field fuses ⊣⊢	Size	Wire	Size
FHQ24MVJU	15A	Wire size must comply with local codes.	2-conductor Stranded, non-shielded copper	AWG 18-2
FHQ30MVJU				
FHQ36MVJU				
FHQ42MVJU				

Allowable length of transmission wire between indoor/outdoor units and between the indoor unit and the remote controller wire are as follows.

(1) Outdoor unit – Indoor unit : Max. 3280 ft.

(2) Indoor unit – Remote controller : Max. 1640 ft.

NOTE: Either a fuse or a breaker is acceptable.

9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

9-1 HOW TO CONNECT WIRES

CAUTION

- Even if the control box lid is removed, pull the remote controller wire, transmission wire and the power supply wire inside the unit using conduits for each, so that the wires do not come into contact with the opening section of the metal casing.
- Pass conduits through the wall and secure along with the refrigerant pipe in order to prevent external pressure being applied to transmission wire and power supply wire.
- To avoid short circuits in the electric parts box, be sure to apply the sealing material or putty (not included) to the wiring hole to prevent the infiltration of water, insects or other small creatures.
- Arrange the wires and fix a lid firmly so that the lid does not float during wiring work.
- Do not clamp remote controller wire and transmission wire together with power supply wire. Doing so may cause malfunction.
- Remote controller wire, transmission wire and power supply wire should be located at least 5 in. from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

<Method of wiring power supply, units and connecting remote controller wiring> (Refer to Fig. 26)

- Attaching the resin bush
  Attach the resin bush (10) for remote controller wiring.
- Installation of conduit
  Insert the conduit for power supply wire in the conduit hole, and fix it with the lock nut.

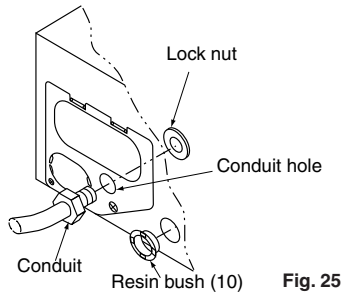


Fig. 25

- **Power supply wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid, match up the phases on the power supply terminal block inside (2P), and make the connections. After this is done, use the attached clamp (4) to bind wire between units to the anchor point. **(Refer to Fig. 27)**
- **Remote controller wire and transmission wire**
  Holding the control box lid, loosen the 2 securing screws, remove the control box lid.
  Thread the remote controller wire and transmission wire through the insulating tube (11) and secure with the clamp (4), and cut off the insulating tube (11) to suitable length. Pull the wires inside through resin bush and connect the wires to the transmission terminal block (6P) inside the control box. After connecting, use the clamp (4) to bind the remote controller wire together with the transmission wire to the anchor. **(Refer to Fig. 26, 27, 28)**

C: 3PN06240-2H

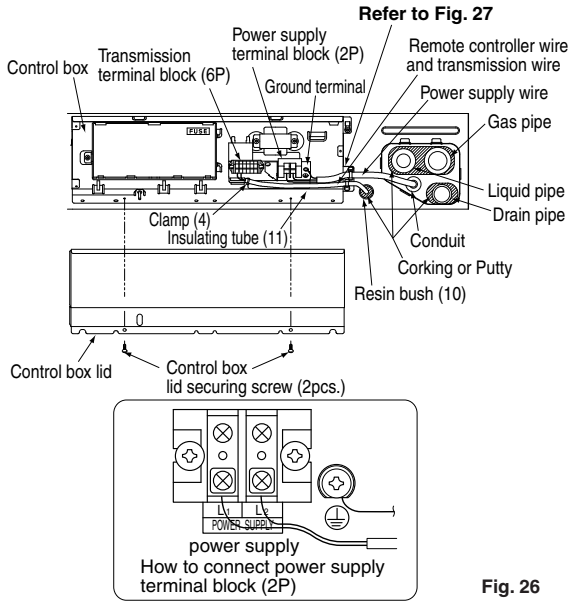


Fig. 26

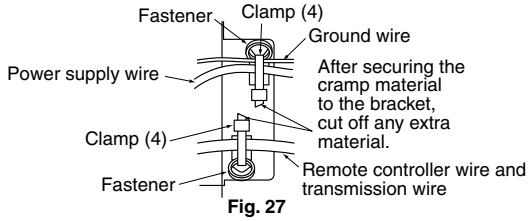


Fig. 27

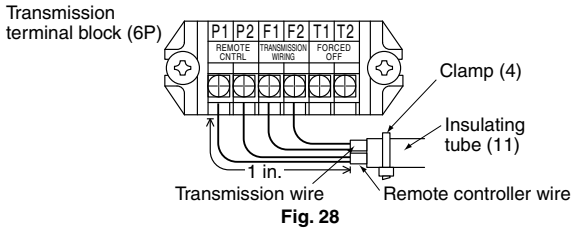


Fig. 28

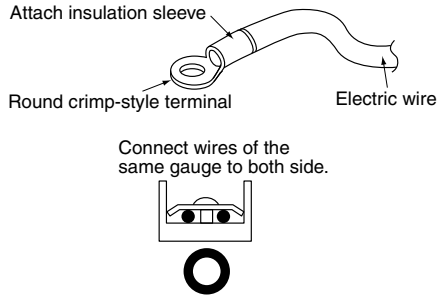
- In the insulating tube (11), it can let the remote controller wire and transmission wire pass to 2.

WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as to not obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.

NOTE

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.
   - Do not connect wires of different gauge to the same power supply terminal.
     (Looseness in the connection may cause overheating.)
   - Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 0.97 ft lbf ±10%)



2. Tightening torque for the terminal screws.
   - Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
   - If the terminal screws are tightened too hard, screws might be damaged.
   - Refer to the table below for the tightening torque of the terminal screws.

Table 4

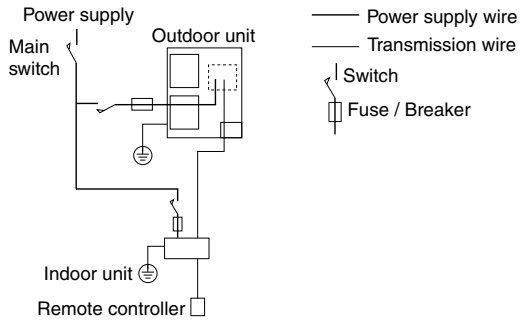
Terminal	Size	Tightening torque (ft-lbf)
Transmission terminal block (6P)	M3.5	0.58 – 0.72
Power supply terminal block (2P)	M4	0.87 – 1.06
Ground terminal	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire at least 5 in. away from power supply wire. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wire, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

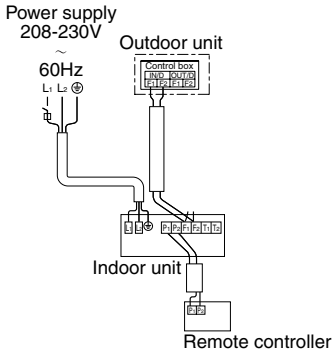
9-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

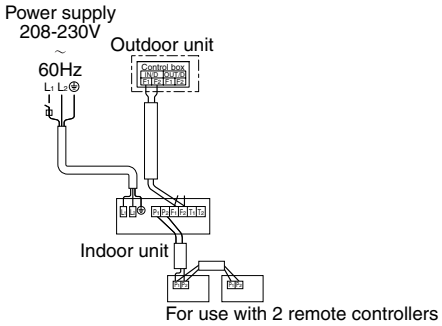
COMPLETE SYSTEM EXAMPLE



1. When using 1 remote controller for 1 indoor unit. (Normal operation)



2. When using 2 remote controllers for 1 indoor unit.



NOTE

1. All transmission wires except for remote controller wire are polarized and must match the terminal symbol.
2. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
3. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

10. ATTACHING THE SUCTION GRILLE, THE DECORATION PANELS AND THE PROTECTION NET

Once wiring is complete, firmly attach the control box lid, the suction grille, the decoration panels and the protection net in the order opposite to detachment.

- Attaching the protection net
  Attach the protection net from the way of the hook (i), fix 2 securing screws of the middle of the other side first (ii), then fix the remaining securing screws (iii).

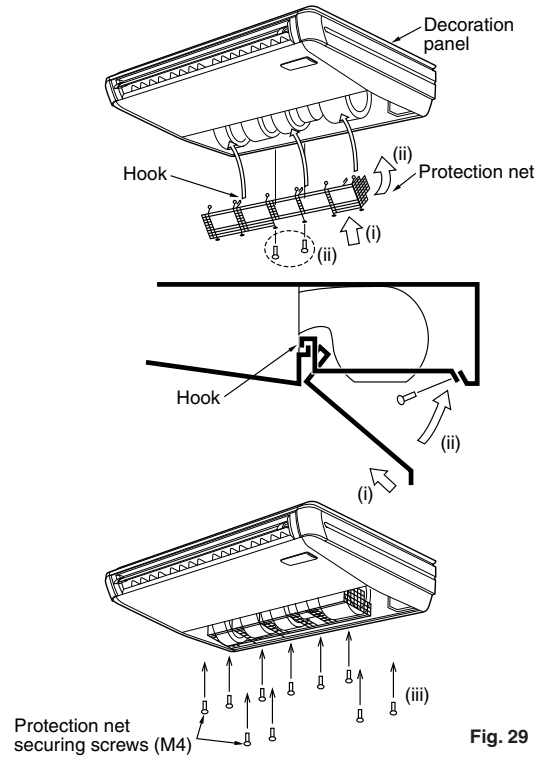


Fig. 29

11. FIELD SETTING

Make sure the control box lids are closed on the indoor and outdoor units, and turn on the power.
Field setting must be made from the remote controller in accordance with the installation manual.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting and operation, refer to the “FIELD SETTING” in the installation manual of the remote controller.

11-1 Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filer signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for air filter contamination-light.)

Table 5

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

<When using wireless remote controllers>

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

C: 3PN06240-2H

11-2 2 remote controllers control (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to "MAIN" and the other to "SUB".

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part.
The remote controller PC board is attached to the upper part of remote controller. **(Refer to Fig. 30)**

(2) Turn the MAIN/SUB changeover switch on one of the 2 remote controllers PC boards to "S". (Leave the switch of the other remote controllers set to "M".) **(Refer to Fig. 31)**

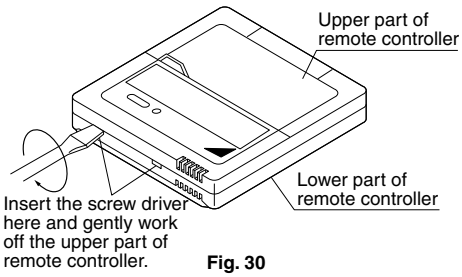


Fig. 30

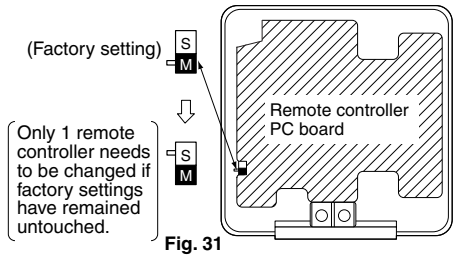


Fig. 31

Wiring Method
(See "8. ELECTRIC WIRING WORK" and "9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER" on page from 10 to 12.)

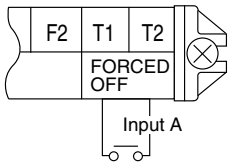
(3) Remove the control box lid.

(4) Add 2nd remote controller to the transmission terminal block (P1, P2) in the control box. (There is no polarity.) (Refer to Fig. 28 on page 11 and Table 4 on page 11)

11-3 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

See "FIELD SETTING" on page 12 for local settings.

(1) Wire specifications and how to perform wiring
- Connect the input from outside to terminals T1 and T2 of the transmission terminal block.



Wire specification	Stranded, non-shielded copper (2-conductor)
Gauge	AWG 18-2
Length	Max. 328 ft.
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 10 mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

11-4 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

12. TEST OPERATION

Refer to the section of "FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED." on page 4.

- Make sure if the service lids are closed on the indoor and outdoor units.
- After finishing the construction of refrigerant pipe, drain pipe and electric wire, conduct the check operation referring to the installation manual of the outdoor unit.
- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
  It any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
" [ ] " (under centralized control) is lit up	• There is a short circuit at the FORCED OFF terminals (T_1, T_2)
"U4" is lit up "UF" is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

- If "U3" is lit up, the malfunction code shows the check operation has not been performed yet.

12-1 HOW TO DIAGNOSE FOR MALFUNCTION

With the power on, it is possible to monitor the type of malfunction by looking at the malfunction code displayed in the remote controller.

If nothing is displayed in the remote controller, check the following items before attempting a diagnosis based on the malfunction code, as they might be a cause.

- Disconnected or incorrect wiring (between power supply and the outdoor unit, between the outdoor and indoor units, and between the indoor unit and the remote controller)
- Burnt out indoor or outdoor unit fuse
- " 88 " will be displayed for a few seconds on the remote controller immediately after the power is turned on. This display indicates that the remote controller is being checked to see whether it is ok or not, and does not indicate a malfunction.

Diagnose with the display on the liquid crystal display remote controller.

1. With the wired remote controller. (NOTE 1)
   When the operation stops due to trouble, operation lamp flashed, and " " and the malfunction code are indicated in the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the malfunction code list it case of group control, the unit No. is displayed so that the indoor unit No. with the trouble can be recognized. (NOTE 2).
2. With the wireless remote controller.
   (Refer also to the operation manual attached to the wireless remote controller)
   When the operation stops due to trouble. the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the malfunction code list looking for the malfunction code which can be found by following procedures. (NOTE 2)
   (1) Press the INSPECTION /TEST OPERATION button, " " is displayed and " 0 " flashes.
   (2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
   Number of beeps

3 short beeps	Perform all the following operations
1 short beep	Perform (3) and (6)
1 long beep	No trouble

   (3) Press the OPERATION MODE SELECTOR button and upper figure of the malfunction code flashes.
   (4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
   (5) Press the OPERATION MODE SELECTOR button and lower figure of the malfunction code flashes.
   (6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
   - A long beep indicate the malfunction code.

NOTE

1. In case wired remote controller. Press the INSPECTION / TEST OPERATION button on remote controller, " " starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code " 00 "(normal).
   The display changes from the inspection mode to the normal mode.

Order	Operation
(1)	Open gas side stop valve.
(2)	Open liquid side stop valve.
(3)	Electrify crank case heater for 6 hours.
(4)	Set to cooling with the remote controller and push " ON/OFF " button to start operation.
(5)	Push" /TEST "button twice and operate in TEST OPERATION MODE for 3 minutes.
(6)	Push" SWING "button and confirm its operation.
(7)	Push" /TEST "button and operate normally.
(8)	Confirm its function according to the operation manual.

12-2 MALFUNCTION CODE

- For places where the malfunction code is left blank, the " " indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Condensate level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked.
A7	Air flow direction adjust motor is fault.
A9	Drive for electronic expansion valve is fault.
AJ	Type set improper
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
C4	Sensor R2T for heat exchanger temperature is fault.
C5	Sensor R3T for heat exchanger temperature is fault.
C9	Sensor R1T for suction air temperature is fault.
CJ	Sensor for remote controller is fault.
	The remote controller thermistor does not function, but the system thermo run is possible.
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)
E5	Compressor motor lock malfunction
E7	Outdoor fan motor lock malfunction Outdoor fan instantaneous overcurrent malfunction
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
F6	The refrigerant is overcharged.
H9	Outdoor air thermistor faulty (outdoor unit)
J3	Discharge pipe thermistor faulty (outdoor unit)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
J9	Sensor for heat exchanger is fault.
JA	Sensor for high pressure is fault.
JC	Sensor for low pressure is fault.
L4	Overheated heat-radiating fin (outdoor)
	Inverter cooling defect.

L5	Instantaneous overcurrent (outdoor)
	Possible ground fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor)
	Compressor possibly locked.
LC	Transmission malfunction between the outdoor control units' inverters (outdoor)
P1	Open-phase (outdoor)
P3	PC board temperature sensor malfunction (outdoor)
P4	Heat-radiating fin temperature sensor malfunction (outdoor)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly preset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U2	Power source voltage malfunction
	Includes the defect in K1M.
U3	The check operation has not performed.
U4 UF	Transmission error (indoor unit – outdoor unit) Miswiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wire between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wire. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.) The power is not supplied to outdoor unit.
U9	Same transmission for in / outdoor unit is fault.
UA	Miss setting for multi system
	Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)

16.4 FAQ18PVJU / FAQ24PVJU

DAIKIN

SPLIT SYSTEM Air Conditioner Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation.
Please instruct the customer on how to operate the unit and keep it maintained.
Also, inform customers that they should store this 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 danger, warning, caution and note symbols.

DANGER .....Indicates an imminently hazardous situation which,if not avoided, will result in death or serious injury.

WARNING .....Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION .....Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be sued to alert against unsafe practices.

NOTE .....Indicates situation that may result in equipment or property-damage-only accidents.

⚠ DANGER

- **Do not ground the unit to water pipes, telephone wires or lightning rods as incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.**
- **Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.**
- **Refrigerant gas is heavier than air and displaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **If the refrigerant gas leaks during installation, ventilate the area immediately.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **After completing the installation work, check that the refrigerant gas does not leak.**
  Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.
- **Safely dispose of the packing materials.**
  Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

⚠ WARNING

- **Ask your dealer or an authorized personnel to carry out installation work. Do not try to install the unit by yourself.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Perform installation work in accordance with this installation manual.**
  Improper installation may result in water leakage, electric shocks or fire.
- **Be sure to use only the specified accessories and parts for installation work.**
  Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.
- **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 injuries.
- **Carry out the specified installation work after taking account of strong winds, typhoons or earthquakes.**
  Improper installation work may result in the equipment 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 an authorized 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 no external forces act on the terminal connections or wires.**
  Improper connections or installation may result in fire.
- **When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the electric parts box lid can be securely fastened.**
  Improper positioning of the electric parts box lid may result in electric shocks, fire or the terminals overheating.
- **Before touching electrical parts, turn off the unit.**
- **Do not touch the switch with wet fingers.**
  Touching a switch with wet fingers can cause electric shock.
- **Be sure to install an earth leakage breaker.**
  Failure to install an earth leakage breaker may result in electric shocks, or fire.
- **Do not install the air conditioner in the following locations:**
  (a) where a mineral oil mist or an oil spray or vapor is produced, for example in a kitchen. Plastic parts may deteriorate and fall off or result in water leakage.

(b) where corrosive gas, such as sulfurous acid gas, is produced. Corroding copper pipes or soldered parts may result in refrigerant leakage.
(c) near machinery emitting electromagnetic waves. Electromagnetic waves may disturb the operation of the control system and result in a malfunction of the equipment.
(d) where flammable gases may leak, where there are carbon fiber or ignitable dust suspensions in the air, or where volatile liquids such as thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

- **Heat exchanger fins are sharp enough to cut.**
  To avoid injury wear gloves to cover the fins when working around them.
- **Refrigerant pipes may be very hot or very cold during or immediately after operation.**
  Touching them could result in burns or frostbite. To avoid injury give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.

⚠ CAUTION

- **While following the instructions in this installation manual, insulate piping in order to prevent condensation.**
  Improper piping insulation may result in water leakage and property damage.
- **Be very careful about product transportation.**
  Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
- **Do not turn off the power immediately after stopping operation.**
  Always wait at least five minutes before turning off the power. Otherwise, water leakage and trouble may occur.
- **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.

⚠ NOTE

- **Install the indoor and outdoor units, power supply wiring and connecting wires at least 3.5ft. away from televisions or radios in order to prevent image interference or noise.**
  (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)
- **Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps. (inverter or rapid start types)**
  Install the indoor unit as far away from fluorescent lamps as possible.
- **Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.**

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the packing case, be sure to lift it by the four hanger brackets. Avoid putting any pressure on other parts, especially, horizontal flaps, the refrigerant piping, drain piping, and other resin parts.**
- Be sure to remove a cushion (corrugated paper) located between the heat exchanger and the right air filter.
- Be sure to check the type of R410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.

- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- When using the wireless remote controller, refer to the installation manual attached to the wireless remote controller.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories.**
    Also in vehicles or vessels.
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment. If installed as a household appliance it could cause electromagnetic interference.

⚠ WARNING

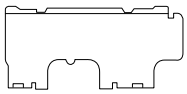
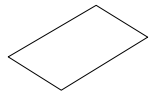
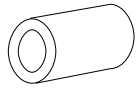
- Entrust installation to the place of purchase or an authorized serviceman. Improper installation could lead to leaks and, in worse cases, electric shock of fire.
- Use of unspecified parts could lead to the unit falling, leaks and, in worse cases, electric shock or fire.

⚠ NOTE

- Be sure to read this manual before installing the indoor unit.

2-1 ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Installation panel	(2) Attachment screws for the installation panel	(3) Paper pattern for installation	(4) Insulating tape
Quantity	1 set	9 pcs.	1 pc.	1 pc.
Shape		 M4 × 25L		

Name	(5) Clamp	(6) Securing screws	(7) Insulating tube	
Quantity	1 large 4 small	2 pcs.	1 long 1 short	
Shape		 M4 × 12L		(Other) • Operation manual • Installation manual

2-2 OPTIONAL ACCESSORIES

Remote controller type	Model
Wired type	BRC1C71
Wireless type	BRC7E818

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

1. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may be dangerous at electric leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

2. Items to be checked at time of delivery

* Also review the “SAFETY CONSIDERATIONS”

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the operation manual over to your customer?	

2-3 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

(1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.

- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where the wall is strong enough to bear the indoor unit weight.
- Where sufficient clearance for installation and maintenance can be ensured. **(Refer to Fig. 1 and Fig. 2)**
- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.

- Where the wall is not significantly tilted.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)
- Install the indoor and outdoor units, power supply wiring and connecting wires at least 3.5ft. away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 3.5ft. may not be sufficient enough to eliminate the noise.)
- Where the cool (warm) air reaches all across the room.

[Space required for installation (in.)]

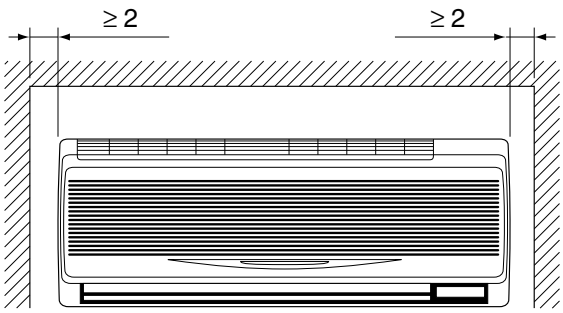


Fig. 1

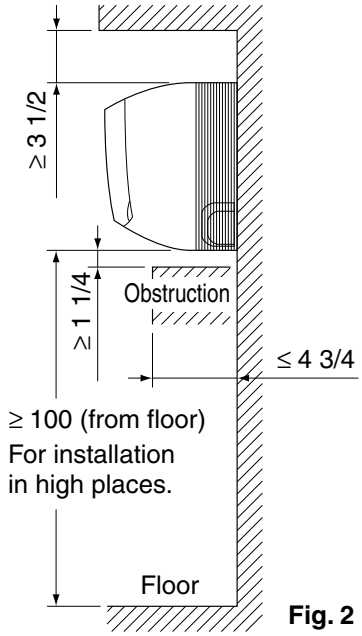


Fig. 2

(2) Consider whether the place where the unit will be installed can support the full weight of the unit, and reinforce it with boards and beams, etc. if needed before proceeding with the installation. Also, reinforce the place to prevent vibration and noise before installing.
(The installation pitch can be found on the paper pattern for installation (3), so refer to it when considering the necessity for reinforcing the location.)

(3) The indoor unit may not be directly installed on the wall. Use the attached installation panel (1) before installing the unit.

⚠ DANGER

- Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.

⚠ WARNING

- If the supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.

4. INDOOR UNIT INSTALLATION

• Use only accessories and parts which are of the designated specification when installing.

⚠ CAUTION

• Install so that the unit does not tilt to either side or forward.
• Do not hold the unit by the horizontal flaps when lifting it. (This may damage the horizontal flaps.)

(1) Open the piping through-hole.

• The refrigerant pipe and drain pipe can be passed out in one of 5 directions: left, bottom-left, back-left, bottom-right, and back-right. **(Refer to Fig. 3)**
• Using the paper pattern for installation (3), choose where to pass the piping out and open a through-hole (ϕ3 1/8") in the wall.
Open the hole so that there is a downward slope for the drain piping. (See " 6.DRAIN PIPING WORK ")

(2) Remove the installation panel (1) from the unit and attach to the wall.

(The installation panel is temporarily attached to the unit with a screw. (In case of 12 type))
(Refer to Fig. 3)

(a) Check the location for the hole using the included paper pattern for installation (3).
• Choose a location so that there is at least a 3 1/2" gap between the ceiling and the main unit.

(b) Temporarily attach the installation panel (1) at the temporary-securing position on the paper pattern for installation (3) and use a level to make sure the drain hose is either level or tilted slightly downward.

(c) Secure the installation panel (1) to the wall using either screws or bolts.
• If using the attachment screws for the installation panel (2), attach using at least 4 screws on either side (for a total of 9 screws) of the recommended installation cleat position on the included paper pattern for installation (3).
• If using bolts, attach using a M8 - M10 bolt or equivalent (for a total of 2 bolts) on either side.
• If dealing with concrete, use commercially available foundation bolts (M8 - M10 or equivalent).

(3) If using the left, bottom-left, or bottom-right positions for the piping, cut out the through-hole for the piping in the front grille. (Refer to Fig. 4)

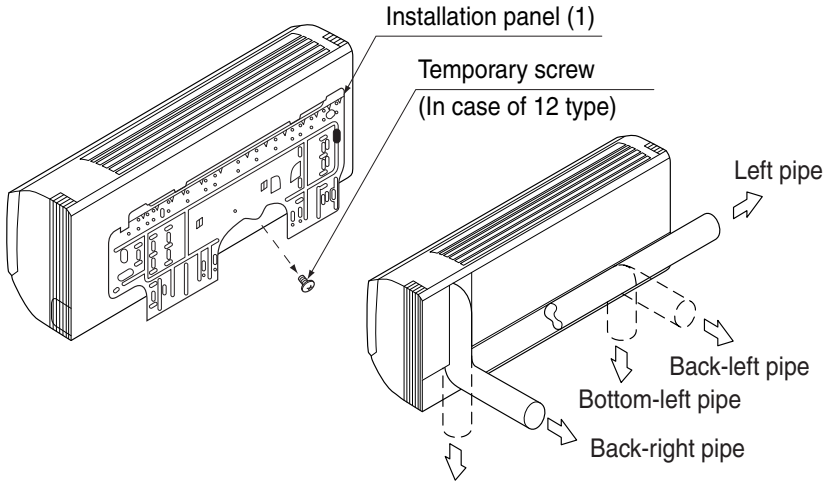


Fig. 3

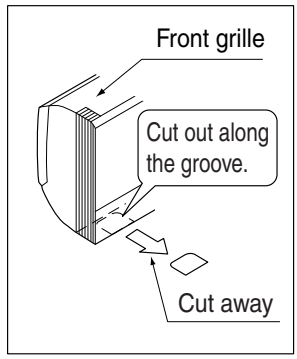


Fig. 4

(4) Remove the front panel and the service lid. (Refer to Fig. 5)

< How to remove the front panel and service lid >

(1) Open the front panel to the point where it stops.

(2) Push the axes on either side of the front panel towards the center of the main unit and remove. (You can also remove it by sliding the front panel either to the left or right and pulling it forward.)

(3) Remove the screw from the service lid and pull the handle forward.

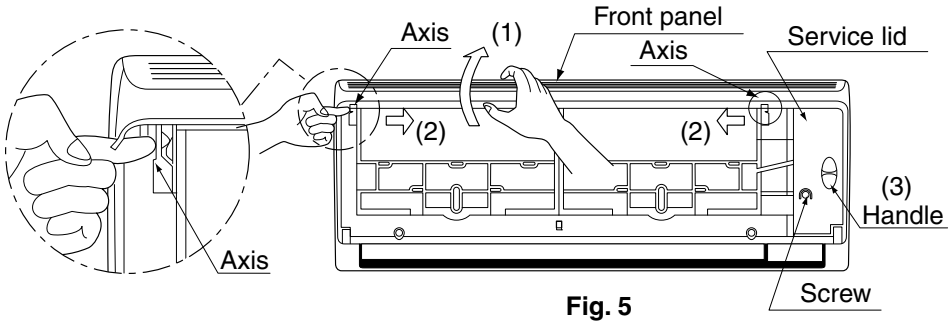


Fig. 5

(5) Point the pipe in the direction it will be passed out.

