CITYMULTI® Outdoor Unit: 18-TON PQHY-P216YSHMU-A

MITSUBISHI ELECTRIC

(Consists of One PQHY-P120YHMU-A, One PQHY-P96YHMU-A, and One CMY-Y100CBK3 Twinning Kit)

Job Name:

Schedule Reference: | Date:

MODULAR WATER-SOURCE VRF HEAT PUMP SYSTEM FEATURES

- Modular units connectable to expand capacity
- Designed for closed water loops
- Self-cooling cabinet design
- Compact size
- Connects to CITY MULTI® indoor units
- Controlled via CITY MULTI® Controls Network

OPTIONAL PARTS