For bottom-right and back-right piping (Refer to Fig. 6)

• Wrap the drain hose and the refrigerant piping together with the insulating tape (4) so that the drain hose is below the refrigerant piping.

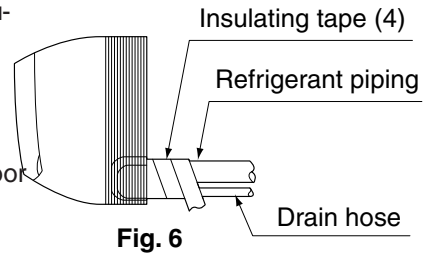


Fig. 6

For left, bottom-left, and back-left piping

Remove the front grille. **(Refer to Fig. 7)**

< How to remove the front grille >

Remove the front grille as described below when securing the indoor unit with screws or when attaching Optional Accessories (wireless remote controller, adapter PC board, etc.).

(1) Remove the front panel.

(2) Remove the screws (3 places) securing the front grille.

(3) Remove the tabs (3 places) securing the front grille by pushing them in the direction of the arrows.

(4) Making sure not to catch the horizontal flaps, remove the front grille by pulling in the direction of the arrow

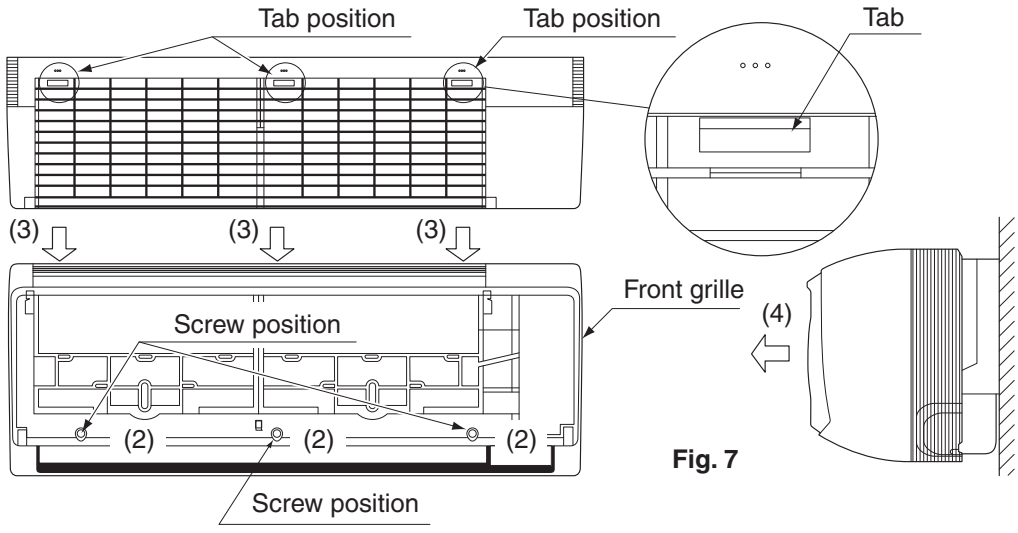


Fig. 7

- Remove the drain plug, the insulation tube, and the drain hose from the drain pan and replace. **(Refer to Fig. 8)**
- Connect the local refrigerant piping ahead of time, matching it to the liquid pipe and gas pipe marks engraved on the installation panel (accessory) (1).

< Replacing the drain hose and drain plug >

(1) Remove the drain plug and insulation tube.
(2) Remove the drain hose and replace onto the left side.
(3) Replace the drain plug and the insulation tube onto the right side.

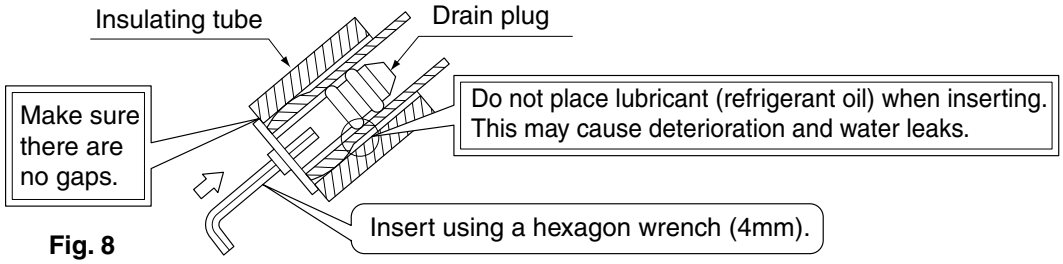


Fig. 8

(6) Hook the indoor unit onto the installation panel. (Refer to Fig. 9)

- Placing buffering material between the wall and the indoor unit at this time will make work easier.

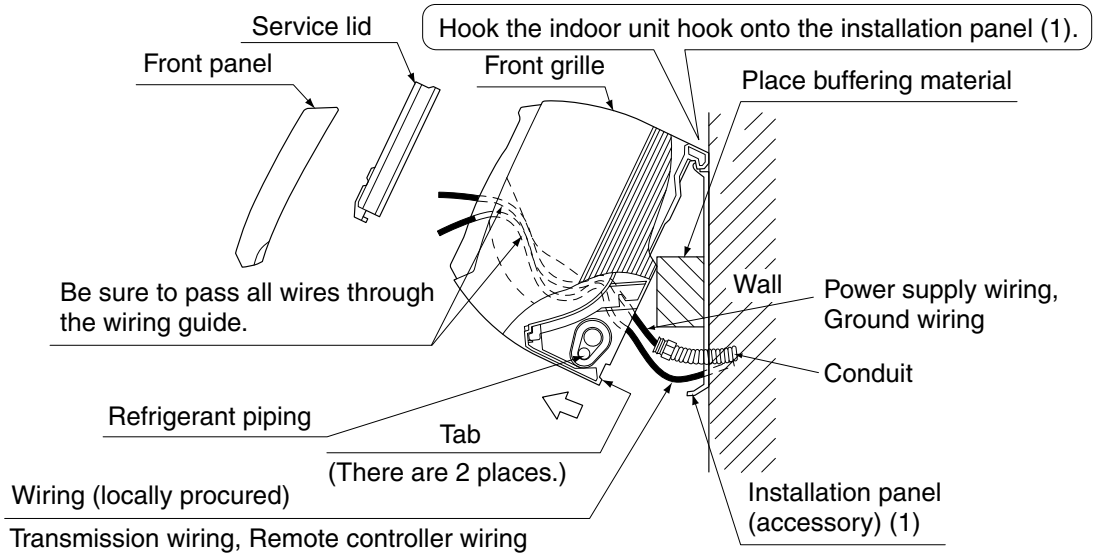


Fig. 9

For bottom-right and back-right piping

- Pass the drain hose and the refrigerant piping to the wall.

(7) Pass power supply wiring and ground wiring threaded through conduit (For connecting the conduit to the unit, see "8-1 HOW TO CONNECT WIRINGS"), and remote controller wiring through the wiring guide in through the back of the indoor unit and to the front.

(8) Connect the piping. (See "5.REFRIGERANT PIPING WORK" and Fig. 10)

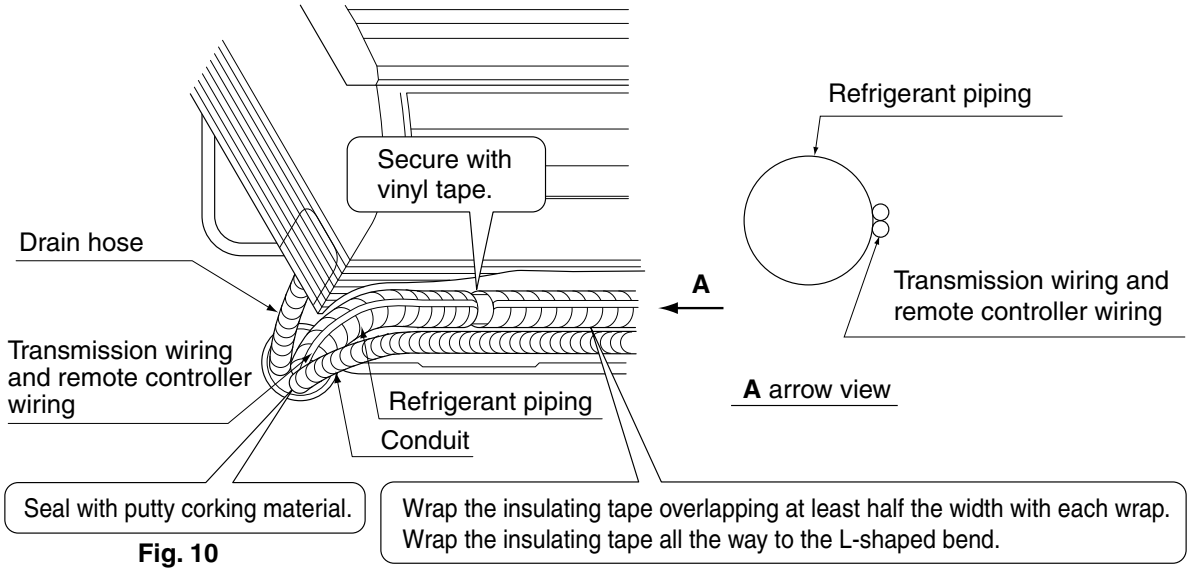


Fig. 10

- Seal the piping through-hole with putty corking material.

(9) Push on both bottom edges of the indoor unit using both hands and hook the tab on the back of the indoor unit onto the installation panel (1). (Refer to Fig. 9)

- At this time remove the buffering material placed in step (6).
- Make sure power supply wiring, transmission wiring, ground wiring and remote controller wiring are not caught inside the indoor unit.

■ **When screwing in the indoor unit**

- Remove the front grille. **(Refer to Fig. 7)**
- Secure the indoor unit to the installation panel (1) with the securing screws (6). **(Refer to Fig. 11)**

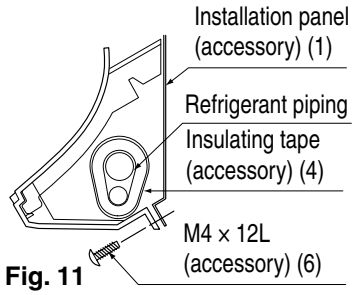


Fig. 11

5. REFRIGERANT PIPING WORK

〈For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.〉
〈Execute heat insulation work completely on both sides of the gas piping and the liquid piping. Otherwise, a water leakage can result sometimes.〉
Be sure to use insulation that is designed for use with HVAC systems.

〈Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 86°F or RH80 %, reinforce the refrigerant insulation. (13/16" or thicker) Condensation may form on the surface of the insulating material.〉
〈Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.〉

⚠ DANGER

- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan, heater, stove or cooking device. Exposure to this gas could result in severe injury or death.

NOTE

- Use a pipe cutter and flare suitable for the type of refrigerant.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc.
- If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

- The outdoor unit is charged with refrigerant.
- Use copper alloy seamless pipes.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 12)**
- Refer to “Table 1” for the dimensions of flare.
- When connecting the flare nut, coat the flare section (inside) with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 13)**

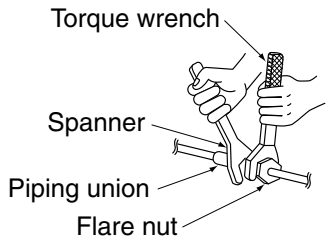


Fig. 12

CAUTION

- Over-tightening may cause the flare nuts to crack or the refrigerant to leak.
- Use the flare nut included with the unit.

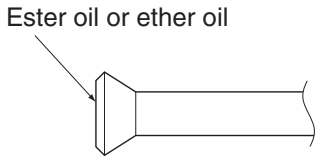
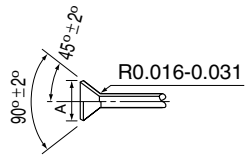


Fig. 13

- Refer to Table 1 for tightening torque.

Table 1

Pipe size	Tightening torque (ft-lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ 3/8”	24.1 – 29.4	0.504 – 0.520	
ϕ 5/8”	45.6 – 55.6	0.760 – 0.776	

Not recommended but in case of emergency

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

After the work is finished, make sure to check that there is no gas leak.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Table 2

Pipe size (in.)	Further tightening angle	Recommended arm length of tool (in.)
ϕ 3/8”	60 to 90 degrees	Approx. 7-7/8”
ϕ 5/8”	30 to 60 degrees	Approx. 11-13/16”

⚠ CAUTION

- CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING
  "Do not use flux when brazing refrigerant piping. Therefore, use the phosphor copper brazing filter metal (BCuP) which does not require flux."
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. If the flux contains fluorine, it will damage the refrigerant oil.)

- When brazing the refrigerant piping, only begin brazing after having carried out nitrogen substitution (NOTE 1) or while inserting nitrogen into the refrigerant piping (NOTE 2). Once this is done, connect the indoor unit with a flared or a flanged connection.

⚠ DANGER

- Use of oxygen may cause an explosion resulting in serious injury or death. Only use nitrogen gas.

⚠ NOTE

1. Refer to the "Manual for Multi Installation for Buildings" for directions on how to carry out nitrogen substitution. (Inquire with your dealer.)
2. Nitrogen should be set to 2.9 psi with a pressure-reducing valve if brazing while inserting nitrogen into the piping. **(Refer to Fig. 14)**

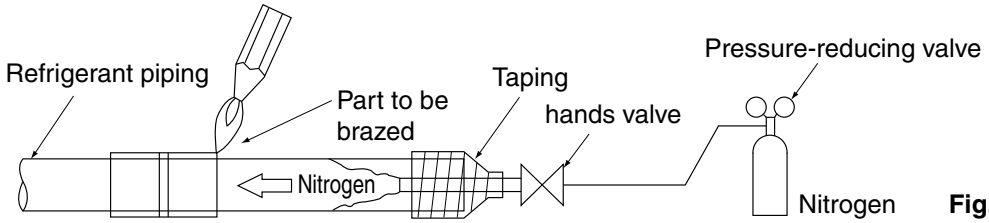


Fig. 14

- After checking for gas leaks, be sure to insulate the pipe connections using the supplementary piping insulation tubing and insulating tape (4). The insulating tape (4) should be wrapped from the L-shaped bend all the way to the end inside the unit. **(Refer to Fig. 15)**

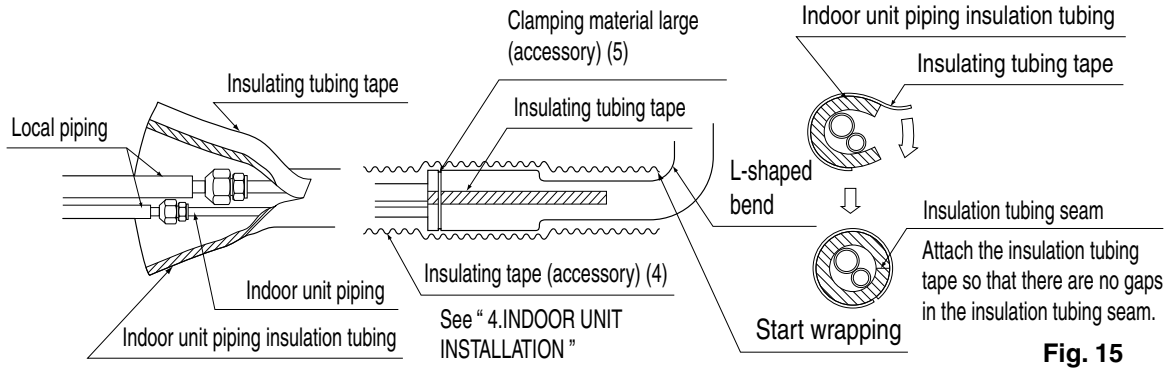


Fig. 15

⚠ CAUTION

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

6. DRAIN PIPING WORK

(1) Install the drain piping. (Refer to Fig. 16)

- The drain pipe should be short with a downward slope and should prevent air pockets from forming.
- Watch out for the points in the figure 16 when performing drain work.

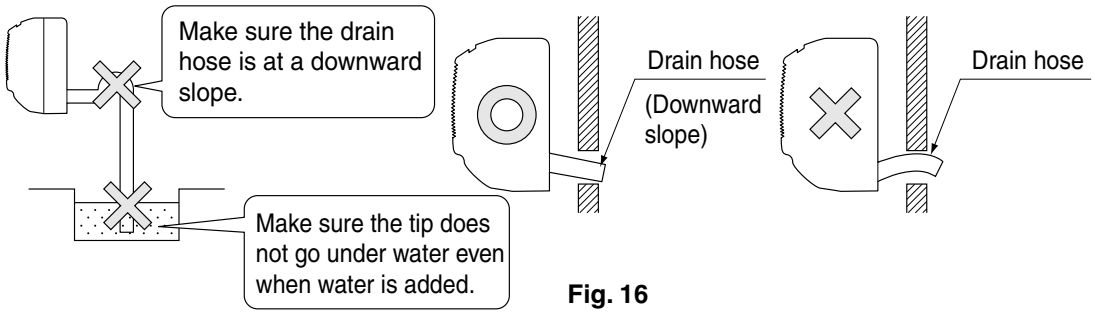


Fig. 16

- When extending the drain hose, use a commercially available drain extension hose, and be sure to insulate the extended section of the drain hose which is indoors. **(Refer to Fig. 17)**

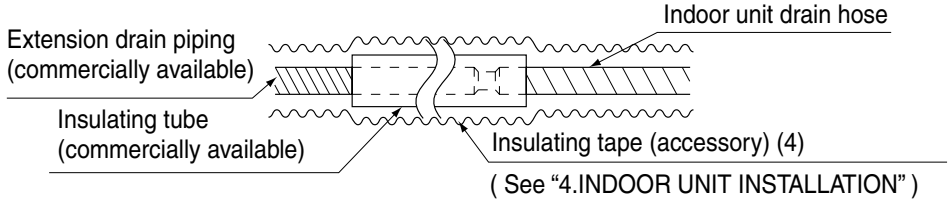


Fig. 17

- Make sure the diameter of the extension drain piping is the same as the indoor unit drain hose (hard vinyl chloride, I.D. 9/16”) or bigger.
- In case of converging multiple drain pipes, install them referring to Fig. 18.
- Select diameter of drain piping which adapts to the capacity of the unit connected.

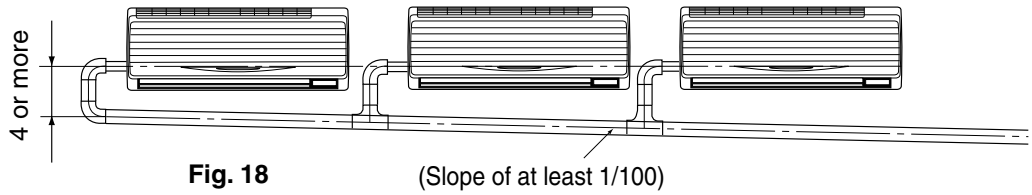


Fig. 18

(2) Make sure the drain works properly.

- After drain work is complete, perform a drain check by opening the front panel, **removing the air filter**, pouring water into the drain pan, and making sure water flows smoothly out of the drain hose. **(Refer to Fig. 19)**

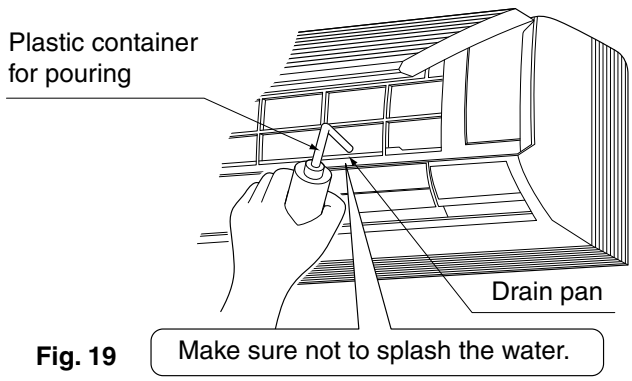


Fig. 19

⚠ CAUTION

- Drain piping connections
  Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
  Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

7. ELECTRIC WIRING WORK

7-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also “WIRING DIAGRAM” attached to the unit.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal block wiring to the outdoor unit and Branch Selector unit is properly matched. If wiring and piping outdoor unit and indoor unit are mismatched, the system may cause a malfunction.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

7-2 ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	W	FLA
FAQ18PVJU	60	208-230	Max. 253 Min. 187	0.4	15	43	0.3
FAQ24PVJU				0.6	15	43	0.5

MCA: Min. Circuit Amps (A); MFA: Max. Fuse Amps (A)
W: Fan Motor Rated Output (W); FLA: Full Load Amps (A)

7-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	Fuse / breaker ⊟	Size	Wire	Size
FAQ18PVJU	15A	Size must comply with local codes.	2 conductor stranded non-shielded copper	AWG18-2
FAQ24PVJU				

- Allowable length of transmission wiring and remote controller wiring are as follows.
  (1) Outdoor unit - Indoor unit:Max.3280ft. (Total wiring length: 6560ft.)
  (2) Indoor unit - Remote controller:Max.1640ft.
- Insulated thickness: 1/16” or more.

NOTE: Either a fuse or a breaker is acceptable.

8. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

8-1 HOW TO CONNECT WIRINGS

• Conduit for power supply wiring
Unscrew and remove the conduit mounting plate from the electric parts box. **(Refer to Fig. 20)**
Fix a conduit to the plate with a lock nut and reattach them at original position.

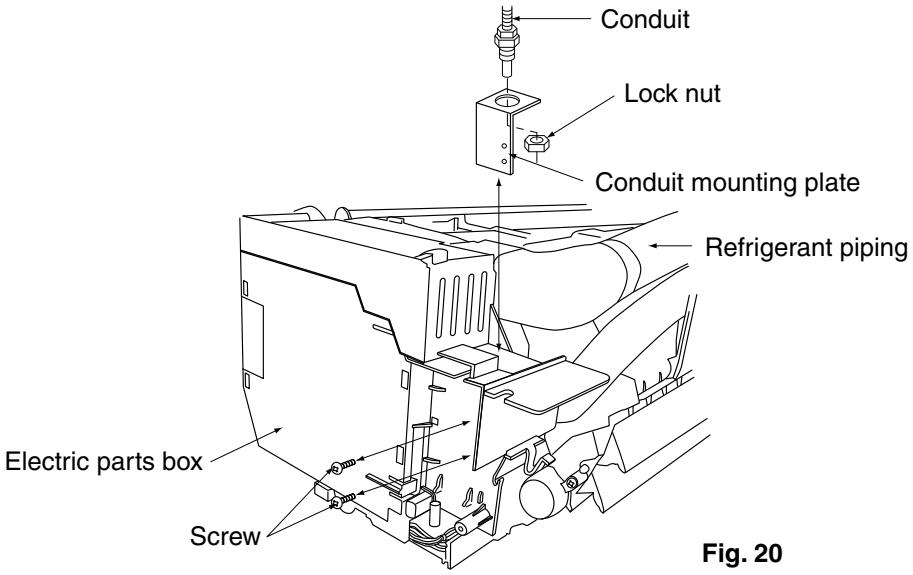


Fig. 20

• Power supply wiring and ground wiring
Unscrew and remove the service lid.
Thread the power supply wiring and ground wiring through the included insulating tube (short) (7) and secure them with the included clamp (small) (5). **(Refer to Fig. 21)**
Connect the power supply wiring and ground wiring to the power supply terminal block (3P).
When doing this, firmly secure using the included clamp (small) (5) according to the figure.
(Refer to Fig. 22)

• Transmission wiring and remote controller wiring
Unscrew and remove the service lid.
Thread the remote controller wiring and transmission wiring through the included insulating tube (long) (7) and secure them with the included clamp (small) (5). **(Refer to Fig. 21)**
Connect the remote controller wiring and the transmission wiring to the terminal block (6P).
When doing this, tie the remote controller wiring and the transmission wiring using the included clamp (small) (5) and then firmly secure using the included clamp (small) (5) according to the figure. **(Refer to Fig. 22)**

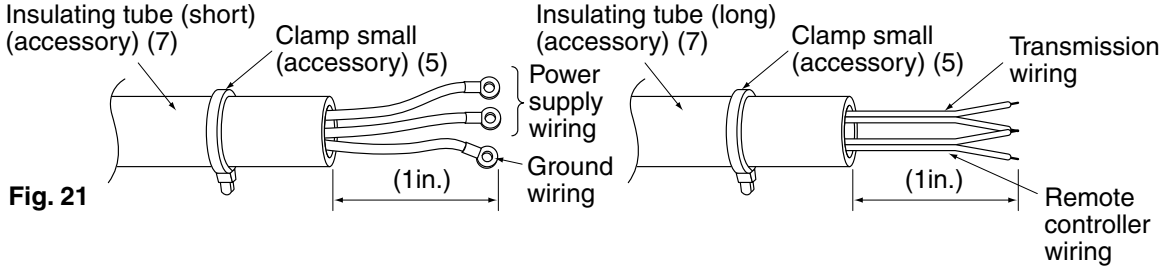


Fig. 21

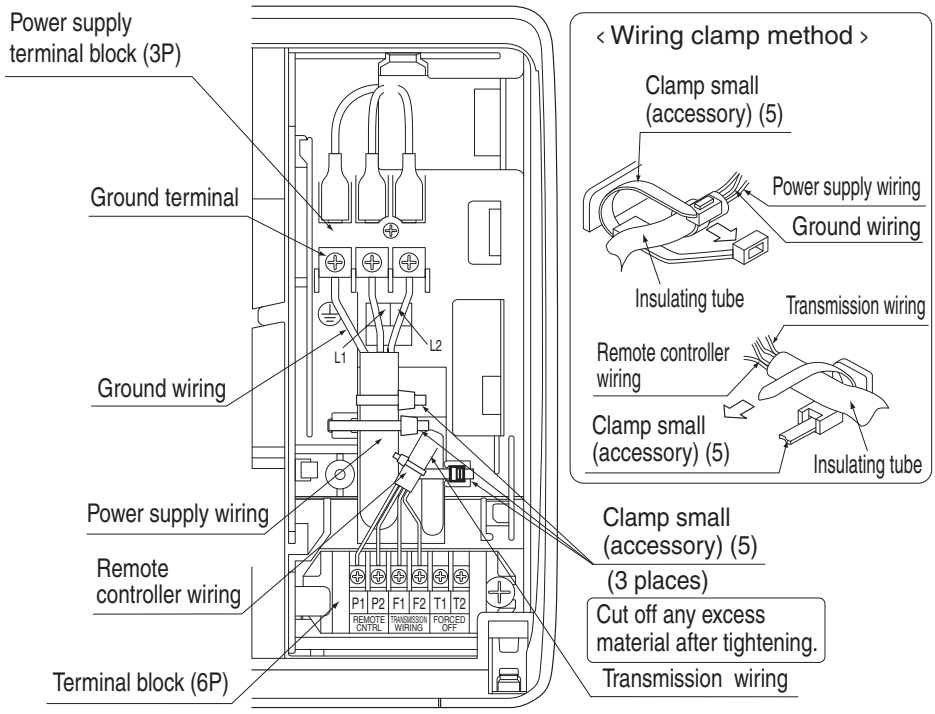


Fig. 22

⚠ WARNING

- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.
- Use only specified wire and connect wires to the terminal tightly. Be careful wires do not place external stress on terminals. Keep wires in neat order so as not to obstruct other equipment. Make sure that the electric box lid fits tightly. Incomplete connections could result in overheating and, in worse case, result in electric shock or fire.
- To avoid a short circuit in the electric parts box, be sure to apply sealing material or putty (not included) to the wiring hole to prevent the infiltration of water as well as insects or other small creatures. Otherwise a short-circuit may occur inside the electric parts box.

⚠ CAUTION

- When clamping the wirings, be sure no tension is applied to the wire connections by using the included clamp. Also, when wiring, make sure the lid on the electric parts box fits snugly by arranging the wirings neatly and attaching the service lid firmly. When attaching the service lid, make sure no wirings get caught in the edges. Pass wiring through holes to prevent damage to them.
- Make sure the remote controller wiring and transmission wiring between the units, and other electrical wiring do not pass through the same locations outside the unit, separating them by at least 5”, otherwise electrical noise (external static) could cause incorrect operation or breakage.
  Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as popping open the service cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.

[PRECAUTIONS]

1. Use round crimp-style terminals for connecting wires to the power supply terminal block. **(Refer to Fig. 23)**

If unavailable, observe the following points when wiring.

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
- Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. (Tightening torque: 0.97ft.lbf ±10 %)

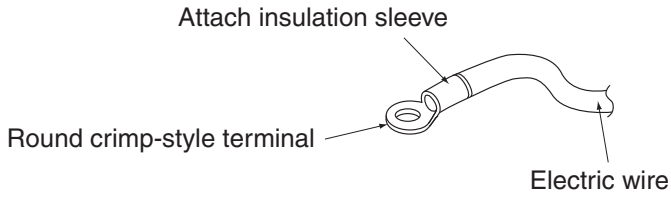


Fig. 23

2. Tightening torque for the terminal screws.

- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.
- Refer to the table below for the tightening torque of the terminal screws.

Terminal	Size	Tightening torque (ft-lbf)
Remote controller, Transmission wiring and Forced off terminal block (6P)	M3.5	0.58 – 0.72
Power supply and Ground terminal block (3P)	M4	0.87 – 1.06

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may lessen protection.

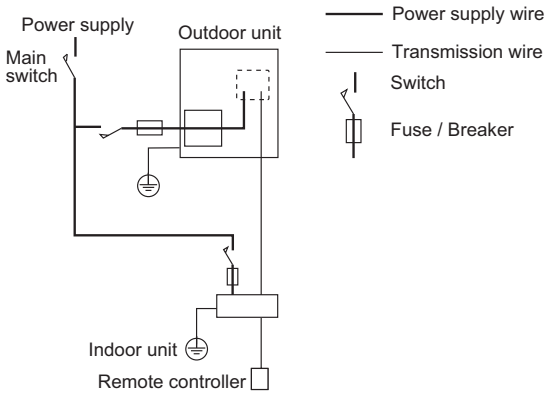
4. Keep transmission wiring at least 5” away from power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.

5. For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.

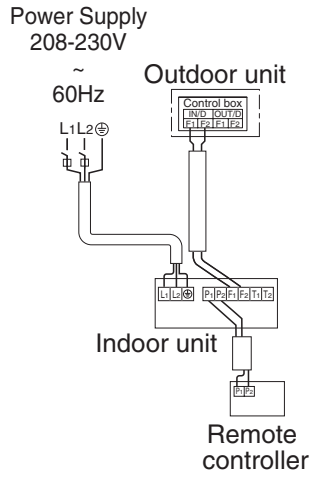
8-2 WIRING EXAMPLE

- Fit the power supply wire of each unit with a switch and fuse as shown in the drawing.

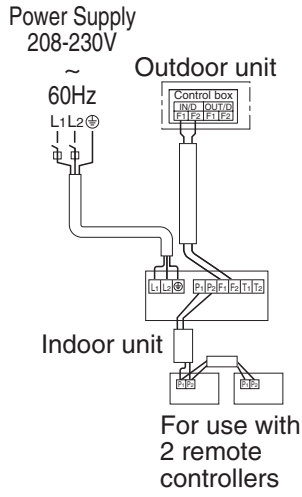
COMPLETE SYSTEM EXAMPLE



1. **When using 1 remote controller for 1 indoor unit. (Normal operation)**



2. **When using 2 remote controllers for 1 indoor unit.**



NOTE

1. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
2. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

8-3 CONTROL BY 2 REMOTE CONTROLLERS (CONTROLLING 1 INDOOR UNIT BY 2 REMOTE CONTROLLERS)

• When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

(1) Insert a ⊖ screwdriver into the recess between the upper and lower part of remote controller, and working from the 2 positions, pry off the upper part. The remote controller PC board is attached to the upper part of the remote controller. **(Refer to Fig. 28)**

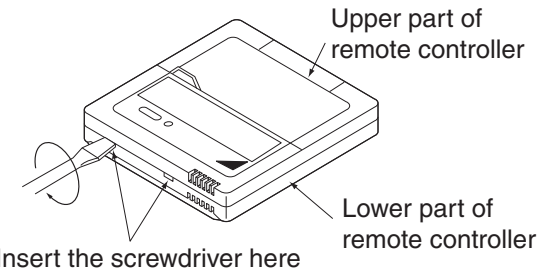


Fig. 28

(2) Turn the **MAIN/SUB changeover** switch on one of the two remote controller PC boards to “S”. (Leave the switch of the other remote controller set to “M”.) **(Refer to Fig. 29)**

Wiring Method (See “7.ELECTRIC WIRING WORK”)

(3) Remove the service lid.

(4) **Add remote control 2 (slave) to the terminal block (6P) for remote controller (P1, P2) in the electric parts box. (There is no polarity.) (Refer to Fig. 26 and section 7-3 for the wiring size.)**

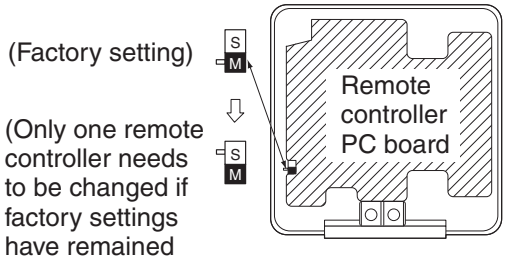


Fig. 29

8-4 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

(1) Wire specifications and how to perform wiring

• Connect the input from outside to terminals T1 and T2 of the terminal block (6P).

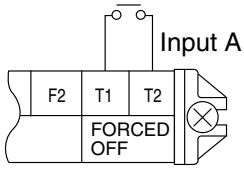


Fig. 30

Wire specification	Stranded non-shielded copper/2-conducter,PVC or vinyl jacket
Gauge	AWG18-2
Length	Max. 328 ft.
External terminal	Contact that can ensure the minimum applicable load of 15V DC, 10 mA.

(2) Actuation

• The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input “ON” stops operation (impossible by remote controllers).	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.
- Set the remote controller to the field set mode. For details, refer to the “HOW TO SET IN THE FIELD”, in the remote controller manual.
- When in the field set mode, select mode No. 12, then set the first code (switch) No. to “1”. Then set second code (position) No. to “01” for FORCED OFF and “02” for ON/OFF OPERATION.
  (FORCED OFF at factory set) **(Refer to Fig. 31)**

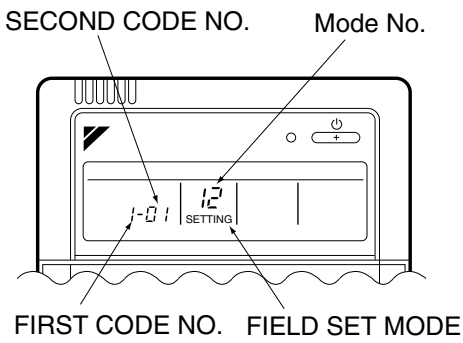


Fig. 31

8-5 CENTRALIZED CONTROL
- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

9. FIELD SETTINGS
(1) Make sure the service lids are closed on the indoor and outdoor units.
(2) Field settings must be made from the remote controller in accordance with installation conditions.
- Settings can be made by changing the “Mode No”, “FIRST CODE NO.” and “SECOND CODE NO.”. Refer to the installation manual attached to the remote controller.
- The “Field Settings” included with the remote controller lists the order of the settings and method of operation.
  *Setting is made in all units in a group. To set for individual indoor units or to check the setting, use the mode Nos. (with “2” in upper digit) in parentheses ( ).

9-1 SETTING AIR FILTER SIGN
- Remote controllers are equipped with liquid crystal display air filter signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to Table 3 depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for air filter contamination-light)

Table 3

Setting	Spacing time of display air filter sign	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 200 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 100 hrs			02

9-2 SETTING AIR FLOWRATE INCREASE MODE

- It is possible to raise set air flow (HIGH and LOW) from the field. Change the SECOND CODE NO. as shown in Table 4 to suit your needs.
  (SECOND CODE NO. is factory set to “01” for Standard.)

Table 4

Setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Standard	13 (23)	0	01
A little increase			02
Increase			03

〈**When using wireless remote controllers**〉

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

10. TEST OPERATION

Make sure the service lids are closed on the indoor and outdoor units.
Refer to the installation manual of the outdoor unit.

- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual of the outdoor unit.
  If any of the items in Table 5 are displayed, there may be a problem with the wiring or power, so check the wiring again.

  Table 5

Remote controller display	Content
“ ” (under centralized control) is lit up	• There is a short circuit at the FORCED OFF terminals (T1, T2).
“U4” is lit up “UH” is lit up	• The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and/or FORCED OFF wiring. • The transmission wiring is cut.
No display	• The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring, and/or the FORCED OFF wiring. • The remote controller wiring is cut.

- If “U3” is lit up, the malfunction code shows the test operation has not been performed yet.

16.5 FBQ18PVJU / FBQ24PVJU / FBQ30PVJU / FBQ36PVJU / FBQ42PVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Read these ***SAFETY CONSIDERATIONS for Installation*** carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation.
Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.
Always use a licensed installer or contractor to install this product. Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.
Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER**..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE**..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.**
- **If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.**
- **After completing the installation work, check that the refrigerant gas does not leak throughout the system.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.**
- **Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.**
- **When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire, or the unit falling.**
- **Install the air conditioner on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons, or earthquakes when installing. Improper installation 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, state and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.**
- **When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire, or the terminals overheating.**

- Before touching electrical parts, turn off the unit.
- Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.
- Securely fasten the outdoor unit terminal cover (panel). If the terminal cover/panel is not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.
- When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.
- Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.

⚠ CAUTION

- Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.
- Do not allow children to play on or around the unit to prevent injury.
- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- Heat exchanger fins are sharp enough to cut.
  To avoid injury wear glove or cover the fins when working around them.
- Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.
- Insulate piping to prevent condensation.
- Be careful when transporting the product.
- Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.
- Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.
- Refrigerant R410A in the system must be kept clean, dry, and tight.
  (a) Clean and Dry -- Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.
  (b) Tight -- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping and follow the procedures.
- Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.
- The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.
- Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.
- Do not install the air conditioner in the following locations:
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.
- Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.

⚠ NOTE

- Install the power supply and control wires for the indoor and outdoor units at least 3.5 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 feet may not be sufficient to eliminate the noise.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.
- If the conventional refrigerant and refrigerator oil are mixed in R410A, the refrigerant may deteriorate.
- This air conditioner is an appliance that should not be accessible to the general public.
- The wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.

2. BEFORE INSTALLATION

- **When moving the unit while removing it from the carton box, be sure to lift it by holding on to the four lifting lugs without exerting any pressure on other parts, especially, the refrigerant piping, drain piping, flanges and other resin parts.**
- Be sure to check the type of R410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When moving the unit or after opening, hold the unit by the hanger brackets (× 4). Do not apply force to the refrigerant piping, drain piping, flanges or plastic parts.
- For the installation of outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
  - **Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)**
  - **Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)**
  - **Where exposed to combustible gases and where volatile flammable gas like thinner or gasoline is used. (Gas in the vicinity of the unit could ignite.)**
  - **Where machines can generate electromagnetic waves. (Control system may malfunction.)**
  - **Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories.**
    Also in vehicles or vessels.
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
  If installed as a household appliance it could cause electromagnetic interference.

2-1 PRECAUTIONS

- Be sure to read this manual before installing the indoor unit.
- Entrust installation to the place of purchase or a qualified serviceman. Improper installation could lead to leaks and, in worse cases, electric shock or fire.
- Use only parts provided with the unit or parts satisfying required specifications. Unspecified parts could cause the unit to fall out of place, or could lead to leaks and, in worse cases, electric shock or fire.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-2 ACCESSORIES

Check that the following accessories are provided and that each accessory is correct in amount.
Refer to the Fig. 1 of this page.

[PRECAUTION]
The accessories are required for the installation of the air conditioner. Be sure to keep them until the installation work is completed.

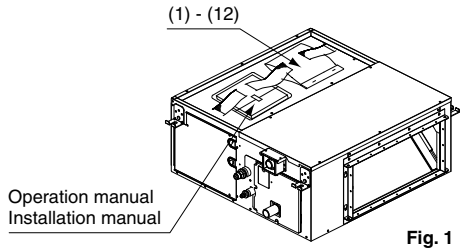
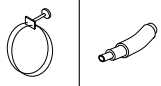


Fig. 1

Name	Metal clamp (1)	Drain hose (2)	Screws for duct flanges (3)	Insulation for fitting
Quantity	1 pc.	1 pc.	As described in table below	1 each
Shape			 M5×5/8 18 • 24 • 30 type: 18 36 • 42 type: 26	 Thin for liquid pipe (4)  Thick for gas pipe (5)

Name	Sealing pad	Clamp (8)	Washer fixing plate (9)	Wire sealing material (10)
Quantity	–	11 pcs.	4 pcs.	2 pcs.
Shape	 1 pc. Large (Dark gray) (6)  2 pcs. Middle (Dark gray) (7)			 Small (Gray)

Name	Washer (11)	Insulation tube (12)	
Quantity	8 pcs.	2 pcs.	(Other) • Operation manual • Installation manual
Shape			

2-3 OPTIONAL ACCESSORIES

- These is one type of remote controller: wired.

NOTE

- If you wish to use a remote controller that is different from the above, select a suitable remote controller after consulting catalogs and technical materials.

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

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur.	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Was the installation of the outdoor unit completed?	The unit may malfunction or the components burn out.	
Is the gas leak test finished?	No cooling or heating.	
Is the unit fully insulated? (Refrigerant piping, drain piping, and duct)	Condensate water may drip.	
Dose drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage conform to the indication on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the air conditioner properly grounded?	Dangerous in case of current leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	No cooling or heating.	
Did you set the external static pressure?	No cooling or heating.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	
Did you check that no wiring connection screws were loose?	Electric shock or fire.	

Also review the “SAFETY CONSIDERATIONS”.

b. Items to be checked at time of delivery

Items to be checked	Check
Are you sure the control box cover, air filter, air inlet grille, and air outlet grille are mounted?	
Did you explain about operations while showing the operation manual to your customer?	
Did you deliver the operation manual along with the installation manual to the customer?	
Did you explain the customer the handling and cleaning methods of the field supplies (e.g., the air filter, air inlet grilles, and air outlet grille)?	
Did you deliver instruction manual, if any, for the field supplies to the customer?	

c. Points for explanation about operations

The items with ⚠WARNING and ⚠CAUTION marks in the operation manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the operation manual.

2-4 NOTE TO INSTALLER

- Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

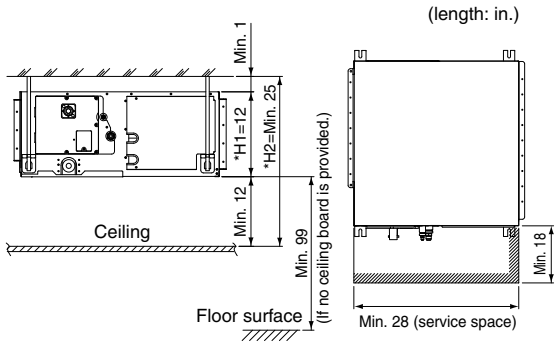
〈**Hold the hanger brackets in the case of moving the indoor and outdoor units at the time of and after opening the packages. Do not impose undue force on other parts, such as the refrigerant piping, drain piping, or flanges, in particular.**〉
〈**Add heat insulation material to the indoor unit if the temperature above the ceiling is likely to exceed 86°F and a relative humidity of 80%.**〉
〈**Make sure that the insulation material is made of glass wool or polyethylene foam, has a minimum thickness of 3/8 in., and can be accommodated in the opening on the ceiling.**〉

(1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.
- A place where cool (warm) air is delivered to the entire room.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.
- If supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.
- Where the false ceiling is not noticeably on an incline.
- Where there is no risk of flammable gas leakage.
- Where sufficient clearance for maintenance and service can be ensured. **(Refer to Fig. 2-1)**
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)

CAUTION

- Install the indoor and outdoor units, power supply wiring and connecting wires at least 3.3 ft away from televisions or radios in order to prevent image interference or noise.
  (Depending on the radio waves, a distance of 3.3 ft may not be sufficient enough to eliminate the noise.)
- In the case of the installation of a wireless remote controller, the transmission distance of the wireless remote controller may be shortened if the room has a fluorescent light of electronic lighting type (i.e., an inverter or rapid-start fluorescent light).
  Keep the distance between the receiver and the fluorescent light as far as possible.

(2) Use suspension bolts to install the indoor unit. Check that the place of installation withstands the weight of the indoor unit. Secure the suspension bolts with proper beams if necessary.



- The H1 dimension indicates the height of the product.
- Determine the H2 dimension by maintaining a downward slope of at least 1/100 as specified in "7. DRAIN PIPING WORK".

[Required installation place]
The dimensions indicate the minimum required space of installation.

Fig. 2-1

4. PREPARATIONS BEFORE INSTALLATION

(1) Check the positional relationship between the ceiling opening hole and the suspension bolt of the unit.
- For the maintenance, inspection, and other servicing purposes of the control box and drain pump, prepare one of the following service spaces.
  1. Inspection hatch 1 (17-3/4 × 17-3/4) for the control box and a minimum space of 12 in. for the lower part of the product. **(Refer to Fig. 2-2)**
  2. Inspection hatch 1 (17-3/4 × 17-3/4) for the control box and inspection hatch 2 for the lower part of the product (see arrow view A-1). **(Refer to Fig. 2-3)**
  3. Inspection hatch 3 for the lower part of the product and the lower part of the control box (see arrow view A-2). **(Refer to Fig. 2-3)**

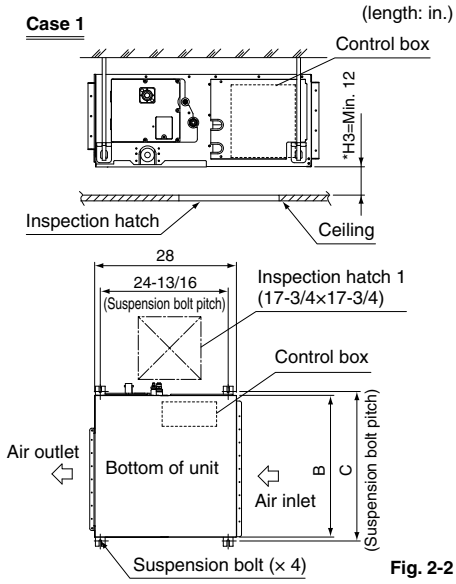


Fig. 2-2

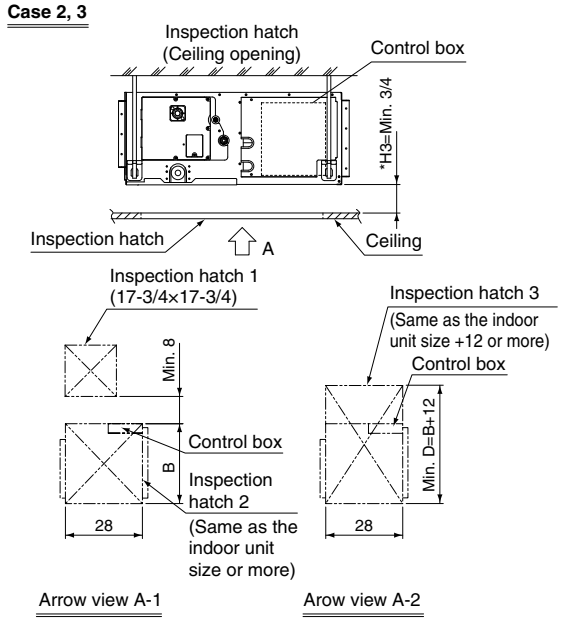


Fig. 2-3

- Determine the H3 dimension by maintaining a downward slope of at least 1/100 as specified in "7. DRAIN PIPING WORK".

Model	B	C	D
18 • 24 • 30 type	40	40-7/8	52
36 • 42 type	56	56-5/8	68

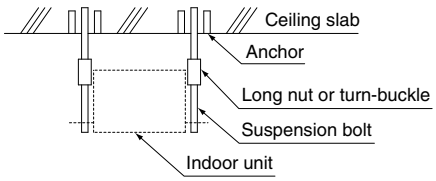
(length: in.)

(2) Mount the canvas ducts to the air outlet and inlet so that the vibration of the air conditioner will not be transmitted to the duct or ceiling. Apply a sound-absorbing material (insulation material) to the inner wall of the duct and vibration insulation rubber to the suspension bolts (refer to **8. DUCT WORK**).

(3) Open installation holes (if the ceiling already exists).
- Open the installation holes on the ceiling. Lay the refrigerant piping, drain piping, power line, transmission wiring, and remote controller wiring for the piping and wiring connection port of the unit.
  In the case of the installation of a wireless remote controller, refer to the installation manual provided with the wireless remote controller.
  Refer to **6. REFRIGERANT PIPING WORK**, **7. DRAIN PIPING WORK**, and **10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER**.
- The ceiling framework may need reinforcement in order to keep the ceiling horizontal and prevent the vibration of the ceiling after the installation holes are opened. For details, consult your construction or interior contractor.

(4) Install the suspension bolts. Make sure that the suspension bolts are M10 or the equivalent in size.
- Use hole-in anchors if the suspension bolts already exist; otherwise use embedded inserts and embedded foundation bolts so that they will withstand the weight of the unit. Adjust the distance to the ceiling surface in advance.

〈 Installation example 〉



Note) All the above parts are field supplied.

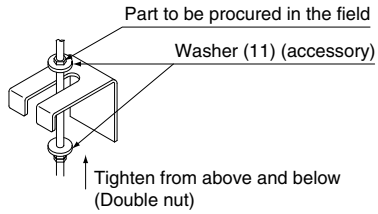
5. INDOOR UNIT INSTALLATION

〈It may be easier to install accessories (sold separately) before installing the indoor unit. Refer to the installation manuals provided to the accessories as well.〉

Be sure to use the accessories and specified parts for installation work.

(1) Temporally install the indoor unit.
- Connect the hanger brackets to the suspension bolts. Be sure to use and tighten the nut and washer (11) for each hanger bracket from both upper and lower sides of the hanger bracket. **(Refer to Fig. 3)** At that time, the fall of the washer (11) for the hanger bracket can be prevented if the washer fixing plate (9) is used.

[Fixing hanger brackets]



[Fixing method of washers]

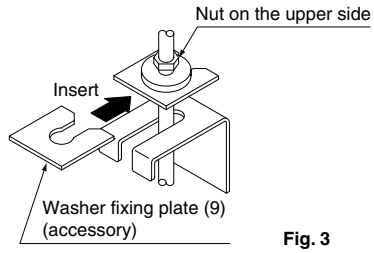


Fig. 3

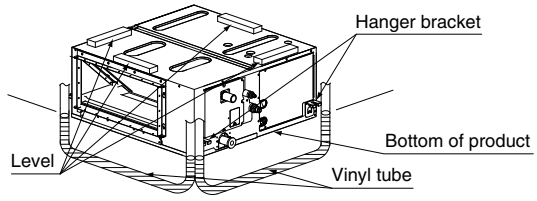
⚠ CAUTION

- **During the installation work, perform the curing of the air outlet and protect the resin drain pan of the indoor unit from the intrusion of foreign substances, such as welding spatters.**
  Otherwise, water leakage may occur as a result of damage, such as hole damage, to the resin drain pan.

(2) Make adjustments so that the unit will be in the right position.

(3) Check the level of the unit.

(4) Remove the washer fixing plates for the falling prevention of the washers for the hanger brackets, tighten the nuts on the upper side, and securely fix the unit.



CAUTION

- Use the level and check that the unit is installed horizontally. (4-directions)
- In the case of using a vinyl tube (filled with water) in place of the level, align the bottom of the unit to the water surface at both edges of the vinyl tube to make levelness adjustment. If the unit is installed at a slant with the drain pipe side set high, in particular, the float switch will not operate normally and water leakage may result.

6. REFRIGERANT PIPING WORK

〈As for the refrigerant piping of the outdoor unit, refer to the installation manual provided to the outdoor unit.〉
〈Perform heat insulation work on both gas piping and liquid piping, or otherwise water leakage may result.〉
〈Use the insulation material that withstands a temperature of 250°F.〉
〈Reinforce the insulation material for the refrigerant piping if the ambient temperature is high, or otherwise dew condensation may result on the surface of the insulation material.〉
〈Make sure that the refrigerant is R410A before refrigerant piping work. If the refrigerant is different, the air conditioner will not operate normally.〉

CAUTION

This product uses new refrigerant (R410A) only. Be sure to keep the following items and conduct the installation work.

- **Use a dedicated pipe cutter and flare tool for R410A.**
- **When connecting the flare, apply ether oil or ester oil only to inner side of the flare.**
- **Be sure to use the flare nut provided with the unit. (Do not use a different flare nut (such as a type-1 flare nut), or otherwise refrigerant leakage may result.)**
- **Perform the curing of the piping with pinching or taping of the piping in order to prevent the intrusion of dirt, dust, and moisture into the piping.**

CAUTION

- **Be sure to use the specified type of refrigerant for the refrigeration cycle and do not contaminate the refrigerant with air.**
- **Ventilate the room in case of refrigerant leakage during installation work.**

(1) Connect the piping.

- The outdoor unit is filled with refrigerant.
- When connecting or disconnecting piping to or from the unit, **be sure to use a spanner and a torque wrench. (Refer to Fig. 4)**

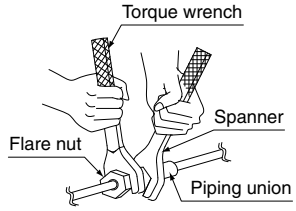


Fig. 4

- Refer to Table 1 for the processing dimensions of the flare.
- Use the flare nut provided with the unit.
- **Apply ether oil or ester oil only to inner side of the flare** and screw in the flare nut three to four turns first by hand at the time of connecting the flare nut. **(Refer to Fig. 5)**

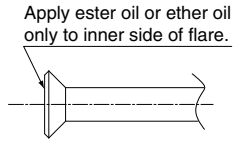
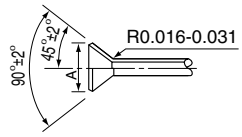


Fig. 5

- Refer to Table 1 for the corresponding tightening torque.

Table 1

Pipe size	Tightening torque	Flare dimensions A (in.)	Flare shape
ϕ 1/4	10.4 – 12.7 lbf·ft	0.342 – 0.358	
ϕ 3/8	24.1 – 29.4 lbf·ft	0.504 – 0.520	
ϕ 1/2	36.5 – 44.5 lbf·ft	0.638 – 0.654	
ϕ 5/8	45.6 – 55.6 lbf·ft	0.760 – 0.776	

CAUTION

- **Do not excessively tighten the flare nut.**
  Doing so will break the flare nut and refrigerant leakage may result.
- **Make sure that all parts around the flare are free of oil.**
  The drain pan and the resin part may be deteriorated if oil is attached.

- If no torque wrenches are available, refer to Table 2 as a standard.
  When the flare nut is tightened with the spanner, the tightening torque should increase suddenly. Tighten the flare nut further for the corresponding angle shown in Table 2.

Table 2

Pipe size	Further tightening angle	Recommended arm length of tool
ϕ 1/4	60 to 90 degrees	Approx. 5-7/8 in.
ϕ 3/8	60 to 90 degrees	Approx. 7-7/8 in.
ϕ 1/2	30 to 60 degrees	Approx. 9-13/16 in.
ϕ 5/8	30 to 60 degrees	Approx. 11-13/16 in.

(2) On completion of installation work, **check that there is no gas leakage**.

(3) Refer to the following illustration and be sure to perform heat insulation work on the piping joints after gas leakage checks. **(Refer to Fig. 6)**

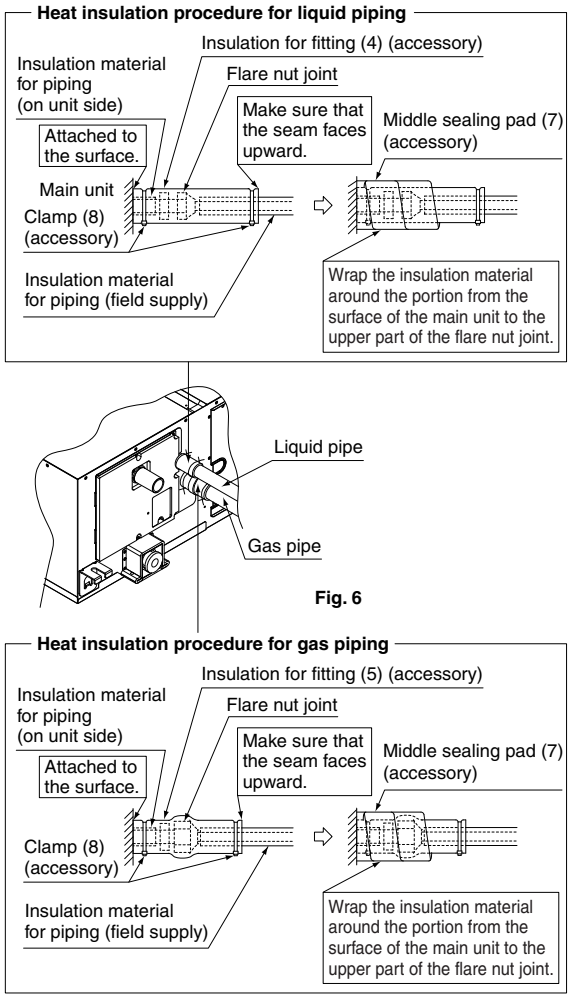


Fig. 6

- Use the insulation for fitting (4) and (5) provided to the liquid piping and gas piping, respectively, and conduct heat insulation work.
  (Tighten both edges of the insulation for fitting (4) and (5) for each joint with the clamp (8).)
- Make sure that the joint of the insulation for fitting (4) and (5) for the joint on the liquid piping and gas piping side faces upward.
- Wrap the middle sealing material (7) around the insulation for fitting (4) and (5) for the joint (flare nut part).

⚠ CAUTION

- **Be sure to perform the heat insulation of the local piping up to the piping joint.**
  If the piping is exposed, dew condensation may result. Furthermore, a burn may be caused if a human body comes in contact with the piping.

- Perform nitrogen substituent or apply nitrogen into the refrigerant piping (see NOTE 1) in the case of refrigerant piping blazing (see NOTE 2). Then perform the flare connection of the indoor unit. **(Refer to Fig. 7)**

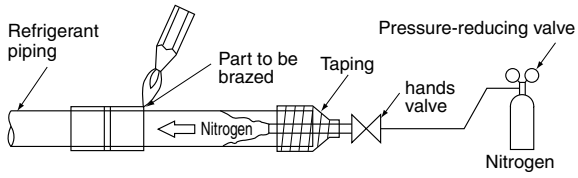


Fig. 7

⚠ CAUTION

- **Do not use any antioxidant at the time of piping blazing.**
  The piping may be clogged with a residual antioxidant and parts may malfunction.

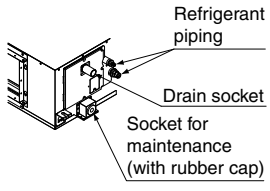
NOTE

1. At the time of blazing, set the pressure of nitrogen to approximately 2.9 PSI (close to the pressure of a breeze coming in contact with the cheek) with a pressure-reducing valve.
2. Do not use flux at the time of blazing and connecting the refrigerant piping. Use a copper phosphorus brazing alloy (BCuP-2/BCu 93P-710/795), which does not require flux, for blazing.
   (Flux has a bad influence on the refrigerant piping. Chlorine-based flux will cause piping corrosion. Furthermore, if it contains fluorine, the flux will deteriorate refrigerant oil.)

- As for the branching of the refrigerant piping or refrigerant, refer to the installation manual provided with the outdoor unit.

7. DRAIN PIPING WORK

(1) Conduct drain piping work. **Check that the piping ensures proper draining.**

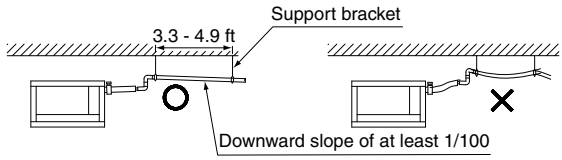


- Make sure that the diameter of the piping excluding the rising part is the same as or larger than the diameter of the connecting pipe (vinyl chloride pipe with an outer diameter of 1-1/4 in. and a nominal inner diameter of 31/32 in.).
- Make sure that the piping is short enough **with a downward slope of at least 1/100** and that there is no air bank formed. No drain trap is required.

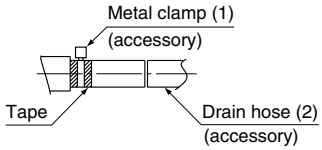
CAUTION

- The drain piping will be clogged with water and water leakage may result if the water is accumulated in the drain piping.

- Conduct drain-up piping work if the gradient is insufficient.
- Attach a support bracket at 3.3 to 4.9 ft intervals for the prevention of piping deflection.



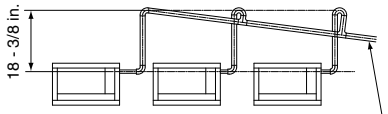
- Be sure to use the drain hose (2) and metal clamp (1). **Insert the drain hose (2) deep into the base of the drain socket, and securely fasten the metal clamp (1) within the taped part on the insertion front end of the hose.**
  Be sure to fasten the screw of the metal clamp (1) until the margin of the screw thread decreases to 3/16 in. or less.



NOTE

Be sure to follow the instructions as below.

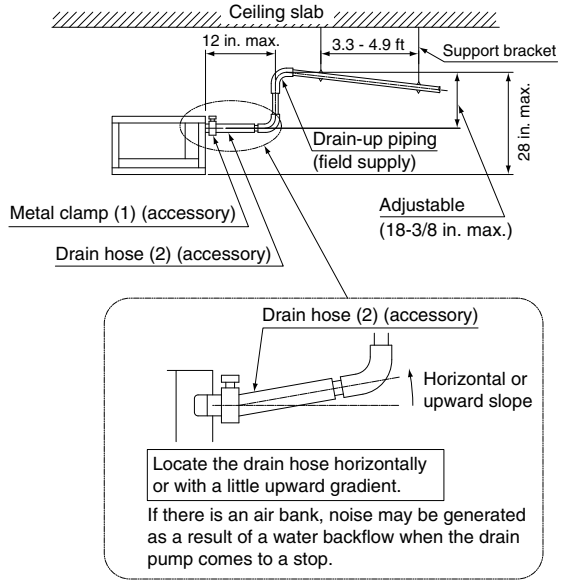
- Do not connect the drain piping directly to a sewer that smells of ammonia.
  The ammonia in the sewer may reach through the drain piping and corrode the heat exchanger of the indoor unit.
- Do not bend or twist the provided drain hose (2) in order not to impose excessive force on the hose. (Doing so may result in water leakage.)
- Take the procedure shown in the following illustration to perform concentrated drain piping.



Maintain **a downward slope of at least 1/100** so that no air bank will be formed.

The drain piping will be clogged with water and water leakage may result if the water is accumulated in the drain piping.

- Select the diameter of the concentrated drain piping to suit the capacity of equipment connecting to the concentrated drain piping (see the equipment design sheet).



(2) Check the smooth draining of the piping on completion of the installation of the piping.

[Before electrical work]

CAUTION

- **A licensed electrical engineering technician must conduct electrical wiring work (including grounding work).**
- **If no licensed electrical engineering technician is available, take steps 3 and 4 after the test run of the air conditioner is finished.**

1. Remove the control box cover, **and connect the single-phase electric wires to terminals L1 and L2 of the terminal block and the ground wiring to the ground terminal**.
   Perform wiring according to **10-1. CONNECTING POWER SUPPLY, GROUND, REMOTE CONTROLLER, AND TRANSMISSION WIRING** in **10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER**.

CAUTION

- In order not to impose tension on the wire connections, perform clamping securely with the provided clamp (8) specified in 3 in **10-1. CONNECTING POWER SUPPLY, GROUND, REMOTE CONTROLLER, AND TRANSMISSION WIRING**.

2. Check that the control box cover is closed before turning the air conditioner ON.
3. Provide **approximately 1/4 gal of water** gradually into the drain pan through the water inlet on the bottom of the drain socket or the outlet. Make sure that the water is not spilled onto the drain pump.
4. The drain pump will operate with the power turned ON. Check that the pump drains water smoothly. (The drain pump will stop automatically in 10 minutes.)

The drainage can be checked with the water level change in the drain pan through the water inlet.

⚠ CAUTION

- **Do not touch the drain pump.**
  Otherwise, an electric shock may be received.
- **Do not impose external force on the float switch.**
  Otherwise, a failure may result.

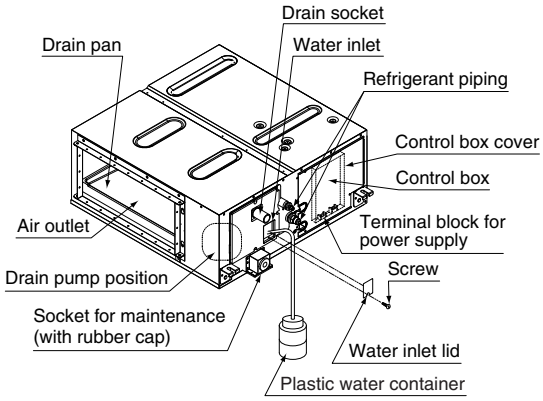
5. On completion of the drainage check, shut off the power supply and disconnect the power supply line.
6. Put the control box cover to the original position.

[After electrical work]

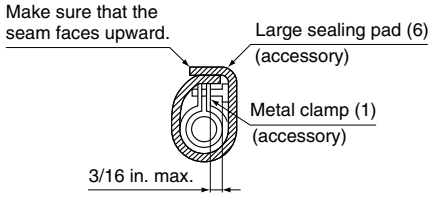
- After completion of **8. DUCT WORK** provide **approximately 1/4 gal of water** gradually into the drain pan through the water inlet on the bottom of the drain socket, and check that the water is drained while the air conditioner is in cooling operation according to **11. FIELD SETTING** and **12. TEST RUN**. Make sure that the water is not spilled onto the electric parts of the drain pump and others.

(3) Be sure to conduct heat insulation work on the following portions, or otherwise water leakage may occur as a result of dew condensation.

- **Drain piping indoors**
- **Drain socket**



- On completion of the drainage check, refer to the following illustration, and use the provided large sealing pad (6) and heat insulate the metal clamp (1) and drain hose (2).



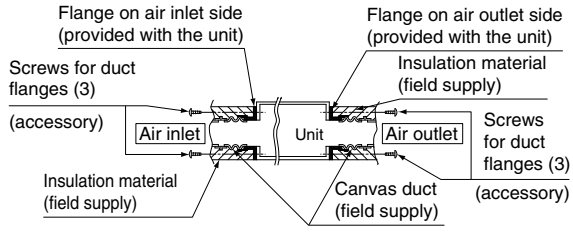
8. DUCT WORK

Pay the utmost attention to the following items and conduct the ductwork.

- Check that the duct will not be in excess of the setting range of external static pressure for the unit. (Refer to the technical data sheet for the setting range. Each model has each setting range of external static pressure.)
- Attach a canvas duct each to the air outlet and air inlet so that the vibration of the equipment will not be transmitted to the duct or ceiling.
  Use a sound-absorbing material (insulation material) for the lining of the duct and apply vibration insulation rubber to the suspension bolts.
- At the time of duct welding, perform the curing of the duct so that the sputter will not come in contact with the drain pan for the filter.
- If the metal duct passes through a metal lath, wire lath, or metal plate of a wooden structure, separate the duct and wall electrically.
- Be sure to heat insulate the duct for the prevention of dew condensation. (Material: Glass wool or styrene foam; Thickness: 31/32 in.)
- Be sure to attach the field supply air filter to the air inlet of the unit or field supply inlet in the air passage on the air suction side. (Be sure to select an air filter with a duct collection efficiency of 50 weight percent.)
- Explain the operation and washing methods of the locally procured components (i.e., the air filter, air inlet grille, and air outlet grille) to the customer.
- Locate the air outlet grille on the indoor side for the prevention of drafts in a position where indirect contact with people.
- The air conditioner incorporates a function to adjust the fan to rated speed automatically. **(11. FIELD SETTING)**
  Therefore, do not use booster fans midway in the duct.

Connection method of ducts on air inlet and outlet sides.

- Connect the field supply duct in alignment with the inner side of the flange.
- Connect the flange and unit with the flange connection screw (3).
- Wrap aluminum tape around the flange and duct joint in order to prevent air leakage.



⚠ CAUTION

Connect the flange and unit with the flange connection screw (3) regardless of whether the duct is connected to the air inlet side.

9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also “Wiring diagram” attached to the control box cover.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wiring connected to the outdoor unit, the capacity of the ground fault circuit interrupter and switch, and wiring instructions.
- Be sure to ground the air conditioner.
- Do not connect the ground wiring to gas and water pipes, lightning rods, or telephone ground wires.
  - Gas pipes : might cause explosions or fire if gas leaks.
  - Water pipes : no grounding effect if hard vinyl piping is used.
  - Telephone ground wires or lightning rods : might cause abnormally high electric potential in the ground during lighting storms.

9-2 ELECTRICAL CHARACTERISTICS

Model	Power supply					Fan motor	
	Hz	Volts	Voltage range	MCA	MOP	KW	FLA
FBQ18PVJU	60	208V /230V	Max. 253V Min. 187V	1.6	15	0.350	1.3
FBQ24PVJU				1.8	15	0.350	1.4
FBQ30PVJU				2.3	15	0.350	1.8
FBQ36PVJU				2.9	15	0.350	2.3
FBQ42PVJU				3.4	15	0.350	2.7

MCA: Minimum Circuit Ampacity (A)
MOP: Maximum Overcurrent Protective Device (A)
kW: Fan Motor Rated Output (kW)
FLA: Full Load Ampacity (A)

9-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSE " 2 %AND2WIRE

Model	Power supply wiring		Remote controller wiring Transmission wiring	
	fuse/breaker	Size	Wire	Size
FBQ18PVJU	15A	Size must comply with local codes.	Stranded non-shielded 2-conductor	AWG18-2
FBQ24PVJU				
FBQ30PVJU				
FBQ36PVJU				
FBQ42PVJU				

Allowable length of transmission wirings and remote controller wiring are as follows.
(1) Outdoor unit – Indoor unit:
Max. 3280 ft (Total wiring length: 6560 ft)
(2) Indoor unit – Remote controller:
Max. 1640 ft

NOTE

1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
2. Vinyl cord with sheath or cable (Insulated thickness : 0.04 in. or more)

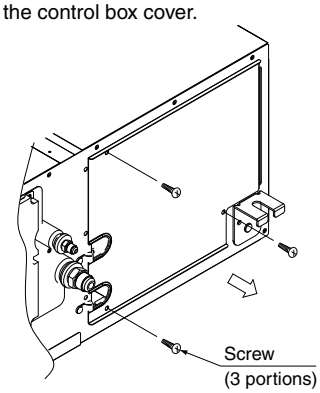
NOTE: Either a fuse or a breaker is acceptable.

10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

10-1 CONNECTING POWER SUPPLY, GROUND, REMOTE CONTROLLER, AND TRANSMISSION WIRING

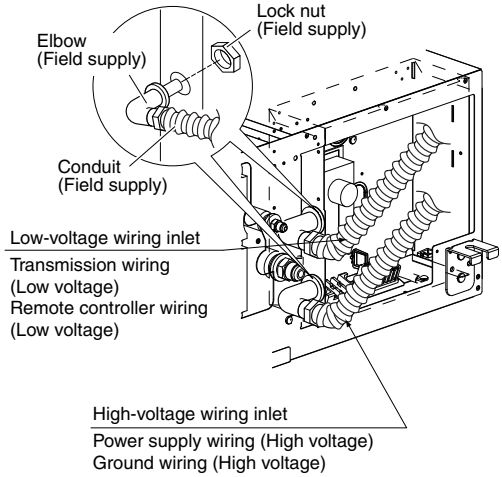
(Remove the control box cover as shown below and connect each wire.)

(1) Remove the control box cover.



C: 3PN14093-12A

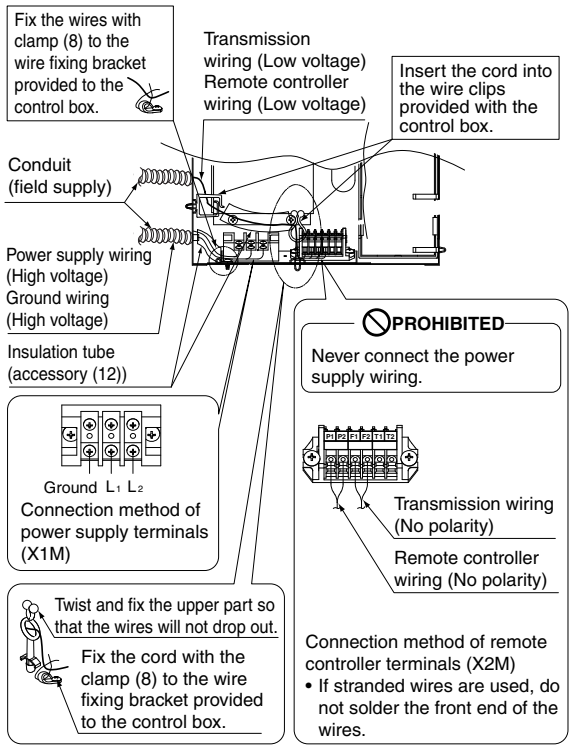
(2) Lay the wires in the control box through the wire inlet on the side of the control box.



CAUTION

- Do not lay the remote controller wiring or transmission wiring along with the power supply wiring or other electric wiring in the same route. Separate the remote controller wiring and transmission wiring at least 2 in. from the power supply wiring or other electric wiring, or otherwise malfunctions or failures may be caused by external electric noise that may interfere with the remote controller wiring and transmission wiring.
- For the installation and wiring of the remote controller, refer to the remote controller installation manual provided with the remote controller.
- For power supply wiring, refer to the wiring diagram as well.
- Be sure to connect the remote controller wiring and transmission wiring correctly to the right terminal block.

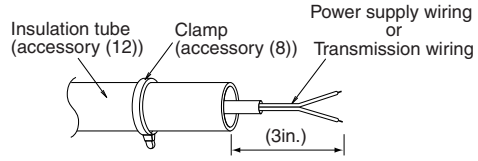
(3) Follow the instructions below, and lay the wires in the control box.



Routing power supply wiring and transmission wiring

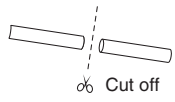
Let the power supply wiring with a conduit pass through one of the holes on the side cover, and let the transmission wiring with a conduit pass through another hole.

- For protection from uninsulated live parts, thread the power supply wiring or the transmission wiring through the included insulation tube and secure it with the included clamp.



When use the insulation tube

- Cut off the insulation tube as need length.

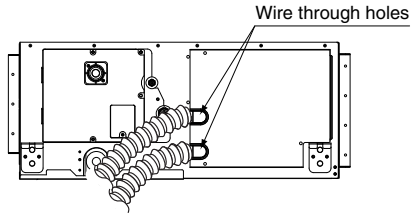


WARNING

Trim and lay the wiring neatly and attach the control box cover securely.

An electric shock or fire may result if the control box cover catches any wiring or the wires push up the cover.

(4) Put the control box cover, and wrap the wire sealing material (Small) (10) around the conduit so as to block the wire through holes.

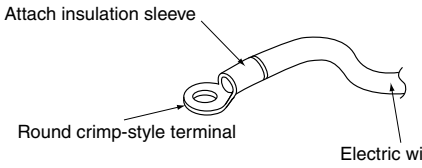


CAUTION

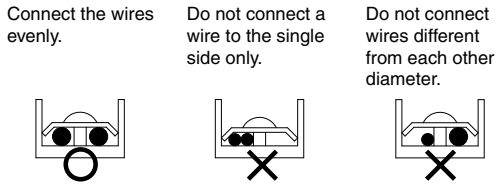
- After all the wiring connections are done, fill in any gaps in the through holes with putty or insulation (procured locally) to prevent small animals and insects from entering the unit from outside. (If any do get in, they could cause short circuits in the control box.)

[Precautions for Power Supply Wiring]

- Connect round crimp-style terminals provided with insulation sleeves to the terminal block for power supply.



Be sure to follow the instructions provided below if the specified terminals cannot be used.
Otherwise, abnormal heat may be generated as a result of the loosening of the wires.



- If stranded wires are used, do not solder the front end of the wires.
- Connect proper wires securely and fix the wires so that external force will not be imposed on the terminals.
- Use an appropriate screwdriver to tighten the terminal screws. The screw heads may be damaged if the screwdriver is too small and the terminal screws will not be tightened properly.
- Do not tighten the terminal screws excessively, or otherwise the screw heads may be damaged.
- Refer to the table below for the required tightening torque values of the terminal screws.

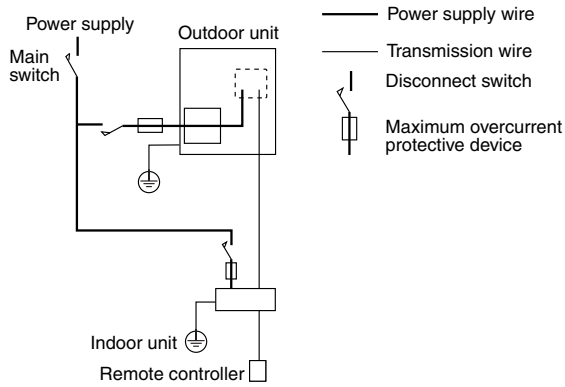
	Tightening torque (lbf·ft)
Terminal block for remote controller and transmission wires	0.58 - 0.72
Terminal block for power supply Ground wiring	0.87 - 1.06

10-2 WIRING EXAMPLE

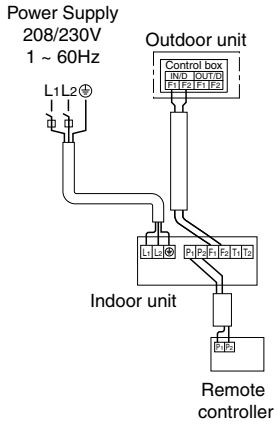
WARNING

Install a ground fault circuit interrupter.
The installation of a ground fault circuit interrupter is imperative for the prevention of electric shocks and fire accidents.

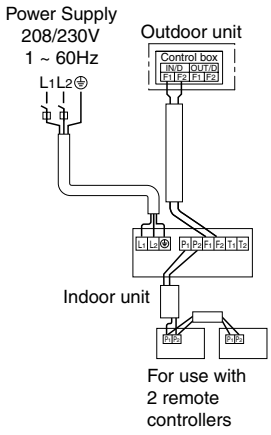
COMPLETE SYSTEM EXAMPLE



1. When using 1 remote controller (Normal operation)



2. When using 2 remote controllers



[PRECAUTIONS]

1. Make sure that the ground fault circuit interrupter is designed to protect the air conditioner from ground faults, overloads, and short-circuiting.
2. The remote controller wiring (P1 and P2) and transmission wiring (F1 and F2) have no polarity.

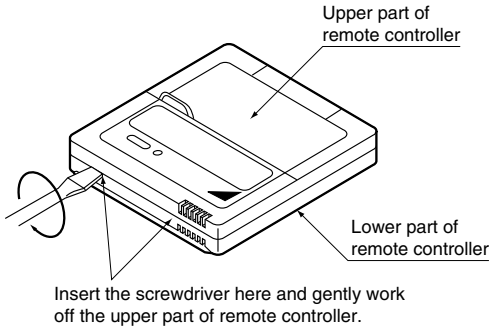
10-3 CONTROL BY 2 REMOTE CONTROLLERS (Controlling 1 indoor unit by 2 remote controllers)

- Set one of the remote controllers to main and the other to sub in the case of remote control with two remote controllers.

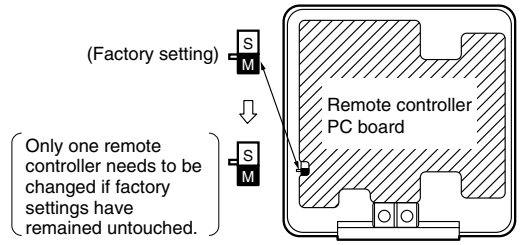
Switching Main/Sub

- The setting of the BRC1E71 remote controller should be switched referring to the manual supplied with the remote controller.
- In case of BRC1D71 remote controller.

(1) Insert a ⊖ screwdriver into the clearance between the grooves of the lower casing and the upper casing to remove the upper casing. (2 grooves) (The remote controller PCB is attached to the upper casing.)

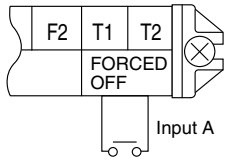


(2) Set the main/sub switch on one of the remote controller PCBs to sub. (Keep the switch of the other remote controller PCB set to main.)



10-4 COMPUTERIZED CONTROL (FORCED OFF AND ON/OFF OPERATION)

(1) Wire specifications and how to perform wiring
- Connect the external input to terminals T1 and T2 of the terminal block for remote controller.



Wire specification	2-conductor/stranded,non-shielded copper/PVC or vinyl jacket
Gauge	AWG18-2
Length	Max. 328 ft
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 1 mA.

(2) Actuation
- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION
- Turn the power on and then use the remote controller to select operation.

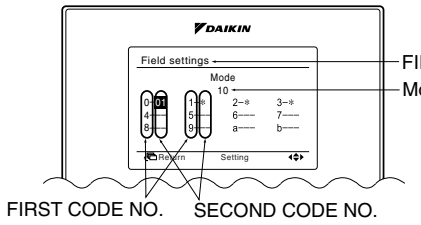
10-5 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

11. FIELD SETTING

Make sure the control box covers are closed on the indoor and outdoor units.
Field setting must be made from the remote controller in accordance with the installation conditions.

- Setting can be made by changing the “Mode No.”, “FIRST CODE NO.”, and “SECOND CODE NO.”.
- For setting procedures and instructions, refer to the “FIELD SETTING” in the installation manual of the remote controller.



With wireless remote controller used
Set the wireless remote controller address before using the wireless remote controller.
For the setting method of the address, refer to the operation manual provided with the wireless remote controller.

NOTE

- Before the test run as explained in **12. TEST RUN**, be sure to make the following field settings.
- A “Mode No.” is set on a group basis. To make a mode setting on an individual unit basis or check the setting made, however, set the corresponding mode number in the parentheses.

1. Settings for optional accessories
- In case of connecting optional accessories, refer to the installation manual provided with them and make necessary settings.

2. External static pressure settings
Make settings in either method (a) or method (b) as explained below.

(a) Use the airflow adjustment function to make settings.
Automatic airflow adjustment: The volume of discharge air is automatically adjusted to the rated quantity.
(1) Check that power supply wiring to the air conditioner is completed along with duct installation. If a closing damper is installed in the air-conditioning system, make sure that the closing damper is opened. Furthermore, check that the air filter as a field supply is attached to the air passage on the suction side.
(2) If there are a number of air outlets and inlets, adjust the throttles so that the airflow rate of each air outlet and inlet will coincide with the designed airflow rate. At that time, operate the air conditioner in “fan mode”. To change the airflow rate, press and set the airflow adjustment button of the remote controller to HH, H, or L.
(3) Make settings for automatic airflow adjustment. After setting the air conditioner to “fan mode”, stop the air conditioner, go to “FIELD SET MODE”, select Mode No. “21” (11 in the case of group settings), set the setting “FIRST CODE NO.” to 7, and set the setting “SECOND CODE NO.” to 03.
Return to normal mode after these settings, and press the ON/OFF OPERATION button. Then the operation lamp will be lit and the air conditioner will go into fan operation for automatic airflow adjustment. Do not adjust the throttles of the air outlets or inlets during automatic adjustment of the air conditioner. After the air conditioner runs approximately one to eight minutes, the air conditioner will finish airflow adjustment automatically, the operation lamp will be turned OFF, and the air conditioner will come to a stop.

Table 3

Mode No.	FIRST CODE NO.	Setting contents
11 (**21**)	7	Airflow adjustment
SECOND CODE NO.		
01	02	03
OFF	Completion of airflow adjustment	Start of airflow adjustment

(4) After the air conditioner stops operating, check with “Mode No. 21” on an indoor unit basis that 02 is set for the “SECOND CODE NO.” in Table 3. If the air conditioner does not stop operating automatically or the “SECOND CODE NO.” is not 02, repeat steps from (3). If the outdoor unit is not turned ON, U4 or UH as explained in Table 7 will be displayed. This display is not problematic, because this function is set for the indoor unit. Continue setting the function. After setting this function, be sure to turn ON the outdoor unit before the test run of the outdoor unit. If any other error is displayed, refer to Table 7 and the operation manual provided with the outdoor unit and check the defective point.

CAUTION

- If there is any change after airflow adjustment in the ventilation paths (e.g., the duct and air outlet), be sure to make automatic airflow adjustment again.
- Consult your Daikin representative if there is any change in the ventilation paths (e.g., the duct and air outlet) after the test run of the outdoor unit is finished or the air conditioner is moved to another place.

(b) Select an external static pressure with the remote controller.
Check that 01 (OFF) is set for the “SECOND CODE NO.” in “Mode No. 21” for airflow adjustment on an indoor unit basis in Table 3. The “SECOND CODE NO.” is set to 01 (OFF) at factory set. Change the “SECOND CODE NO.” as shown in Table 4 according to the external static pressure of the duct to be connected.
(1) The “SECOND CODE NO.” is set to 07 (an external static pressure of 0.4 inWG) at factory set.

Table 4

External Static Pressure	Mode No.	FIRST CODE NO.	SECOND CODE NO.
0.20 inWG	13 (23)	06	02
0.24 inWG			03
0.28 inWG			04
0.32 inWG			05
0.36 inWG			06
0.40 inWG			07
0.44 inWG			08
0.48 inWG			09
0.52 inWG			10
0.56 inWG			11
0.60 inWG			12
0.64 inWG			13
0.72 inWG			14
0.80 inWG			15

⚠ CAUTION

Keep in mind that a shortage of airflow quantity or water leakage will result because the air conditioner will be operated outside the rated range of airflow quantity if the external static pressure is wrongly set.

3. Filter sign settings

- The remote controller is provided with an LCD that tells the time of air filter cleaning.
- If the air conditioner is used in places with excessive dust, change the "SECOND CODE NO." as shown in Table 5. The "SECOND CODE NO." is set to 01 (standard) at factory set.

Table 5

Dirt	Time for display	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Standard	Approximately 2500 hours	10 (20)	0	01
Excessive dust	Approximately 1250 hours			02
No display (*)			3	

* Select "No display" under conditions in which the cleaning display is not required, such as the time of regular maintenance.

12. TEST RUN

Refer to the installation manual of the outdoor unit.

- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in the installation manual attached to the outdoor unit or the service manual.
  If any of the items in Table 7 is displayed, there may be a problem with the wiring or power supply, so check the wiring again.

Table 6

Remote controller display	Contents
"A8" is lit up	Error in power supply voltage to indoor unit.
"C1" is lit up	Fan driver PCB of indoor unit ↔ indoor control PCB transmission error.
"C6" is lit up	Improper combination of fan driver PCB of indoor unit or setting failure in control PCB type.
"U3" is lit up	Test run of outdoor unit has not been finished.

Table 7

Remote controller display	Contents
"CENTRAL CONTROL" is lit up	• There is a short circuit at the FORCED OFF terminals (T1, T2)
"U4" is lit up "UH" is lit up	• The power supply on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission and / or the FORCED OFF wiring.
No display	• The power supply on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller, the transmission and / or the FORCED OFF.

⚠ CAUTION

If interior finish work is continuing on completion of the test run of the air conditioner, explain the customer not to operate the air conditioner until the interior finish work is completed for the protection of the air conditioner.
Otherwise, substances that will be generated from interior finish work materials, such as paint and adhesive agents, may contaminate the air conditioner.

17. Installation of outdoor unit

17.1 RZR18PVJU / RZR24PVJU / RZR30PVJU / RZQ18PVJU9 / RZQ24PVJU9 / RZQ30PVJU

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Read these "SAFETY CONSIDERATIONS for Installation" carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation.
Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.
Always use a licensed installer or contractor to install this product. Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.
Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** ..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE** ..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.**
- **If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.**
- **After completing the installation work, check that the refrigerant gas does not leak throughout the system.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.**
- **Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.**
- **When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire, or the unit falling.**
- **Install the air conditioner on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons, or earthquakes when installing. Improper installation 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, state, and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.**

3P281953-2A

- When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire, or the terminals overheating.
- Before touching electrical parts, turn off the unit.
- Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.
- Securely fasten the outdoor unit terminal cover (panel). If the terminal cover/panel is not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.
- When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.
- Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.

⚠ CAUTION

- Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.
- Do not allow children to play on or around the unit to prevent injury.
- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- Heat exchanger fins are sharp enough to cut.
  To avoid injury wear glove or cover the fins when working around them.
- Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.
- Insulate piping to prevent condensation.
- Be careful when transporting the product.
- Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.
- Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.
- Refrigerant R410A in the system must be kept clean, dry, and tight.
  (a) Clean and Dry -- Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.
  (b) Tight -- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping Work and follow the procedures.
- Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.
- The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.
- Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.
- Do not install the air conditioner in the following locations:
  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.
  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.
  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.
- Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.

⚠ NOTE

- Install the power supply and control wires for the indoor and outdoor units at least 3.5 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 feet may not be sufficient to eliminate the noise.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.
- If the conventional refrigerant and refrigeration oil are mixed in R410A, the refrigerant may deteriorate.

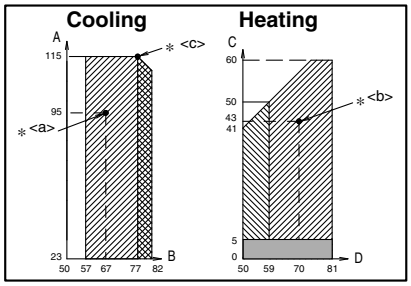
- **This air conditioner is an appliance that should not be accessible to the general public.**
- **The wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.**

〈**Safety Precaution**〉
The PCI Data Station is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

2. INTRODUCTION

2-1 Standard operation limit

The figures below assume following operating conditions for indoor and outdoor units:
Equivalent pipe length.....25 ft.
Level difference.....0 ft.



A Outdoor temperature (°FDB)
B Indoor temperature (°FWB)
C Outdoor temperature (°FWB)
D Indoor temperature (°FDB)
Range for continuous operation
Range for pull down operation
Range for warming up operation
Range for operation

2-2 Technical specifications

(∗<a> and ∗<b> in the table indicate the operating condition (shown in the left figure).)

Model		RZQ18PVJU RZR18PVJU	RZQ24PVJU RZR24PVJU	RZQ30PVJU RZR30PVJU	Precaution
Refrigerant		R410A			
Power		208/230V 60Hz			
[FAQ] Wall mounted					
Cooling (MBh)		18.0	24.0	–	∗<a>
Heating (MBh) (RZQ only)		20.0	26.0	–	∗<b>
[FCQ] Ceiling mounted					
Cooling (MBh)		18.0	24.0	30.0	∗<a>
Heating (MBh) (RZQ only)		20.0	27.0	34.0	∗<b>
[FHQ] Ceiling Suspended					
Cooling (MBh)		18.0	24.0	30.0	∗<a>
Heating (MBh) (RZQ only)		20.0	27.0	34.0	∗<b>
(RZQ only)					
[FTQ] Air Handling Unit					
Cooling (MBh)		18.0	24.0	–	∗<a>
Heating (MBh)		20.0	26.0	–	∗<b>
Dimensions **H × W × D**	(inch)	30-5/16 × 35 7/16 × 12 5/8			
Weight	(lb.)	150			
Connections					
Gas	(inch)	5/8			
Liquid	(inch)	3/8			

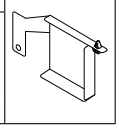
2-3 Electrical specifications

(∗<c> in the table indicate the operating condition (shown in the left figure).)

Model		RZQ18PVJU RZR18PVJU	RZQ24PVJU RZR24PVJU	RZQ30PVJU RZR30PVJU	Precaution
Power					
Phase		~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			
Voltage tolerance	(%)	±10			
Max.Overcurrent Protective device	(A)	20			
Min. Circuit Amps.	(A)	16.5			∗<c>
Compressor					
Phase		3~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			

2-4 Accessories

Confirm that the following accessories are supplied.

Clamp	Insulation tube				Cover (Handle)
	(Large-1)	(Large-2)	(Small-1)	(Small-2)	
					
(1 pc.)	(2 pcs.)	(1 pc.)	(2 pcs.)	(1 pc.)	

Screw	Conduit mounting plate		Others
			• Installation manual
(1 pc.)	(2 pcs.)	(2 pcs.)	

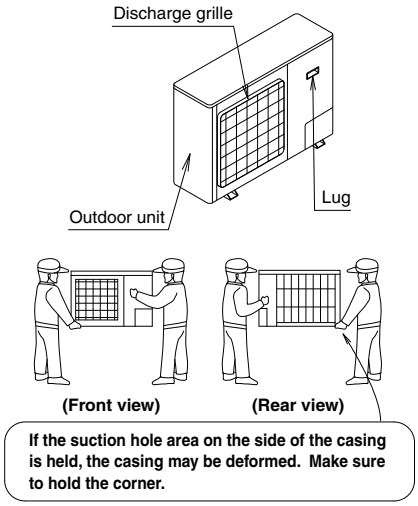
2-5 Main components

For main components and function of the main components, refer to the Engineering Data Book.

3. BEFORE INSTALLATION

〈**Bringing-in**〉

Bring in the outdoor unit slowly by holding the lugs provided on the left and right sides as shown in the figures below.
(Take care so that hands and objects do not touch the fin on the rear.)



◎ Make sure to use accessories and specified specification parts in the installation work.

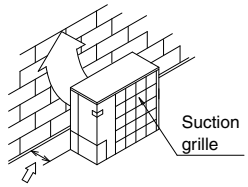
4. SELECTION OF INSTALLATION LOCATION

The refrigerant R410A itself is nontoxic, nonflammable and safe. If the refrigerant should leak however, its concentration may exceed the allowable limit depending on room size. Due to this it could be necessary to take measures against leakage. Refer to the chapter "Caution for refrigerant leaks".

(1) Select a proper location satisfying the following requirements with approval of the customer.
- Sufficient ventilation is secured.
- Adjacent houses are not annoyed.
- The foundation is strong enough to support the weight and withstand vibrations of the outdoor unit, and the location is safe and allows horizontal installation.
- The outdoor unit is exposed to rain as less as possible.
- The space for installation and servicing is secured around the outdoor unit.
- The indoor/outdoor piping length and wiring length are within the allowable range.

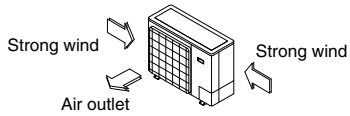
(2) When installing the outdoor unit in a location affected by strong wind, pay special attention to the following items.
- If strong wind whose velocity is 11 mph or more blows to the outdoor unit from the air outlet side, the air flow rate of the outdoor unit is reduced, the outlet air is sucked again (short-circuit), and the following effect may be caused:
  - The capacity is deteriorated.
  - The adhered frost increases during heating operation.
  - The operation is stopped by pressure rise.
- If excessive strong wind continuously blows from the air outlet side of the outdoor unit, the fan may rotate in the reverse direction at high speed, and lead to damage. Install the outdoor unit in reference to the following figures.

• Position the air outlet side toward the building wall, fence or windbreak screen.



(Secure the space for installation and servicing.)

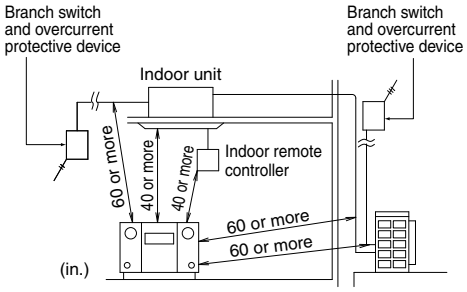
• Let the air outlet direction face be at right angles to the wind direction.



(3) When installing the outdoor unit in a location with heavy snowfall, pay special attention to the following items:
- Prepare strong foundation.
- Attach the snow hood (optional accessory).
- Remove the suction grill on the rear so that snow will not be accumulated in the rear fin.

(4) When there is a possibility of short-circuit depending on the ambient situation, use the wind direction adjusting plate (optional accessory).

(5) The inverter type air conditioner may cause noise in electric products.
When selecting an installation location, keep sufficient distance from the air conditioner units and wiring to radios, personal computers, stereos, etc. as shown in the figure below.
In areas with weak electric waves, keep a distance of 120 in. or more from the indoor remote controller, etc., put the power cables and connection cables in conduit tubes, and ground the conduit tubes.



⚠ DANGER

- Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.
- Refrigerant is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion , especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

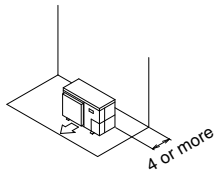
Installation place (unit: inch)

〈**Cautions on continuous installation**〉

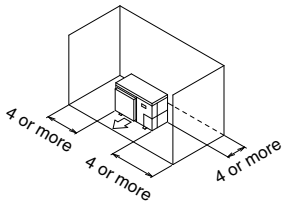
- The connection piping outlet direction in the continuous installation shown in the figures below is frontward or downward.
- When routing the piping rearward, secure space of 10 in. or more on the right side of the outdoor unit. (The unit of numeric values below is “inch”.)
- Make some space for wiring with conduit and servicing between the units.

(A) When an obstruction is present on the air inlet side

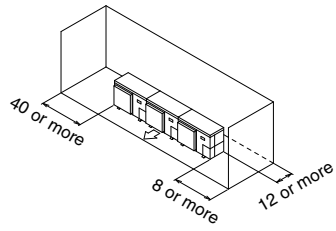
- **When the upward area is open**
  - **(1) When one outdoor unit is installed individually**
    - When an obstruction is present only on the air inlet side



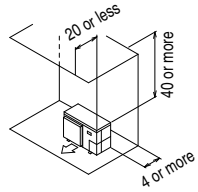
- When an obstruction is present on the both sides



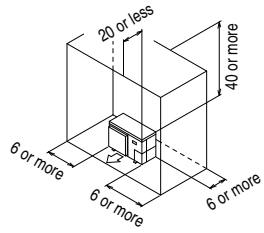
  - **(2) When two or more outdoor units are installed side by side**
    - When an obstruction is present on the both sides



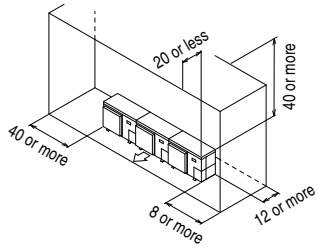
- **When an obstruction is present also in the upward area**
  - **(1) When one outdoor unit is installed individually**
    - When an obstruction is present also on the air inlet side



    - When an obstruction is present also on the air inlet side and both sides



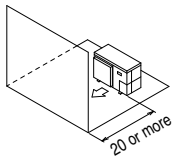
  - **(2) When two or more outdoor units are installed side by side**
    - When an obstruction is present also on the air inlet side and both sides



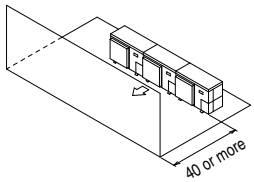
(B) When an obstruction is present on the air outlet side

- **When the upward area is open**

(1) When one outdoor unit is installed individually

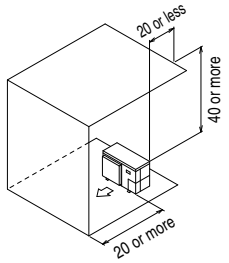


(2) When two or more outdoor units are installed side by side

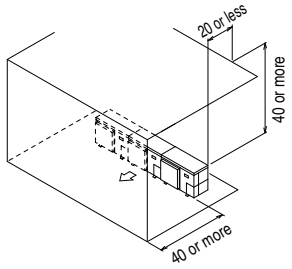


- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually



(2) When two or more outdoor units are installed side by side



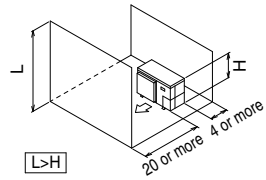
(C) When an obstruction is present on both the air inlet and air outlet sides

<Pattern 1>

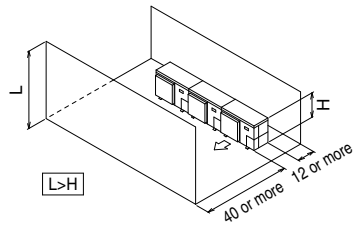
When an obstruction on the air outlet side is higher than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

- **When the upward area is open**

(1) When one outdoor unit is installed individually

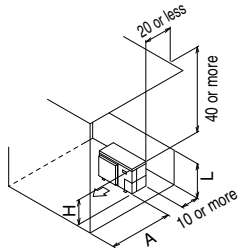


(2) When two or more outdoor units are installed side by side



- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually



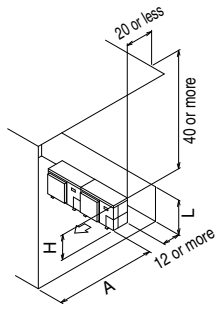
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	30
	1/2H < L ≤ H	40
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2) When only two outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	40
	1/2H < L ≤ H	50
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

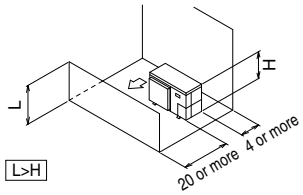
1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

<Pattern 2>

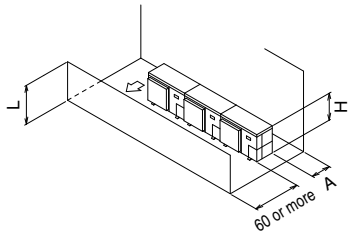
When an obstruction on the air outlet side is lower than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

- **When the upward area is open**

(1) When one outdoor unit is installed individually



(2) When two or more outdoor units are installed side by side

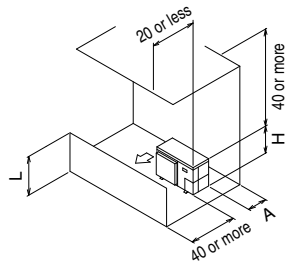


The dimensional relationship between H, L and A is as shown in the table below.

L	A
0 < L ≤ 1/2H	10
1/2H < L ≤ H	12

- **When an obstruction is present also in the upward area**

(1) When one outdoor unit is installed individually



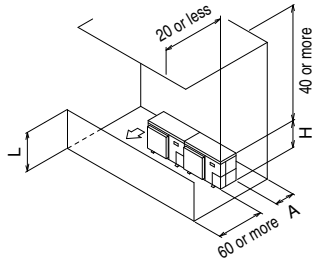
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	4
	1/2H < L ≤ H	8
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2) When only two outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

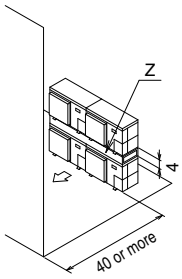
	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Install the frame to achieve "L ≤ H".**	

⚠ NOTE

1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

(D) When outdoor units are stacked

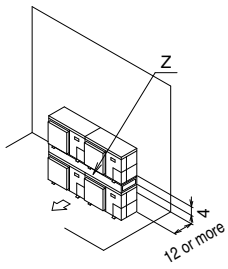
(1) When an obstruction is present on the air outlet side



NOTE

1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not by-pass there.

(2) When an obstruction is present on the air inlet side

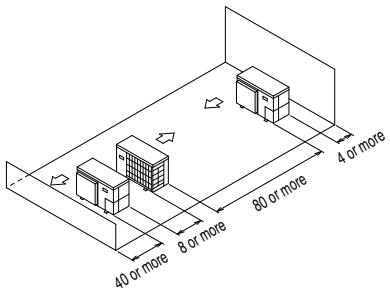


NOTE

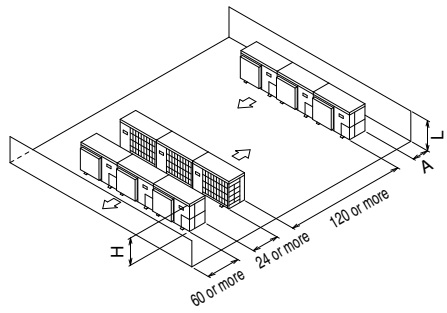
1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not by-pass there.

(E) When outdoor units are installed in rows (on the roof-top, etc.)

(1) When one outdoor unit is installed in each row



(2) When two or more outdoor units are installed side by side

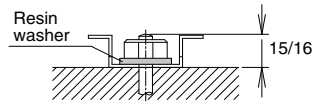


The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Installation is not allowed.**	

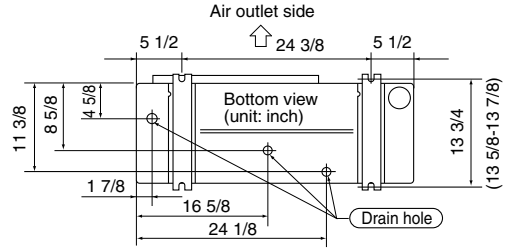
5. CAUTIONS ON INSTALLATION

- Before installation, confirm the strength and levelness of the foundation so that vibrations and noise are not generated.
- Fix the outdoor unit securely on a rigid base with foundation bolts as shown in the foundation drawing below.
  (Prepare 4 sets of commercially available M12-type or equivalent foundation bolts, nuts and washers.)
- Use resin washers to prevent the paint from being scratched off and rusting.
- The foundation bolts should be protruded by 15/16 in.
  (Refer to figure)



〈〈**Drain treatment**〉〉

- In a location where drain from the outdoor unit may cause troubles (for example, where drainage may splash on general passersby), perform the drain piping work using the drain plug (optional).
- For drain treatment, space of at least 4 in. is required under the bottom frame of the outdoor unit.
- In the drain piping work, make sure that drainage is discharged securely.
  (When routing the piping downward, check for water leakage.)



3P281953-2A

6. REFRIGERANT PIPING WORK

⚠ CAUTION

<To piping technician>

- **Make sure to open the stop valves after finishing the piping work. (Refer to the table shown in " 6-7 Additional refrigerant charge".)**
  (Operating the air conditioner with the stop valve shut may damage the compressor.)
- Use R410A to add refrigerant. (The R410A refrigerant cylinder has a pink stripe painted around it.)
  All field piping must be installed by a licensed refrigeration technician and must comply with relevant local and national regulations.
- **BRAZING REFRIGERANT PIPING**
  Do not use flux when brazing copper-to copper refrigerant piping.
  (Particularly for the HFC refrigerant piping) Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux.
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. Flux containing fluorine will damage refrigeration oil.)

⚠ NOTE

- Maximum piping length between the outdoor and indoor unit:

Indoor unit	FAQ FCQ FHQ	FTQ
Max. piping length	164 ft.	98 ft.

- Installation tools:
  Make sure to use installation tools (gauge manifold charge hose, etc.) that are exclusively used for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils such as SUNISO and moisture) from mixing into the system.
  (The screw specifications differ for R410A and R407C.)
  Vacuum pump (use a 2-stage vacuum pump with a non-return valve):
  1. Make sure the pump oil does not flow oppositely into the system while the pump is not working.
  2. Use a vacuum pump which can evacuate to –14.6 psi.

6-1 Selection of piping material

1. Foreign materials inside pipes (including oils for fabrication) must be 0.14gr/10ft. or less.
2. Use the following material specification for refrigerant pipping:
   - Construction material: Phosphoric acid deoxidized seamless copper for refrigerant.
   - Size: liquid pipe: ϕ3/8"
     gas pipe: ϕ5/8"

6-2 Protection of piping

- Protect the piping to prevent moisture and dusts from coming into the piping.
- Especially, pay attention when passing the piping through a hole or connecting the end of piping to the outdoor.

Location	Working period	Protection method
Outdoor	1 month or more	Pinch pipes
	Less than 1 month	Pinch or tape pipes
Indoor	Regardless of period	

6-3 Piping connection

- **For handling of stop valves, refer to "Stop valve operation method" in "6-7 Additional refrigerant charge".**
- **Only use the flare nuts attached to the stop valves. Using different flare nuts may cause the refrigerant to leak.**
- **Be sure to perform a nitrogen blow when brazing.**

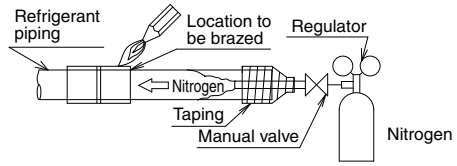
(Brazing without performing nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film inside the pipes, adversely affecting valves and compressor in the refrigerating system and preventing normal operation.)

⚠ DANGER

- Use of oxygen could cause an explosion resulting in severe injury or death. Only use nitrogen gas.
- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

⚠ NOTE

- When brazing with blowing nitrogen, set the nitrogen pressure to 2.9 psi or less by using a pressure reducing valve.



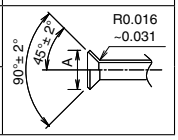
⚠ CAUTION

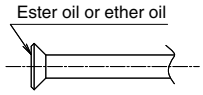
- Do not use anti-oxidants when brazing.
  Residue can clog pipes and break the unit.

◎ Do not let any refrigerant other than the specified refrigerant enter the refrigerant system.
◎ Do not let any gas such as air enter the refrigerant system.

〈**Precautions when connecting the piping**〉

- See the following table for flare dimensions.
- When connecting the flare nuts, apply refrigeration oil to the inside of the flares and turn them three or four times at first. (Use ester oil or ether oil.)
- See the following table for tightening torque. (Applying too much torque may cause the flares to crack.)
- After connecting all the piping perform a gas leak check by using nitrogen.

Pipe size	Tightening torque (ft·lbf)	Flare dimension A (in.)	Flare shape (in.)
ϕ3/8”	24.1 - 29.4	0.504 - 0.520	
ϕ5/8”	45.6 - 55.6	0.760 - 0.776	



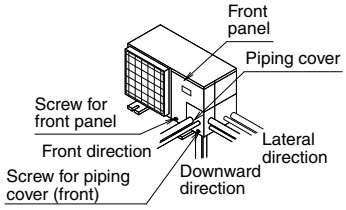
- If you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below. After the work is finished, make sure to check that there is no gas leak.
- When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases.
  From that position, further tighten the flare nut the angle shown below.

Pipe size	Tightening angle (Guideline)	Recommended arm length of tool (in.)
ϕ3/8”	60°~90°	Approx. 7 7/8
ϕ5/8”	30°~60°	Approx. 11 13/16

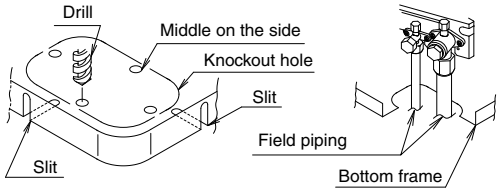
Disposal requirements
Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts should be comply the relevant local and national regulations.

6-4 Refrigerant piping work procedure

◎ The field piping can be connected in three directions.



◎ When connecting the piping downward, remove the knockout hole by making four holes in the middle on the each side of the knockout hole with a drill.



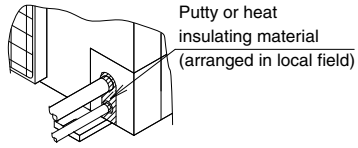
Then cut out the corner of the bottom frame along the slits (in two positions) by using a hacksaw.
◎ After removing the parts, it is recommended to apply repair paint on the edges, to prevent rusting.

Cautions on connecting the connection piping

- When it is expected that water condensed in the stop valve will reach the indoor unit through the gap between the heat insulating material and the piping (for example, when the outdoor unit is installed in a higher position than the indoor unit), take proper action such as caulking the connection area.

[Measures to prevent invasion of small creatures and litter]

- Block all gaps in the piping penetration areas with putty or heat insulating material (arranged in the local field) as shown in the figure below.
  (If small creatures such as insects or litter enter the outdoor unit, a short-circuit may be caused inside the control box.)



6-5 Heat insulation of piping

- Make sure to insulate the field piping (on both the liquid line and gas line) and refrigerant branching kit.
  (If they are not insulated, water leakage may be caused.)

  Be sure to used insulation that is designed for use with HVAC systems.

- Reinforce the refrigerant piping according to the installation environment. If it is not reinforced, condensate may form on the surface of the insulation.

⚠ WARNING

- Make sure to insulate the field piping up to the piping connection area inside the unit. If the piping is exposed, dew condensation and burn by contact may be caused.

6-6 Airtight test and vacuum drying

The unit has been checked for leaks by the manufacturer. Confirm that the valves are firmly closed before airtight test or vacuumdrying.
To prevent entry of any impurities and insure sufficient pressure resistance, always use the special tools dedicated for R410A.

Perform the following inspections securely after the piping work.

- **Airtight test** - Make sure to use nitrogen gas. (For the service port position, refer to the figure in “**Stop valve operation method**”.)
  [Procedure] Pressurize the air conditioner from the liquid pipe and gas pipe up to 450 psi (Make sure not to exceed 450 psi). When the pressure does not drop for 24 hours, the piping work shall be accepted.
  If the pressure drops, check for leakage positions. (Confirm that there is no leakage, then release nitrogen.)

- **Vacuum drying** - Use a vacuum pump which can evacuate up to –14.6 psi or less.
  [Procedure] Operate the vacuum pump for evacuation for 2 hours or more using both liquid pipe and gas pipe until the vacuum pressure reaches –14.6 psi or less. Leave the air conditioner at –14.6 psi or less for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gage does not increase.
  (If the vacuum pressure increases, the system may contain moisture or have leakage.)

If there is a possibility of moisture remaining in the piping (for example, when there is a possibility of dew condensation inside the piping because the piping work was performed in the rainy season or over a long period of time, or when rainwater may have entered the piping during the work)
Perform evacuation described above for 2 hours (vacuum drying), pressurize the air conditioner up to 7 psi (vacuum break) with nitrogen gas, then evacuate the air conditioner using the vacuum pump for 1 hour to achieve –14.6 psi or less (vacuum drying).
(If the vacuum pressure does not reach –14.6 psi or less even after evacuation for 2 hours or more, repeat vacuum break and vacuum drying.) Leave the air conditioner in the vacuum status for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gauge does not increase.

6-7 Additional refrigerant charge

⚠ WARNING

- To avoid injury always use protective gloves and eye protection when charging refrigerant.
- To avoid injury do not charge with unsuitable substances. Use only the appropriate refrigerant.

⚠ NOTE

- Refrigerant cannot be charged until field wiring has been completed.
  Refrigerant may only be charged after performing the airtight test and the vacuum drying (see above).
  When charging refrigerant into the system, take care that its maximum allowable charge is never exceeded, in view of the danger of liquid hammer.
  Refrigerant containers shall be opened slowly.
  To avoid compressor breakdown, do not charge the refrigerant more than the specified amount to raise the condensing pressure.

- This outdoor unit is factory charged with refrigerant.
- Charge the additional refrigerant calculated by the formula below.

Additional charging amount	=	Liquid piping length × 0.036	+	Additional charging depended on type of indoor unit
(lb.)		(ft.)×0.036		A (lb.)

Indoor unit	FAQ FCQ FHQ	FTQ
Additional charging A (lb.)	0	1.54

Record the additional amount to the label stuck on the back of front panel.

- Charge the refrigerant to the liquid pipe in its liquid state. Since R410A is a mixed refrigerant, its composition changes if charged in a state of gas and normal system operation would no longer be assured.
- Before filling, check whether the tank has a siphon attached or not.

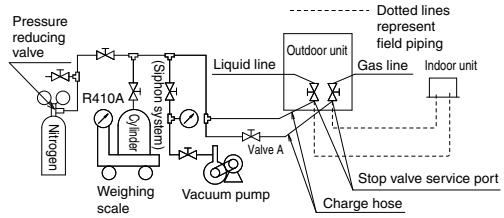
How to fill a tank with a siphon attached.

Fill with the tank upright.
(There is a siphon tube inside, so there is no need to turn the tank upside-down.)

Other ways of filling the tank

Fill with the tank upside-down.

- After the vacuum drying is finished, charge the additional refrigerant in its liquid state through the liquid stop valve service port.
  Taking into account following instructions:
  1. Check that gas and liquid stop valves are closed.
  2. Charge the specified amount of refrigerant.
- If the outdoor unit is not in operation and the total amount cannot be charged, follow the procedures for additional refrigerant charge shown below.
- Make sure to use installation tools you exclusively use on R410A installations to withstand the pressure and to prevent foreign materials from mixing into the system.
- Procedures for charging additional refrigerant.



See the “Cautions on service” label on the back of the front panel for the settings for operation after replenishing refrigerant.

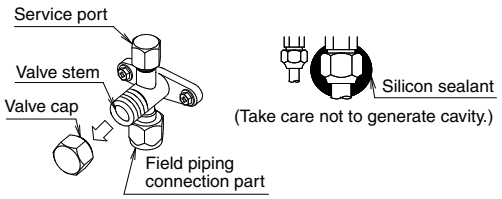
1. Open the gas line stop valve (leaving the liquid line stop valve, valve A in the diagram above, close) and perform the operation to add the refrigerant.
2. Once the appropriate amount of refrigerant is in, press the confirmation button (BS3) on the outdoor unit PC board (A2P), and stop operation.
3. Open the stop valves quickly (both liquid and gas line valves).
   (This must be done quickly to avoid the possibility that the pipe might burst.)

C: 3P281953-2A

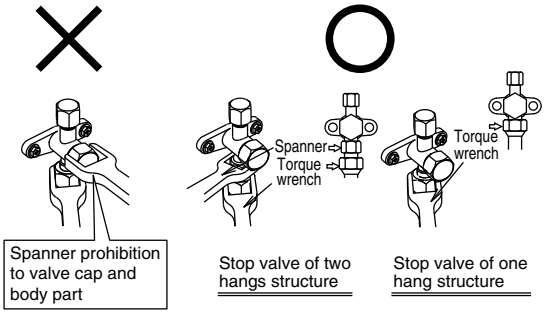
Stop valve operation

Cautions on handling the stop valve

- The figure below shows the name of each part required in handling the stop valve. At the time of shipment, the stop valve is closed.



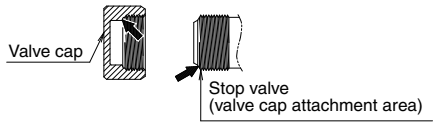
- If only a torque wrench is used to loosen or tighten the flare nut, the side plate may be distorted. Make sure to fix the stop valve with a spanner, then loosen or tighten the flare nut with a torque wrench.



- When it is expected that the operating pressure will be low (for example, when cooling will be performed while the outside air temperature is low), seal sufficiently the flare nut in the stop valve on the gas line with silicon sealant to prevent freezing.

Cautions on handling the valve cap

- The valve is sealed in the arrow area. Take care not to damage the arrow area.



- After handling the valve, make sure to tighten the valve cap securely.

Liquid line	Gas line
10.0~12.2 ft·lbf	16.6~20.3 ft·lbf

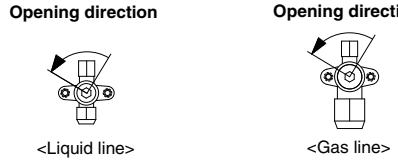
Cautions on handling the service port

- Use charge hose equipped with push in the work.
- After the work, make sure to tighten the valve cap securely. Tightening torque.....8.5~10.3 ft·lbf

[Stop valve operation method]
Prepare hexagon wrenches (whose size is 4 mm and 6 mm).

How to open the stop valve
1. Insert a hexagon wrench into the valve stem, and turn the valve stem counterclockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is open.

How to close the stop valve
1. Insert a hexagon wrench into the valve stem, and turn the valve stem clockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is closed.



7. ELECTRIC WIRING WORK

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

⚠ WARNING

- Disconnect all power to unit to avoid possible electric shock during installation.
- Use only specified wire and connect wires to terminals tightly. Be careful that wires do not place external stress on terminals. Keep wires in neat order so as to not to obstruct other equipment. Incomplete connections could result in overheating, and in worse cases, electric shock or fire. For the details, refer to "**7-3 Power supply wiring connection procedure**".

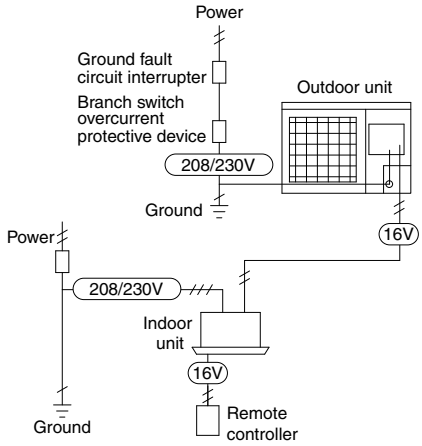
⚠ CAUTION

<To electrician>
- Do not operate the air conditioner until the refrigerant piping work is completed. (Operating the air conditioner before the refrigerant piping work is completed may damage the compressor.)
- Install a ground fault circuit interrupter. (The inverter is provided in the air conditioner. In order to prevent malfunction of the ground fault circuit interrupter itself, use a breaker resistant to higher harmonics.)

- Electricians having sufficient knowledge should perform the electric wiring work. All wiring must comply with local electrical codes and National Electrical Code (NEC).

- Perform the electric wiring work in accordance with the "electric wiring diagram label".
  Make sure to turn OFF the branch switch and overcurrent protective device before starting the work.
- Perform grounding to the indoor unit and outdoor unit.
- Use only copper wires.
- Make sure to turn the power off before starting the electric wiring work.
  Do not turn ON any switch until the work is completed.
- The outdoor unit has an inverter which generates noise and charges the outer casing with the leakage current. The outdoor unit should be grounded so that the effect of the generated noise on other equipment can be reduced, and that the outer casing can be discharged.
- As this unit is equipped with an inverter, installing a phase advancing capacitor will not only reduce the power factor improvement factor, but may also cause the capacitor to overheat due to high-frequency waves. Therefore, never install a phase advancing capacitor.
- Never push excessive electric wires into the units.
- Protect electric wires with conduit tubes or vinyl tubes so that they will not be damaged by edges of knockout holes.
- Fix electric wires with clamps as accessories so that they will not come to contact with pipes and stop valves.
  (Refer to "**7-3 Power supply wiring connection procedure**".)

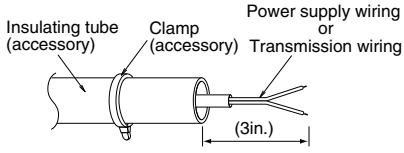
7-1 Connection example of whole system wiring



7-2 Routing power supply wiring and transmission wiring

Let the power supply wiring with a conduit pass through one of the knockout holes on the front or side cover, and let the transmission wiring with a conduit pass through another knockout hole.

- For protection from uninsulated live parts, thread the power supply wiring or the transmission wiring through the included insulating tube and secure it with the included clamp.



〈**Precautions when knocking out knockout holes**〉

- To punch the knockout hole, hit it with a hammer.
- After removing the knockout hole, it is recommended that the edges should be painted to prevent rusting.

⚠ CAUTION

- Use conduit for both the power supply wiring and transmission wiring.
- Outside the unit, make sure to keep the wirings 5 inches away.
  Otherwise, the outdoor unit may be affected by electrical noise (external noise), and malfunction or fail.
- Be sure to connect the power supply wiring to the terminal block and secure it as described in "7-3 Power supply wiring connection procedure".
- Fix the wiring between the units in accordance with "7-4 Transmission wiring connection procedure".
- Secure the wirings with the clamps (accessory) so that do not touch the piping.
- Make sure the wirings will not be pinched by the front panel, and close the panel firmly.
- Route the conduit along the unit by using a elbow socket and so on to prevent it from being stepped on.

7-3 Power supply wiring connection procedure

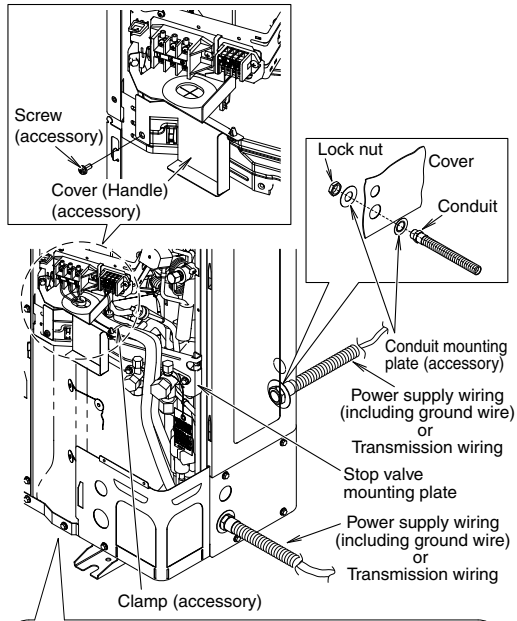
⚠ WARNING

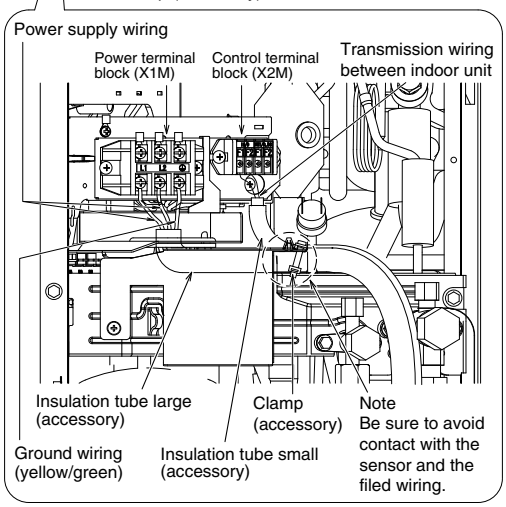
- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.

Install a ground fault circuit interrupter

- Is necessary to install a ground fault circuit interrupter to prevent electric shocks or fire accidents.

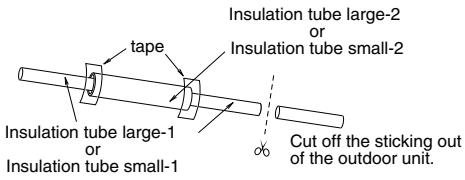
Model	Phase and frequency	Voltage	Max.Overcurrent Protective Device	Min. Circuit Amps.
RZQ18PVJU RZR18PVJU	~ 60Hz	208/230V	20A	16.5A
RZQ24PVJU RZR24PVJU				
RZQ30PVJU RZR30PVJU				





How to Insulation tube.

- Use the insulation tube large to cover the power supply wiring.
  Use the insulation tube small to cover the transmission wiring.
- Joint the insulation tube with the tape and cut off the tube sticking out of the outdoor unit.

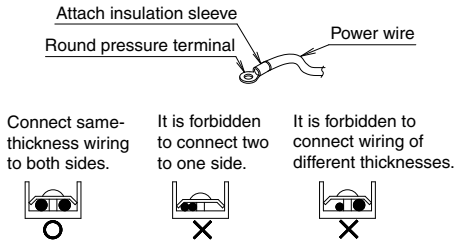


⚠ CAUTION

- After finishing the electric wiring work, confirm that all the wirings are connected securely.

〈〈**Precautions when laying power wiring**〉〉

- Two electric wires of different thickness cannot be connected to the power terminal block.
  (Slack in the electric wires may generate abnormal heat.)
- Use round pressure terminals with insulting sleeve for connection to the power terminal block.
  If such terminals are not available for unavoidable reasons, connect an electric wire of the same thickness to each side as shown in the figure.



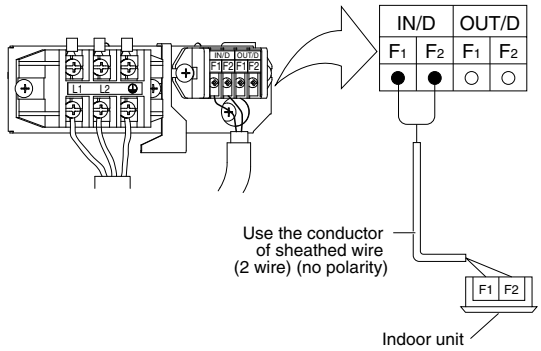
Make sure to observe the following items. If they are not observed, abnormal heat may be generated by slack in electric wires, etc.

- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws.
  A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table below for tightening torque for the terminal screws.

Tightening torque (ft·lbf)		
M5	(Power supply and ground terminal block)	1.76 ~ 2.15
M4	(Shielded ground)	0.87 ~ 1.06
M3.5	(Transmission wiring terminal block)	0.58 ~ 0.72

7-4 Transmission wiring connection procedure

- **If an excessive force is applied while connecting a cable to the terminal block on the PC board, the PC board may be damaged.**



⚠ CAUTION

- For low-noise operation, it is necessary to install the optional "External control adaptor for outdoor unit".
  For details, see the installation manual attached to the adaptor.

Caution on the wiring length between units

Make sure to observe the restrictions below. If they are not observed, transmission error may occur.
Maximum wiring length: 3280 ft.

Cautions on the wiring between units

- Never connect 208/230V to the terminal block for the transmission wiring.
  Doing so will break the entire system.
- The transmission wiring from the indoor unit must be connected to the F1/F2 (TO IN/D UNIT) terminals on the PC board in the outdoor unit.

∗ Make sure to use sheathed two-core cables of AWG18-16 in the wiring shown above.

∗ **All cables used in the wiring between the units should be procured on the site.**

8. CHECKS AFTER COMPLETION OF WORK

After completing the work, make sure to confirm the following items:

1. Connection of drain piping and removal of transport fittings:
   Refer to "**5. CAUTIONS ON INSTALLATION**".
2. Connection of power supply wiring and tightening of screws:
   Refer to "**7-3 Power supply wiring connection procedure**".
3. Connection of transmission wiring and tightening of screws:
   Refer to "**7-4 Transmission wiring connection procedure**".
4. Freezing connection of refrigerant piping
   Refer to "**6. REFRIGERANT PIPING WORK**".
5. Piping size and heat insulation:
   Refer to "**6-1 Selection of piping material**", "**6-5 Heat insulation of piping**".
6. Check of stop valve:
   Confirm that the stop valve is open on both the liquid line and gas line.
7. Record of amount of additional refrigerant:
   Record the amount on the label stuck on the back of the front panel.
8. Measurement of insulation in main power circuit:
   - Use the megatester for 500 V.
   - Do not use any megatester for low voltage electric circuits except 230 V.
     (Wiring between the outdoor unit and the indoor unit)

⚠ CAUTION

<To piping technician>

- Make sure to open the stop valve after finishing the piping work.
  (Operating the air conditioner with the stop valve shut may damage the compressor.)

9. TEST RUN PROCEDURE

A crankcase heater is mounted for smooth startup. Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

⚠ WARNING

- Make sure to close the front panel before leaving the outdoor unit in the power ON status.
- To avoid injury, always make sure that the overcurrent protective device on the power supply panel of the installation is switched off before doing any work.

Cautions before turning on the power

- **Put the insulating cover securely onto the control box.**
- **After turning on the power, check the settings and LED indicators on the PC board (A1P) in the outdoor unit through the opening of the insulating cover.**

9-1 Power on and check operation

- Make sure to perform the check operation after installation.
  (If the air conditioner is operated using the indoor remote controller without performing the check operation, the malfunction code "U3" is displayed in the indoor remote controller, and normal operation is disabled.)

- In the check operation, the status of the outdoor unit is checked, and incorrect wiring is checked for.

(1) • Close the front panel of the outdoor unit.
• Turn ON the power to the outdoor unit and indoor unit.

⚠ **Caution** Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

(2) • Open the front panel of the outdoor unit.
• Check the LED on the PC board (A1P and A2P) in the outdoor unit to see if the data transmission is performed normally.

The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.

	A1P	A2P						
LED display (Default status before delivery)	SERVICE MONITOR	MODE	TEST/HWL	IND	MASTER	SLAVE	L.N.O.P.	DEMAND
	HAP	**H1P**	**H2P**	**H3P**	**H4P**	**H5P**	**H6P**	**H7P**
Outdoor unit installed	◑	●	●	○	●	●	●	●

LED display: ● OFF ○ ON ◑ Blinking

(3) • When performing the low-noise operation (L.N.O.P.) or demand (DEMAND) operation upon request from the customer, perform the setting using the pushbutton switches (BS1 to BS5) on the PC board (A2P) in the outdoor unit.
• Press each pushbutton switch from the opening of the insulation cover. (Do not remove the insulation cover.)

• The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.
• Before using the pushbutton switches (BS1 to BS5) for setting, confirm that the microcomputer (SERVICE) monitor is lit.
• For the setting method, refer to the [Cautions on service] label attached on the back of the front panel of the outdoor unit. (Make sure to write the contents of setting on the [Cautions on service] label.)

(4) Confirm that the stop valves are open on both the liquid and gas lines. If they are closed, open them.

⚠ **Caution** Do not leave any stop valve closed. Otherwise the compressor will fail.

(5) Press and hold the test run button (BS4) for 5 seconds or more to start the check operation. For the details, refer to the **Check operation procedure** on the [Cautions on service] label.

• When leaving the outdoor unit during the check operation for unavoidable reasons, ask another installation worker to watch the outdoor unit, or close the front panel.
• The system operates the check operation for about 15 minutes (30 minutes maximum), then stops automatically.
The system can start normal operation about 5 minutes after the check operation if the remote controller does not display any malfunction code.
• During the check operation, the status under execution is indicated on the remote controller.

(6) After the check operation, make sure to close the front panel of the outdoor unit.

<Cautions on check operation>
- If the air conditioner is started within about 12 minutes after the power of the indoor/outdoor unit is turned on, the H2P indicator lights and the compressor does not run. Confirm that the LED status is as shown in the table in (2) in "**9-1 Power on and check operation**" before starting the air conditioner.
- The air conditioner may require about 10 minutes maximum until it can start the compressor after start of operation. This period of time is required to homogenize the refrigerant status, and does not indicate any failure.
- The check operation does not provide any means of checking the indoor unit individually. For that purpose, perform the normal operation using the remote controller after finishing the check operation.
- The check operation is not available in any other mode such as the recovery mode.
- Before running a check on the unit, changing the indoor remote controller settings might cause the error code "UF" to be displayed and prevent a proper check to be run.

9-2 Checks in normal operation

- After finishing the check operation, operate the air conditioner normally. (Heating is not available if the outside air temperature is 75 °F or more. Refer to the operation manual supplied together with the unit.) (Heating is only available for RZQ-P models.)
- Confirm that the indoor and outdoor units are operating normally. (If a knocking sound is heard in the liquid compression of the compressor, stop the air conditioner immediately and energize the crankcase heater for a sufficient period of time, then start the operation again.)
- Check to see if cold (or hot) air is coming out of the indoor unit.
- Press the fan direction button and fan speed control button on the remote controller to see if the fan is operating normally.

<Cautions for normal operation check>
- Once stopped, the compressor will not start for about 5 minutes even if the "**ON/OFF**" button on the remote controller is pressed.
- When the system operation is stopped by the remote control, the outdoor unit may continue to operate for a further 3 minutes.
- If the system has not undergone the check operation by the test run button since it was first installed, a malfunction code "U3" is displayed. In this case, perform the check operation by referring to "**9-1 Power on and check operation**".

When a malfunction code is displayed in the remote controller

(Check a malfunction code in the remote controller connected to the indoor unit.)

Malfunction code	Cause	Solution
E3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
E4 F3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on all indoor unit remote controllers to "cooling."
	The refrigerant is insufficient.	• Check whether additional refrigerant charge has been finished correctly. • Calculate again the required amount of refrigerant to be charged based on the piping length, then charge additionally proper amount of refrigerant.
F6	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
U3	The check operation has not performed.	Perform the check operation.
U4	The power is not supplied to the outdoor unit.	Connect correctly the power supply wiring of the outdoor unit.
UA	Improper type of indoor unit is connected.	Check the type of indoor unit currently connected. If it is not proper, replace it with proper one.
UF	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The piping and wiring of the indoor unit are not connected correctly to the outdoor unit.	Confirm that the piping and wiring of the indoor unit are connected correctly to the outdoor unit.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on indoor unit remote controller to "cooling."
UH	The transmission wiring is not connected correctly.	Connect correctly the transmission wiring to the F1 and F2 (TO IN/D UNIT) terminals on the PC board (A1P) in the outdoor unit.

When nothing is displayed in the remote controller

- There might be a problem with the connection or transmission between the indoor unit and the remote controller. Check connections, and check for wire breakage.

⚠ CAUTION

<To piping technician>
<To electrician>
- **After finishing the test run and before using the unit by customer, confirm that the front panel and screws are attached securely to the unit.**

10. CAUTION FOR REFRIGERANT LEAKS

⚠ DANGER

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

(Points to note in connection with refrigerant leaks)

Introduction

The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available.

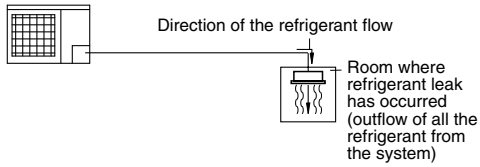
The Split System, like other air conditioning systems, uses R410A as refrigerant. R410A itself is an entirely safe non-toxic, non-combustible refrigerant. Nevertheless care must be taken to ensure that air conditioning facilities are installed in a room which is sufficiently large. This assures that the maximum concentration level of refrigerant gas is not exceeded, in the unlikely event of major leak in the system and this in accordance to the local applicable regulations and standards.

Maximum concentration level

The maximum charge of refrigerant and the calculation of the maximum concentration of refrigerant is directly related to the humanly occupied space in to which it could leak.

The unit of measurement of the concentration is lb./ft³ (the weight in lb. of the refrigerant gas in 1ft³ volume of the occupied space).

Compliance to the local applicable regulations and standards for the maximum allowable concentration level is required.



3P281953-2A

Pay a special attention to the place, such as a basement, etc. where refrigerant can stay, since refrigerant is heavier than air.

Procedure for checking maximum concentration

Check the maximum concentration level in accordance with steps 1 to 4 below and take whatever action is necessary to comply.

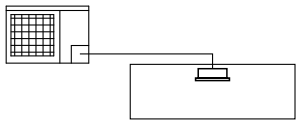
1. Calculate the amount of refrigerant (lb.) charged to each system separately.

amount of refrigerant in the unit (amount of refrigerant with which the system is charged before leaving the factory)	+	additional charging amount (amount of refrigerant added locally in accordance with the length or diameter of the refrigerant piping and type of indoor unit)	=	total amount of refrigerant (lb.) in the system

NOTE

- Where a single refrigerant facility is divided into 2 entirely independent refrigerant systems then use the amount of refrigerant with which each separate system is charged.

2. Calculate a room volume (ft^3)



3. Calculate the refrigerant concentration by using the results of the calculations in steps 1 and 2 above.

$$\frac{\text{total amount of refrigerant in the system}}{\text{volume } (ft^3) \text{ of the room in which there is an indoor unit installed}} \leq \text{maximum concentration level } (lb./ft^3)$$

4. Deal with the situations where the result exceeds the maximum concentration level.
Where the installation of a facility results in a concentration in excess of the maximum concentration level then it will be necessary to revise the system.
Please consult your dealer.

17.2 RZR36PVJU / RZR42PVJU / RZQ36PVJU9 / RZQ42PVJU9

DAIKIN

SPLIT SYSTEM Air Conditioners Installation manual

CONTENTS

1. SAFETY CONSIDERATIONS

Read these "SAFETY CONSIDERATIONS for Installation" carefully before installing air conditioning equipment. After completing the installation, make sure that the unit operates properly during the startup operation.
Instruct the customer on how to operate and maintain the unit. Inform customers that they should store this Installation Manual with the Operation Manual for future reference.
Always use a licensed installer or contractor to install this product.
Improper installation can result in water or refrigerant leakage, electrical shock, fire, or explosion.
Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER** ..... Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING**..... Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION**..... Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
It may also be used to alert against unsafe practices.

⚠ **NOTE**..... Indicates situations that may result in equipment or property-damage accidents only.

⚠ DANGER

- **Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.**
- **Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death. Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.**
- **If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes in contact with fire. Exposure to this gas could cause severe injury or death.**
- **After completing the installation work, check that the refrigerant gas does not leak throughout the system.**
- **Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.**
- **Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injuries or death by suffocation.**

⚠ WARNING

- **Only qualified personnel must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.**
- **When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.**
- **Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shocks, fire, or the unit falling.**
- **Install the air conditioner on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injuries.**
- **Take into account strong winds, typhoons, or earthquakes when installing. Improper installation 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, state, and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.**
- **Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.**
- **When wiring, position the wires so that the control box cover can be securely fastened. Improper positioning of the control box cover may result in electric shocks, fire, or the terminals overheating.**
- **Before touching electrical parts, turn off the unit.**
- **Be sure to install a ground fault circuit interrupter if one is not already available. This helps prevent electrical shocks or fire.**
- **Securely fasten the outdoor unit terminal cover (panel). If the terminal cover/panel is not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.**
- **When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R410A) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, resulting in injury.**
- **Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.**

⚠ CAUTION

- **Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.**
- **Do not allow children to play on or around the unit to prevent injury.**
- **Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.**

3PN07193-7H

- **Heat exchanger fins are sharp enough to cut. To avoid injury wear glove or cover the fins when working around them.**
- **Install drain piping to proper drainage. Improper drain piping may result in water leakage and property damage.**
- **Insulate piping to prevent condensation.**
- **Be careful when transporting the product.**
- **Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.**
- **Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.**
- **Refrigerant R410A in the system must be kept clean, dry, and tight.**
  - **(a) Clean and Dry -- Foreign materials (including mineral oils such as SUNISO oil or moisture) should be prevented from getting into the system.**
  - **(b) Tight -- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter Refrigerant Piping and follow the procedures.**
- **Since R410A is a blend, the required additional refrigerant must be charged in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.**
- **The indoor unit is for R410A. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to other units.**
- **Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.**
- **Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.**
- **Do not install the air conditioner in the following locations:**
  - **(a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen. Plastic parts may deteriorate and fall off or result in water leakage.**
  - **(b) Where corrosive gas, such as sulfurous acid gas, is produced. Corroding copper pipes or soldered parts may result in refrigerant leakage.**
  - **(c) Near machinery emitting electromagnetic waves. Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.**
  - **(d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.**
- **Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the customer to keep the area around the unit clean.**

⚠ NOTE

- **Install the power supply and control wires for the indoor and outdoor units at least 3.5 feet away from televisions or radios to prevent image interference or noise. Depending on the radio waves, a distance of 3.5 feet may not be sufficient to eliminate the noise.**
- **Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.**
- **Do not use the following tools that are used with conventional refrigerants: gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.**
- **If the conventional refrigerant and refrigerator oil are mixed in R410A, the refrigerant may deteriorate.**
- **This air conditioner is an appliance that should not be accessible to the general public.**
- **The wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.**

⟨Safety Precaution⟩

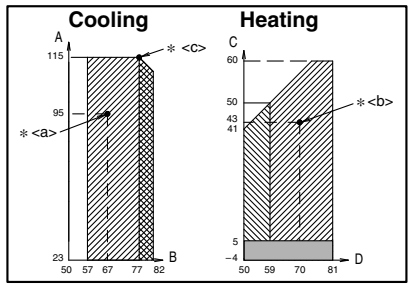
The PCI Data Station is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

2. INTRODUCTION

2-1 Standard operation limit

The figures below assume following operating conditions for indoor and outdoor units:

Equivalent pipe length ..... 25 ft.
Level difference ..... 0 ft.



A Outdoor temperature (°FDB)
B Indoor temperature (°FWB)
C Outdoor temperature (°FWB)
D Indoor temperature (°FDB)

Range for continuous operation
Range for pull down operation
Range for warming up operation
Range for operation

2-2 Technical specifications

(∗<a> and ∗<b> in the table indicate the operating condition (shown in the previous figure).)

Model		RZQ30PVJU9	RZQ36PVJU9 RZR36PVJU	RZQ42PVJU9 RZR42PVJU	Precaution
Refrigerant		R410A			
Power		208/230V 60Hz			
[FCQ] Ceiling mounted					
Cooling (MBh)		–	36.0	40.5	*<a>
Heating (MBh) (RZQ only)		–	39.5	41.5	*<b>
[FHQ] Ceiling suspended					
Cooling (MBh)		–	36.0	40.5	*<a>
Heating (MBh) (RZQ only)		–	37.5	39.5	*<b>
[FTQ] Air handling unit					
Cooling (MBh)		30.0	36.0	42.0	*<a>
Heating (MBh) (RZQ only)		34.0	40.0	47.0	*<b>
Dimensions H × W × D	(inch)	52-15/16 × 35-7/16 × 12-5/8			
Weight	(lb.)	283			
Connections					
Gas	(inch)	5/8			
Liquid	(inch)	3/8			

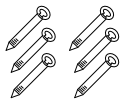
2-3 Electrical specifications

(*<c> in the table indicates the operating condition (shown in the previous figure).)

Model		RZQ30PVJU9	RZQ36PVJU9 RZR36PVJU	RZQ42PVJU9 RZR42PVJU	Precaution
Power					
Phase		~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			
Voltage tolerance	(%)	±10			
Max. Overcurrent Protective device	(A)	30			
Min. Circuit Amps.	(A)	27.0			*<c>
Compressor					
Phase		3~			
Frequency	(Hz)	60			
Voltage	(V)	208/230			

2-4 Accessories

Confirm that the following accessories are supplied.

Clamp	Insulation tube		Others
	Large	Small	
 (6 pcs.)	 (1 pc.)	 (1 pc.)	• Installation manual

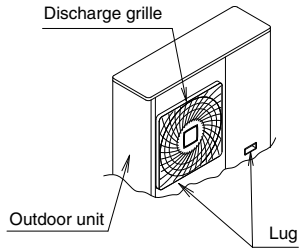
2-5 Main components

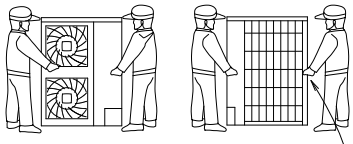
For main components and function of the main components, refer to the Engineering Data Book.

3. BEFORE INSTALLATION

<Bringing-in>

Bring in the outdoor unit slowly by holding the lugs provided on the left and right sides as shown in the figures below.
(Take care so that hands and objects do not touch the fin on the rear.)





(Front view) **(Rear view)**

If the suction hole area on the side of the casing is held, the casing may be deformed. Make sure to hold the corner.

◎ Make sure to use accessories and specified specification parts in the installation work.

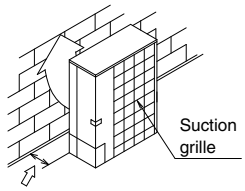
4. SELECTION OF INSTALLATION LOCATION

The refrigerant R410A itself is nontoxic, nonflammable and safe. If the refrigerant should leak however, its concentration may exceed the allowable limit depending on room size. Due to this it could be necessary to take measures against leakage. Refer to the chapter "Caution for refrigerant leaks".

(1) Select a proper location satisfying the following requirements with approval of the customer.
- Sufficient ventilation is secured.
- Neighbors not bothered by operation sound.
- The foundation is strong enough to support the weight and withstand vibrations of the outdoor unit, and the location is safe and allows horizontal installation.
- Minimal exposure to rain.
- The space for installation and servicing is secured around the outdoor unit.
- The indoor/outdoor piping length and wiring length are within the allowable range.

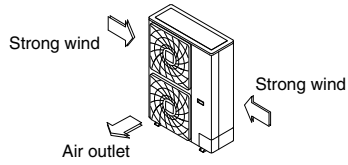
(2) When installing the outdoor unit in a location affected by strong wind, pay special attention to the following items.
- If strong wind whose velocity is 11 mph or more blows to the outdoor unit from the air outlet side, the air flow rate of the outdoor unit is reduced, the outlet air is sucked again (short-circuit), and the following effect may be caused:
  - The capacity is deteriorated.
  - The adhered frost increases during heating operation.
  - The operation is stopped by pressure rise.
- If excessive strong wind continuously blows from the air outlet side of the outdoor unit, the fan may rotate in the reverse direction at high speed, and lead to damage. Install the outdoor unit in reference to the following figures.

• Position the air outlet side toward the building wall, fence or windbreak screen.



(Secure the space for installation and servicing.)

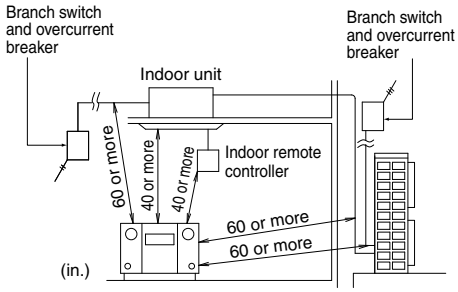
• Let the air outlet direction face be at right angles to the wind direction.



(3) When installing the outdoor unit in a location with heavy snowfall, pay special attention to the following items:
- Prepare strong foundation.
- Attach the snow hood (optional accessory).
- Remove the suction grill on the rear so that snow will not be accumulated in the rear fin.

(4) When there is a possibility of short-circuit depending on the ambient situation, use the wind direction adjusting plate (optional accessory).

(5) The inverter type air conditioner may cause noise in electric products.
When selecting an installation location, keep sufficient distance from the air conditioner unit and wiring to radios, personal computers, stereos, etc. as shown in the figure below. In areas with weak electric waves, keep a distance of 120 in. or more from the indoor remote controller, etc., put the power cables and connection cables in conduit tubes, and ground the conduit tubes.

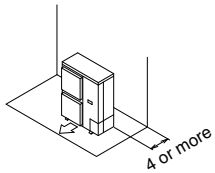


⚠ DANGER

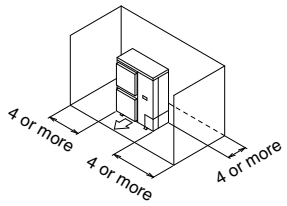
- Do not install unit in an area where flammable materials are present due to risk of explosion resulting in serious injury or death.
- Refrigerant is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion , especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

Installation place (unit: inch)
〈Cautions on continuous installation〉
- The connection piping outlet direction in the continuous installation shown in the figures below is frontward or downward.
- When routing the piping rearward, secure space of 10 in. or more on the right side of the outdoor unit. (The unit of numeric values below is “inch”.)
- Make some space for wiring with conduit and servicing between the units.

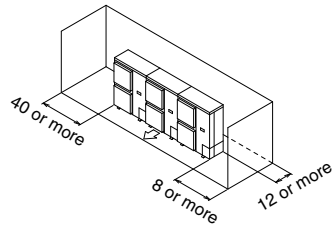
(A) When an obstruction is present on the air inlet side
- **When the upward area is open**
  (1)When one outdoor unit is installed individually
  - When an obstruction is present only on the air inlet side



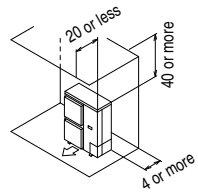
  - When an obstruction is present on the both sides



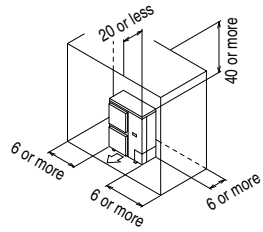
  (2)When two or more outdoor units are installed side by side
  - When an obstruction is present on the both sides



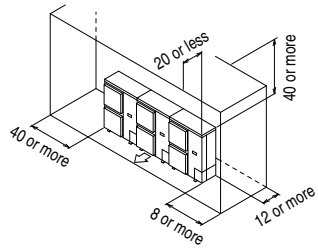
- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually
  - When an obstruction is present also on the air inlet side



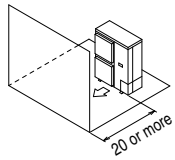
  - When an obstruction is present also on the air inlet side and both sides



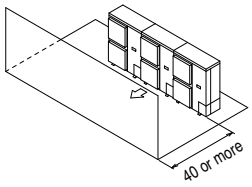
  (2)When two or more outdoor units are installed side by side
  - When an obstruction is present also on the air inlet side and both sides



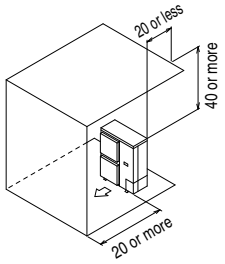
(B) When an obstruction is present on the air outlet side
- **When the upward area is open**
  (1)When one outdoor unit is installed individually



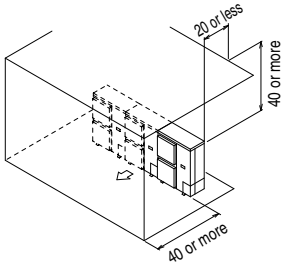
(2)When two or more outdoor units are installed side by side



- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually



(2)When two or more outdoor units are installed side by side

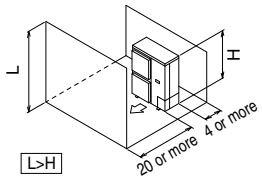


(C) When an obstruction is present on both the air inlet and air outlet sides

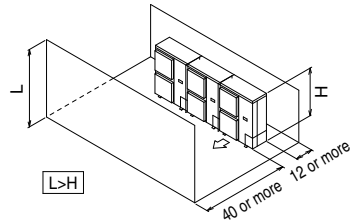
<Pattern 1>

When an obstruction on the air outlet side is higher than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

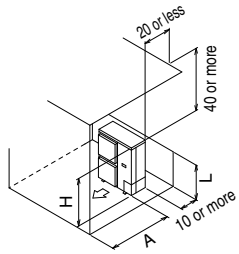
- **When the upward area is open**
  (1)When one outdoor unit is installed individually



(2)When two or more outdoor units are installed side by side



- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually



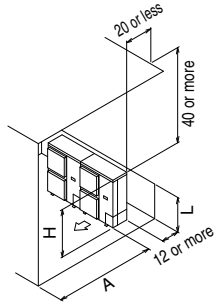
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	30
	1/2H < L ≤ H	40
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2)When only two outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

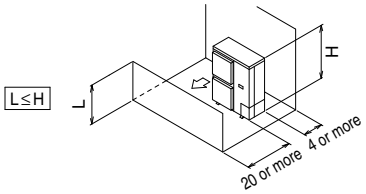
	L	A
L ≤ H	0 < L ≤ 1/2H	40
	1/2H < L ≤ H	50
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

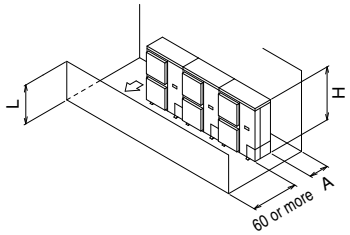
1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

<Pattern 2>
When an obstruction on the air outlet side is lower than the outdoor unit (There is no restriction in the height of obstruction on the air inlet side.)

- **When the upward area is open**
  (1)When one outdoor unit is installed individually



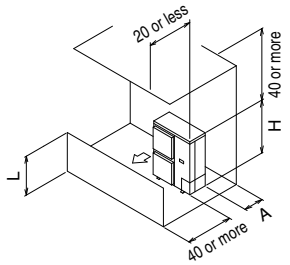
(2)When two or more outdoor units are installed side by side



The dimensional relationship between H, L and A is as shown in the table below.

L	A
0 < L ≤ 1/2H	10
1/2H < L ≤ H	12

- **When an obstruction is present also in the upward area**
  (1)When one outdoor unit is installed individually



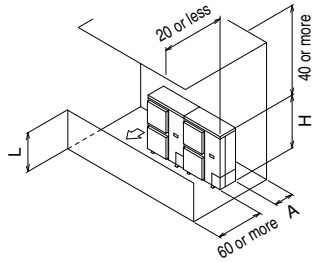
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	4
	1/2H < L ≤ H	8
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

- Close the area under the frame so that the outlet air does not bypass there.

(2)When only two outdoor units are installed side by side



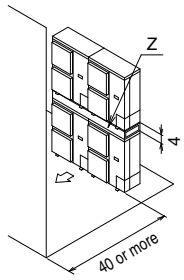
The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Install the frame to achieve "L ≤ H".**	

NOTE

1. Close the area under the frame so that the outlet air does not bypass there.
2. Only two outdoor units can be installed side by side.

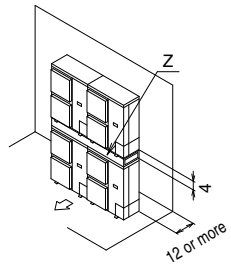
(D) When outdoor units are stacked
(1)When an obstruction is present on the air outlet side



NOTE

1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not bypass there.

(2)When an obstruction is present on the air inlet side

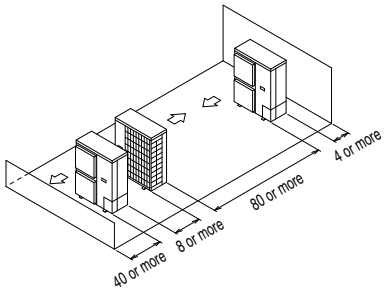


NOTE

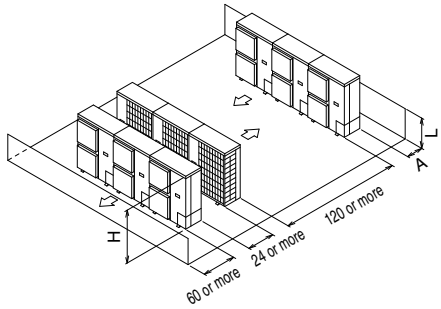
1. Only two outdoor units can be stacked.
2. About 4 in. is required as the drain piping size for the upper outdoor unit.
3. Close the area Z (gap between the upper outdoor unit and the lower outdoor unit) so that the outlet air does not bypass there.

(E) When outdoor units are installed in rows (on the rooftop, etc.)

(1)When one outdoor unit is installed in each row



(2)When two or more outdoor units are installed side by side

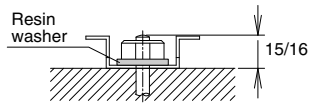


The dimensional relationship between H, L and A is as shown in the table below.

	L	A
L ≤ H	0 < L ≤ 1/2H	10
	1/2H < L ≤ H	12
H < L	**Installation is not allowed.**	

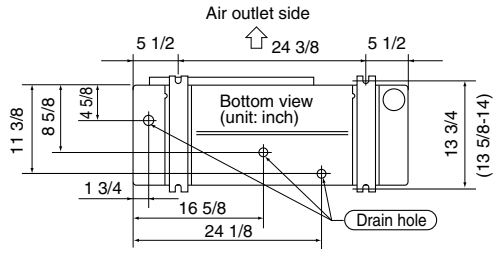
5. CAUTIONS ON INSTALLATION

- Before installation, confirm the strength and levelness of the foundation so that vibrations and noise are not generated.
- Fix the outdoor unit securely on a rigid base with foundation bolts as shown in the foundation drawing below.
  (Prepare 4 sets of commercially available M12-type or equivalent foundation bolts, nuts and washers.)
- Use resin washers to prevent the paint from being scratched off and rusting.
- The foundation bolts should be protruded by 15/16 in.
  (Refer to figure)



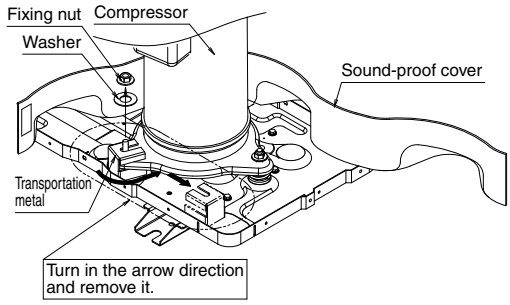
⟨⟨Drain treatment⟩⟩

- In a location where drain from the outdoor unit may cause troubles (for example, where drainage may splash on general passersby), perform the drain piping work using the drain plug (optional).
- For drain treatment, space of at least 4 in. is required under the bottom frame of the outdoor unit.
- In the drain piping work, make sure that drainage is discharged securely.
  (When routing the piping downward, check for water leakage.)



Transportation metal removal procedure

- A transportation metal in yellow and a washer are provided on the leg of the compressor for protecting the unit during transport. Remove them as described below.



(1) Open the sound-proof cover as shown in the above figure.
At this time, do not pull the sound-proof cover, and do not remove it from the compressor.
(2) Remove the fixing nut.
(3) Remove the transportation metal and the washer as shown in the above figure.
(4) Return and tighten the fixing nut again.
(5) Return the sound-proof cover to achieve the former status.

⚠ CAUTION

- If the unit is operated with the transportation metal attached, abnormal vibration or sound may be generated.

6. REFRIGERANT PIPING WORK

⚠ CAUTION

<To piping technician>

- **Make sure to open the stop valves after finishing the piping work. (Refer to the table shown in " 6-7 Additional refrigerant charge".)**
  (Operating the air conditioner with the stop valve shut may damage the compressor.)
- Use R410A to add refrigerant. (The R410A refrigerant cylinder has a pink stripe painted around it.)
  All field piping must be installed by a licensed refrigeration technician and must comply with relevant local and national regulations.
- **BRAZING REFRIGERANT PIPING**
  Do not use flux when brazing copper-to copper refrigerant piping. (Particularly for the HFC refrigerant piping) Therefore, use the phosphor copper brazing filler metal (BCuP) which does not require flux.
  (Flux has an extremely negative effect on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion. Flux containing fluorine will damage refrigerant oil.)

NOTE

- Maximum piping length between the outdoor and indoor unit is 230ft.
- Installation tools:
  Make sure to use installation tools (gauge manifold charge hose, etc.) that are exclusively used for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils such as SUNISO and moisture) from mixing into the system.
  (The screw specifications differ for R410A and R407C.)
  Vacuum pump (use a 2-stage vacuum pump with a non-return valve):
  1. Make sure the pump oil does not flow oppositely into the system while the pump is not working.
  2. Use a vacuum pump which can evacuate to –14.6 psi.

6-1 Selection of piping material

1. Foreign materials inside pipes (including oils for fabrication) must be 0.14gr/10ft. or less.
2. Use the following material specification for refrigerant piping:
   - construction material: Phosphoric acid deoxidized seamless copper for refrigerant.

6-2 Protection of piping

- Protect the piping to prevent moisture and dusts from coming into the piping.
- Especially, pay attention when passing the piping through a hole or connecting the end of piping to the outdoor.

Location	Working period	Protection method
Outdoor	1 month or more	Pinch pipes
	Less than 1 month	Pinch or tape pipes
Indoor	Regardless of period	

6-3 Piping connection

- **For handling of stop valves, refer to "Stop valve operation method" in "6-7 Additional refrigerant charge".**
- **Only use the flare nuts attached to the stop valves. Using different flare nuts may cause the refrigerant to leak.**
- **Be sure to perform a nitrogen blow when brazing.**

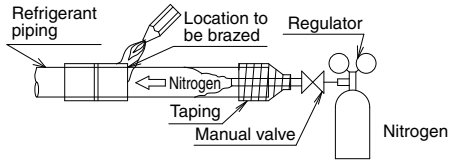
(Brazing without performing nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film inside the pipes, adversely affecting valves and compressor in the refrigerating system and preventing normal operation.)

DANGER

- Use of oxygen could cause an explosion resulting in severe injury or death. Only use nitrogen gas.
- Refrigerant gas may produce toxic gas if it comes in contact with fire such as from a fan heater, stove or cooking device. Exposure to this gas could cause severe injury or death.

NOTE

- When brazing with blowing nitrogen, set the nitrogen pressure to 2.9 psi or less by using a pressure reducing valve.



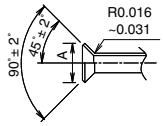
CAUTION

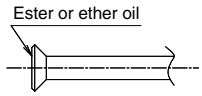
- Do not use anti-oxidants when brazing.
  Residue can clog pipes and break the unit.

◎ Do not let any refrigerant other than the specified refrigerant enter the refrigerant system.
◎ Do not let any gas such as air enter the refrigerant system.

〈Precautions when connecting the piping〉

- See the following table for flare dimensions.
- When connecting the flare nuts, apply refrigerant oil to the inside of the flares and turn them three or four times at first.
  (Use ester oil or ether oil.)
- See the following table for tightening torque. (Applying too much torque may cause the flares to crack.)
- After connecting all the piping perform a gas leak check by using nitrogen.

Pipe size	Tightening torque (ft·lbf)	Flare dimension A (in.)	Flare shape (in.)
ϕ3/8"	24.1 - 29.4	0.504 - 0.520	
ϕ5/8"	45.6-55.6	0.760 - 0.776	



- If you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.
  After the work is finished, make sure to check that there is no gas leak.
- When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases.
  From that position, further tighten the flare nut the angle shown below.

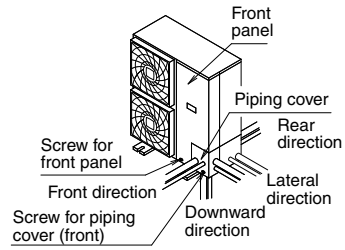
Pipe size	Tightening angle (Guideline)	Recommended arm length of tool (in.)
ϕ 3/8"	60°~90°	Approx. 7 7/8
ϕ 5/8"	30°~60°	Approx. 11 13/16

Disposal requirements

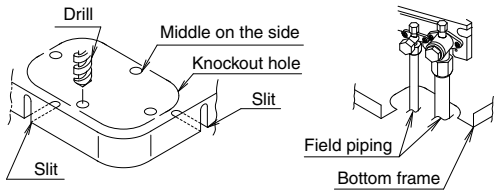
Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts should be comply the relevant local and national regulations.

6-4 Refrigerant piping work procedure

◎ The field piping can be connected in four directions.



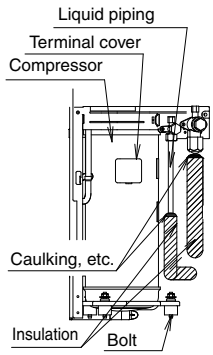
◎ When connecting the piping downward, remove the knockout hole by making four holes in the middle on the each side of the knockout hole with a drill.



Then cut out the corner of the bottom frame along the slits (in two positions) by using a hacksaw.
◎ After removing the parts, it is recommended to apply repair paint on the edges, to prevent rusting.

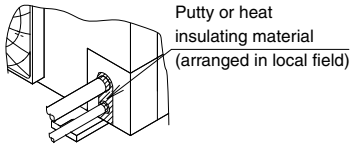
Cautions on connecting the connection piping

- Be careful not to let the field piping come into contact with the compressor terminal cover.
  Adjust the height of the insulation material on liquid pipe when it has the possibility of getting in contact with the terminal. Also make sure that the field piping does not touch the mounting bolt of the compressor.
- When it is expected that water condensed in the stop valve will reach the indoor unit through the gap between the heat insulating material and the piping (for example, when the outdoor unit is installed in a higher position than the indoor unit), take proper action such as caulking the connection area.



[Measures to prevent invasion of small creatures and litter]

- Block all gaps in the piping penetration areas with putty or heat insulating material (arranged in the local field) as shown in the figure below.
  (If small creatures such as insects or litter enter the outdoor unit, a short-circuit may be caused inside the control box.)



6-5 Heat insulation of piping

- Make sure to insulate the field piping (on both the liquid line and gas line) and refrigerant branching kit.
  (If they are not insulated, water leakage may be caused.)

  Be sure to use insulation that is designed for use with HVAC Systems.

- Reinforce the refrigerant piping according to the installation environment. If it is not reinforced, condensate may form on the surface of the insulation.

⚠ WARNING

- Make sure to insulate the field piping up to the piping connection area inside the unit. If the piping is exposed, dew condensation and burn by contact may be caused.

6-6 Airtight test and vacuum drying

The unit has been checked for leaks by the manufacturer.
Confirm that the valves are firmly closed before airtight test or vacuum-drying.
To prevent entry of any impurities and insure sufficient pressure resistance, always use the special tools dedicated for R410A.

Perform the following inspections securely after the piping work.

- **Airtight test** - Make sure to use nitrogen gas. (For the service port position, refer to the figure in **"Stop valve operation method"**.)
  [Procedure] Pressurize the air conditioner from the liquid pipe and gas pipe up to 450 psi (Make sure not to exceed 450 psi). When the pressure does not drop for 24 hours, the piping work shall be accepted.
  If the pressure drops, check for leakage positions. (Confirm that there is no leakage, then release nitrogen.)
- **Vacuum drying** - Use a vacuum pump which can evacuate up to –14.6 psi or less.
  [Procedure] Operate the vacuum pump for evacuation for 2 hours or more using both liquid pipe and gas pipe until the vacuum pressure reaches –14.6 psi or less. Leave the air conditioner at –14.6 psi or less for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gage does not increase.
  (If the vacuum pressure increases, the system may contain moisture or have leakage.)

If there is a possibility of moisture remaining in the piping (for example, when there is a possibility of dew condensation inside the piping because the piping work was performed in the rainy season or over a long period of time, or when rainwater may have entered the piping during the work)
Perform evacuation described above for 2 hours (vacuum drying), pressurize the air conditioner up to 7 psi (vacuum break) with nitrogen gas, then evacuate the air conditioner using the vacuum pump for 1 hour to achieve –14.6 psi or less (vacuum drying).
(If the vacuum pressure does not reach –14.6 psi or less even after evacuation for 2 hours or more, repeat vacuum break and vacuum drying.) Leave the air conditioner in the vacuum status for 1 hour or more, and confirm that the vacuum pressure indicated by the vacuum gauge does not increase.

6-7 Additional refrigerant charge

⚠ WARNING

- To avoid injury always use protective gloves and eye protection when charging refrigerant.
- To avoid injury do not charge with unsuitable substances. Use only the appropriate refrigerant.

⚠ NOTE

- Refrigerant cannot be charged until field wiring has been completed. Refrigerant may only be charged after performing the airtight test and the vacuum drying (see above).
  When charging refrigerant into the system, take care that its maximum allowable charge is never exceeded, in view of the danger of liquid hammer.
  Refrigerant containers shall be opened slowly.
  To avoid compressor breakdown, do not charge the refrigerant more than the specified amount to raise the condensing pressure.

- This outdoor unit is factory charged with refrigerant.
- Charge the additional refrigerant calculated by the formula below.

Additional charging amount (lb.)	=	Liquid piping length × 0.036 (ft.)×0.036

Record the additional amount to the label stuck on the back of front panel.

- Charge the refrigerant to the liquid pipe in its liquid state. Since R410A is a mixed refrigerant, its composition changes if charged in a state of gas and normal system operation would no longer be assured.
- Before filling, check whether the tank has a siphon attached or not.

  How to fill a tank with a siphon attached.

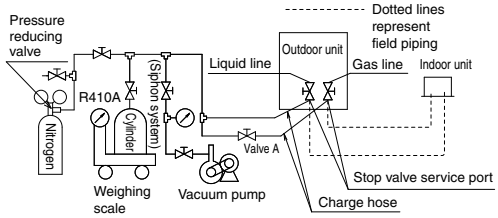
  Fill with the tank upright.
  (There is a siphon tube inside, so there is no need to turn the tank upside-down.)

  Other ways of filling the tank

  Fill with the tank upside-down.

- After the vacuum drying is finished, charge the additional refrigerant in its liquid state through the liquid stop valve service port.
  Taking into account following instructions:
  1. Check that gas and liquid stop valves are closed.
  2. Charge the specified amount of refrigerant.

- If the outdoor unit is not in operation and the total amount cannot be charged, follow the procedures for additional refrigerant charge shown below.
- Make sure to use installation tools you exclusively use on R410A installations to withstand the pressure and to prevent foreign materials from mixing into the system.
- Procedures for charging additional refrigerant.



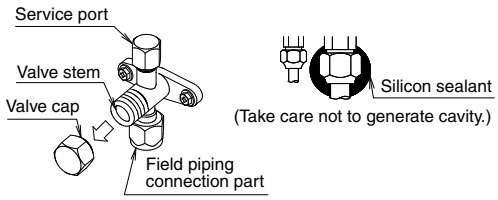
See the "Cautions on service" label on the back of the front panel for the settings for operation after replenishing refrigerant.

1. Open the gas line stop valve (leaving the liquid line stop valve, valve A in the diagram above, close) and perform the operation to add the refrigerant.
2. Once the appropriate amount of refrigerant is in, press the confirmation button (BS3) on the outdoor unit PC board (A1P), and stop operation.
3. Open the stop valves quickly (both liquid and gas line valves). (This must be done quickly to avoid the possibility that the pipe might burst.)

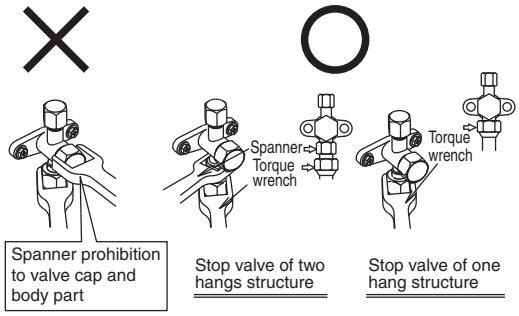
Stop valve operation method

Cautions on handling the stop valve

- The figure below shows the name of each part required in handling the stop valve. At the time of shipment, the stop valve is closed.



- If only a torque wrench is used to loosen or tighten the flare nut, the side plate may be distorted. Make sure to fix the stop valve with a spanner, then loosen or tighten the flare nut with a torque wrench.



- When it is expected that the operating pressure will be low (for example, when cooling will be performed while the outside air temperature is low), seal sufficiently the flare nut in the stop valve on the gas line with silicon sealant to prevent freezing.

[Stop valve operation method]
Prepare hexagon wrenches (whose size is 4 mm and 6 mm).
How to open the stop valve

1. Insert a hexagon wrench into the valve stem, and turn the valve stem counterclockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is open.

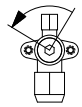
How to close the stop valve

1. Insert a hexagon wrench into the valve stem, and turn the valve stem clockwise.
2. When the valve stem cannot be turned any more, stop turning. Now, the valve is closed.

Opening direction

<Liquid line>

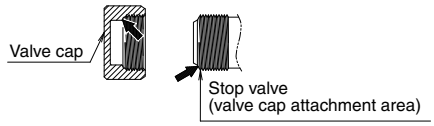
Opening direction



<Gas line>

Cautions on handling the valve cap

- The valve is sealed in the arrow area. Take care not to damage the arrow area.



- After handling the valve, make sure to tighten the valve cap securely.

Liquid line	Gas line
10.0~12.2 ft·lbf	16.6~20.3 ft·lbf

Cautions on handling the service port

- Use charge hose equipped with push in the work.
- After the work, make sure to tighten the valve cap securely. Tightening torque.....8.5~10.3 ft·lbf

7. ELECTRIC WIRING WORK

⚠ DANGER

- Do not ground units to water pipes, telephone wires or lightning rods because incomplete grounding could cause a severe shock hazard resulting in severe injury or death, and to gas pipes because a gas leak could result in an explosion which could lead to severe injury or death.

⚠ WARNING

- Disconnect all power to unit to avoid possible electric shock during installation.
- Use only specified wire and connect wires to terminals tightly. Be careful that wires do not place external stress on terminals. Keep wires in neat order so as to not to obstruct other equipment. Incomplete connections could result in overheating, and in worse cases, electric shock or fire.
  For the details, refer to **"7-3 Power supply wiring connection procedure"**.

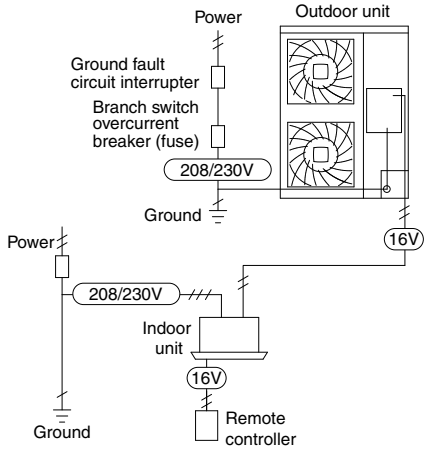
⚠ CAUTION

<To electrician>

- Do not operate the air conditioner until the refrigerant piping work is completed.
  (Operating the air conditioner before the refrigerant piping work is completed may damage the compressor.)
- Install a ground fault circuit interrupter.
  (The inverter is provided in the air conditioner. In order to prevent malfunction of the ground fault circuit interrupter itself, use a breaker resistant to higher harmonics.)

- Electricians having sufficient knowledge should perform the electrical wiring work.
  All wiring must comply with local electrical codes and National Electrical Code (NEC).
- Perform the electric wiring work in accordance with the "wiring diagram label".
  Make sure to turn OFF the branch switch and overcurrent breaker before starting the work.
- Perform grounding to the indoor unit and outdoor unit.
- Use only copper wires.
- Make sure to turn the power off before starting the electric wiring work.
  Do not turn ON any switch until the work is completed.
- The outdoor unit has an inverter which generates noise and charges the outer casing with the leakage current. The outdoor unit should be grounded so that the effect of the generated noise on other equipment can be reduced, and that the outer casing can be discharged.
- As this unit is equipped with an inverter, installing a phase advancing capacitor will not only reduce the power factor improvement factor, but may also cause the capacitor to overheat due to high-frequency waves. Therefore, never install a phase advancing capacitor.
- Never push excessive electric wires into the units.
- Protect electric wires with conduit tubes or vinyl tubes so that they will not be damaged by edges of knockout holes.
- Fix electric wires with clamps as accessories so that they will not come to contact with pipes and stop valves.
  (Refer to **"7-3 Power supply wiring connection procedure"**.)

7-1 Connection example of whole system wiring

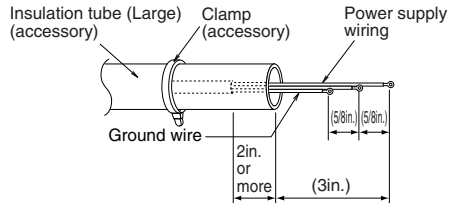


7-2 Routing power supply wiring and transmission wiring

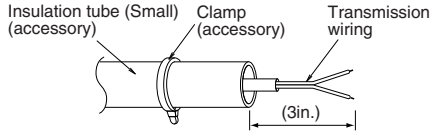
Let the power supply wiring and transmission wiring with a conduit pass through one of the knockout holes on the front or side piping cover, and let the transmission wiring with a conduit pass through another knockout hole.

- For protection from uninsulated live parts, thread the power supply wiring and the transmission wiring through the included insulation tube and secure it with the included clamp.

<Power supply wiring>

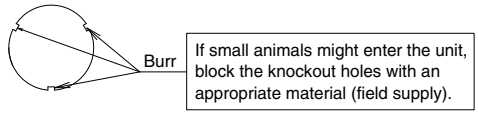


<Transmission wiring>



Precautions knockout holes

- Open the knockout holes with a hammer or the like.
- After knocking out the holes, we recommend you remove burrs in the knockout holes and paint the edges and areas around the edges using the repair paint to prevent rusting.
- When passing wiring through knockout holes, make sure there are no burrs, and protect the wiring with protective tape.



⚠ CAUTION

- Use conduit for both the power supply wiring and transmission wiring.
- Outside the unit, make sure to keep the wirings 5 inch away. Otherwise, the outdoor unit may be affected by electrical noise (external noise), and malfunction or fail.
- Be sure to connect the power supply wiring to the terminal block and secure it as described in "7-3 Power supply wiring connection procedure".
- Fix the wiring between the units in accordance with "7-4 Transmission wiring connection procedure".
- Secure the wirings with the clamps (accessory) so that do not touch the piping.
- Make sure the wirings will not be pinched by the front panel, and close the panel firmly.
- Route the conduit along the unit by using a elbow socket and so on to prevent it from being stepped on.

7-3 Power supply wiring connection procedure

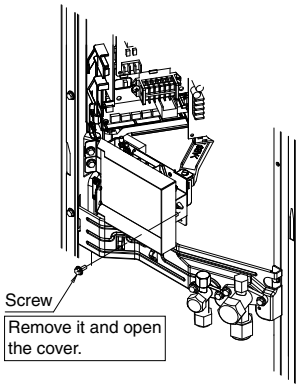
⚠ WARNING

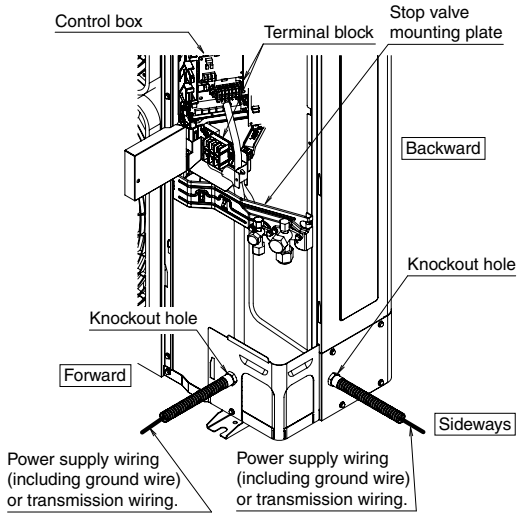
- Never connect power supply wiring to the terminal block for remote controller wiring as this could damage the entire system.

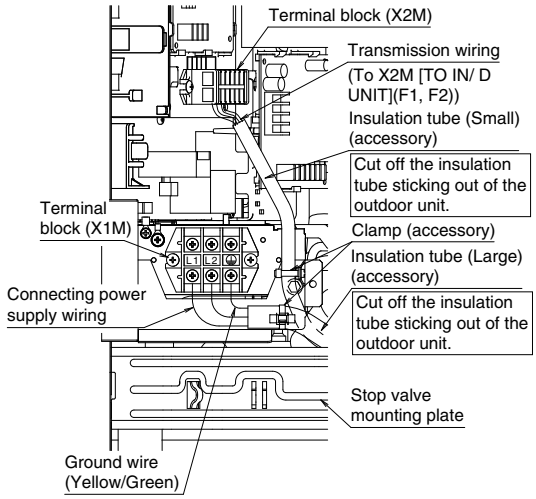
Install a ground fault circuit interrupter.

- It is obliged to install a ground fault circuit interrupter to prevent electric shock and fire accident.

Model	Phase and frequency	Voltage	Max. Overcurrent Protective device	Min. Circuit Amps.
RZQ30PVJU9	~ 60Hz	208/230V	30A	27A
RZQ36PVJU9 RZR36PVJU				
RZQ42PVJU9 RZR42PVJU				





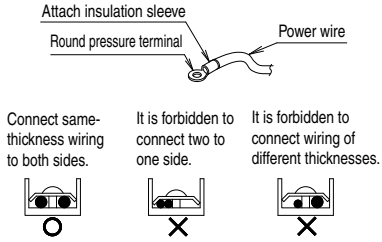


⚠ CAUTION

- After finishing the electric wiring work, confirm that all the wirings are connected securely.

⟨⟨Precautions when laying power wiring⟩⟩

- Two electric wires of different thickness cannot be connected to the power terminal block.
  (Slack in the electric wires may generate abnormal heat.)
- Use round pressure terminals with insulting sleeve for connection to the power terminal block.
  If such terminals are not available for unavoidable reasons, connect an electric wire of the same thickness to each side as shown in the figure.



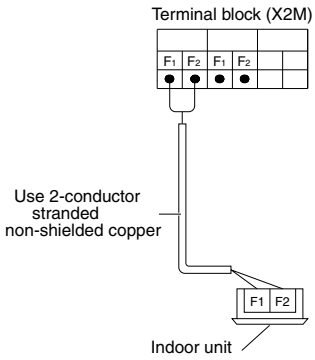
Make sure to observe the following items. If they are not observed, abnormal heat may be generated by slack in electric wires, etc.

- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table below for tightening torque for the terminal screws.

Tightening torque (ft·lbf)		
M5	(Power supply and ground terminal block)	1.76 ~ 2.15
M4	(Shielded ground)	0.87 ~ 1.06
M3.5	(Transmission wiring terminal block)	0.58 ~ 0.72

7-4 Transmission wiring connection procedure

- **If an excessive force is applied while connecting a cable to the terminal block on the PC board, the PC board may be damaged.**



⚠ CAUTION

- For low-noise operation, it is necessary to install the optional "External control adaptor for outdoor unit".
  For details, see the installation manual attached to the adaptor.

Caution on the wiring length between units

Make sure to observe the restrictions below. If they are not observed, transmission error may occur.

Maximum wiring length: 3280 ft.

Cautions on the wiring between units

- Never connect 208/230V to the terminal block for the transmission wiring.
  Doing so will break the entire system.
- The transmission wiring from the indoor unit must be connected to the F1/F2 (TO IN/D UNIT) terminals on the PC board in the outdoor unit.

* Make sure to use stranded non-shielded 2-conductor AWG18-2 in the wiring shown above.
* **All cables used in the wiring between the units should be procured on the site.**

8. CHECKS AFTER COMPLETION OF WORK

After completing the work, make sure to confirm the following items:

1. Connection of drain piping and removal of transportation metal:
   Refer to **"5. CAUTIONS ON INSTALLATION"**.
2. Connection of power supply wiring and tightening of screws:
   Refer to **"7-3 Power supply wiring connection procedure"**.
3. Connection of transmission wiring and tightening of screws:
   Refer to **"7-4 Transmission wiring connection procedure"**.
4. Freezing connection of refrigerant piping
   Refer to **"6. REFRIGERANT PIPING WORK"**.
5. Piping size and heat insulation:
   Refer to **"6-1 Selection of piping material"**, **"6-5 Heat insulation of piping"**.
6. Check of stop valve:
   Confirm that the stop valve is open on both the liquid line and gas line.
7. Record of amount of additional refrigerant:
   Record the amount on the label stuck on the back of the front panel.
8. Measurement of insulation in main power circuit:
   - Use the megatester for 500 V.
   - Do not use any megatester for low voltage electric circuits except 230 V.
     (Wiring between the outdoor unit and the indoor unit)

⚠ CAUTION

<To piping technician>

- Make sure to open the stop valve after finishing the piping work.
  (Operating the air conditioner with the stop valve shut may damage the compressor.)

9. TEST RUN PROCEDURE

A crankcase heater is mounted for smooth startup. Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

⚠ WARNING

- Make sure to close the front panel before leaving the outdoor unit in the power ON status.
- To avoid injury, always make sure that the circuit breaker on the power supply panel of the installation is switched off before doing any work.

Cautions before turning on the power

- **Put the insulating cover securely onto the control box.**
- **After turning on the power, check the settings and LED indicators on the PC board (A2P) in the outdoor unit through the opening of the insulating cover.**

9-1 Power on and check operation

- Make sure to perform the check operation after installation. (If the air conditioner is operated using the indoor remote controller without performing the check operation, the malfunction code “U3” is displayed in the indoor remote controller, and normal operation is disabled.)
- In the check operation, the status of the outdoor unit is checked, and incorrect wiring is checked for.

(1) • Close the front panel of the outdoor unit.
• Turn ON the power to the outdoor unit and indoor unit.

⚠Caution Make sure to turn on the power 6 hours before starting operation for supplying the power to the crankcase heater.

(2) • Open the front panel of the outdoor unit.
• Check the LED on the PC board (A1P and A2P) in the outdoor unit to see if the data transmission is performed normally.

The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.

	A1P	A2P						
LED display (Default status before delivery)	SERVICE MONITOR	MODE	TEST/HWL	IND	MASTER	SLAVE	L.N.O.P.	DEMAND
	HAP	**H1P**	**H2P**	**H3P**	**H4P**	**H5P**	**H6P**	**H7P**
Outdoor unit installed	◑	●	●	○	●	●	●	●

LED display: ● OFF ○ ON ◑ Blinking

(3) • When performing the low-noise operation (L.N.O.P.) or demand (DEMAND) operation upon request from the customer, perform the setting using the pushbutton switches (BS1 to BS5) on the PC board (A2P) in the outdoor unit.
• Press each pushbutton switch from the opening of the insulation cover. (Do not remove the insulation cover.)

- The power is supplied to the outdoor unit. Take due care during the work to prevent electric shock.
- Before using the pushbutton switches (BS1 to BS5) for setting, confirm that the microcomputer (SERVICE) monitor is lit.
- For the setting method, refer to the [Cautions on service] label attached on the back of the front panel of the outdoor unit. (Make sure to write the contents of setting on the [Cautions on service] label.)

(4) Confirm that the stop valves are open on both the liquid and gas lines. If they are closed, open them.

⚠Caution Do not leave any stop valve closed. Otherwise the compressor will fail.

(5) Press and hold the test run button (BS4) for 5 seconds or more to start the check operation.
For the details, refer to the **Check operation procedure** on the [Cautions on service] label.

- When leaving the outdoor unit during the check operation for unavoidable reasons, ask another installation worker to watch the outdoor unit, or close the front panel.
- The system operates the check operation for about 15 minutes (30 minutes maximum), then stops automatically. The system can start normal operation about 5 minutes after the check operation if the remote controller does not display any malfunction code.
- During the check operation, the status under execution is indicated on the remote controller.

(6) After the check operation, make sure to close the front panel of the outdoor unit.

<Cautions on check operation>

- If the air conditioner is started within about 12 minutes after the power of the indoor/outdoor unit is turned on, the H2P indicator lights and the compressor does not run.
  Confirm that the LED status is as shown in the table in (2) in **“9-1 Power on and check operation”** before starting the air conditioner.
- The air conditioner may require about 10 minutes maximum until it can start the compressor after start of operation.
  This period of time is required to homogenize the refrigerant status, and does not indicate any failure.
- The check operation does not provide any means of checking the indoor unit individually. For that purpose, perform the normal operation using the remote controller after finishing the check operation.
- The check operation is not available in any other mode such as the recovery mode.
- Before running a check on the unit, changing the indoor remote controller settings might cause the error code “UF” to be displayed and prevent a proper check to be run.

9-2 Checks in normal operation

- After finishing the check operation, operate the air conditioner normally. (Heating operation is only available for RZQ-P models.) (Heating is not available if the outside air temperature is 75 °F or more. Refer to the operation manual supplied together with the unit.)
- Confirm that the indoor and outdoor units are operating normally. (If a knocking sound is heard in the liquid compression of the compressor, stop the air conditioner immediately and energize the crankcase heater for a sufficient period of time, then start the operation again.)
- Run the indoor unit one by one in turn, and confirm that the corresponding outdoor unit is running.
- Check to see if cold (or hot) air is coming out of the indoor unit.
- Press the fan direction button and fan speed control button on the remote controller to see if the fan is operating normally.

<Cautions for normal operation check>

- Once stopped, the compressor will not start for about 5 minutes even if the **“ON/OFF”** button on the remote controller is pressed.
- When the system operation is stopped by the remote control, the outdoor unit may continue to operate for a further 3 minutes.
- If the system has not undergone the check operation by the test run button since it was first installed, a malfunction code “U3” is displayed.
  In this case, perform the check operation by referring to **“9-1 Power on and check operation”**.

When a malfunction code is displayed in the remote controller

(Check a malfunction code in the remote controller connected to the indoor unit.)

Malfunction code	Cause	Solution
E3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
E4 F3	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas side and liquid side.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on all indoor unit remote controllers to "cooling."
	The refrigerant is insufficient.	• Check whether additional refrigerant charge has been finished correctly. • Calculate again the required amount of refrigerant to be charged based on the piping length, then charge additionally proper amount of refrigerant.
F6	The refrigerant is overcharged.	Calculate again the required amount of refrigerant to be charged based on the piping length, recover the refrigerant using the refrigerant recovery device, then achieve proper amount of refrigerant.
U3	The check operation has not performed.	Perform the check operation.
U4	The power is not supplied to the outdoor unit.	Connect correctly the power supply wiring of the outdoor unit.
UA	Improper type of indoor unit is connected.	Check the type of indoor unit currently connected. If it is not proper, replace it with proper one.
UF	The stop valves in the outdoor unit remain closed.	Open the stop valve on both the gas and liquid lines.
	The piping and wiring of the indoor unit are not connected correctly to the outdoor unit.	Confirm that the piping and wiring of the indoor unit are connected correctly to the outdoor unit.
	The operation mode on the remote controller was changed before the check operation.	Set the operation mode on indoor unit remote controller to "cooling."
UH	The transmission wiring is not connected correctly.	Connect correctly the transmission wiring to the F1 and F2 (TO IN/D UNIT) terminals on the PC board (A1P) in the outdoor unit.

When nothing is displayed in the remote controller

- There might be a problem with the connection or transmission between the indoor unit and the remote controller. Check connections, and check for wire breakage.

⚠ CAUTION

<To piping technician>
<To electrician>

- **After finishing the test run and before using the unit by customer, confirm that the front panel and screws are attached securely to the unit.**

10. CAUTION FOR REFRIGERANT LEAKS

⚠ DANGER

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

(Points to note in connection with refrigerant leaks)

Introduction

The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available.

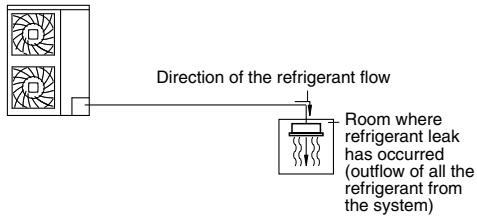
The Split System, like other air conditioning systems, uses R410A as refrigerant. R410A itself is an entirely safe non-toxic, non-combustible refrigerant. Nevertheless care must be taken to ensure that air conditioning facilities are installed in a room which is sufficiently large. This assures that the maximum concentration level of refrigerant gas is not exceeded, in the unlikely event of major leak in the system and this in accordance to the local applicable regulations and standards.

Maximum concentration level

The maximum charge of refrigerant and the calculation of the maximum concentration of refrigerant is directly related to the humanly occupied space in to which it could leak.

The unit of measurement of the concentration is lb./ft^3 (the weight in lb. of the refrigerant gas in 1ft^3 volume of the occupied space).

Compliance to the local applicable regulations and standards for the maximum allowable concentration level is required.



Pay a special attention to the place, such as a basement, etc. where refrigerant can stay, since refrigerant is heavier than air.

Procedure for checking maximum concentration

Check the maximum concentration level in accordance with steps 1 to 4 below and take whatever action is necessary to comply.

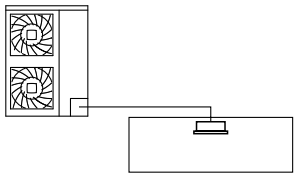
1. Calculate the amount of refrigerant (lb.) charged to each system separately.

amount of refrigerant in the unit (amount of refrigerant with which the system is charged before leaving the factory)	+	additional charging amount (amount of refrigerant added locally in accordance with the length or diameter of the refrigerant piping)	=	total amount of refrigerant (lb.) in the system

NOTE

- Where a single refrigerant facility is divided into 2 entirely independent refrigerant systems then use the amount of refrigerant with which each separate system is charged.

2. Calculate a room volume (ft^3)



3. Calculate the refrigerant concentration by using the results of the calculations in steps 1 and 2 above.

$$\frac{\text{total amount of refrigerant in the system}}{\text{volume } (ft^3) \text{ of the room in which there is an indoor unit installed}} \leq \text{maximum concentration level } (lb./ft^3)$$

4. Deal with the situations where the result exceeds the maximum concentration level.
Where the installation of a facility results in a concentration in excess of the maximum concentration level then it will be necessary to revise the system.
Please consult your dealer.

Warning

- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorized 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 unauthorized 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 inquiries, please contact your local importer, distributor and/or retailer.

C ETL US LISTED
Intertek

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.

CERTIFIED JQA MANAGEMENT SYSTEM ISO 9001
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, HEATING EQUIPMENT, RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT RECLAIM VENTILATION, AIR CLEANING EQUIPMENT, COMPRESSORS AND VALVES.

CERTIFIED JQA MANAGEMENT SYSTEM ISO 9001
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

ISO 14001 JACO
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 AC (AMERICAS), INC.
1645 Wallace Drive, Suite 110
Carrollton, TX75006
info@daikinac.com
www.daikinac.com

- Specifications, designs and other content appearing in this brochure are current as of January 2012 but subject to change without notice.

EDUS281120_a
Printed in U.S.A. 01/12 FS. K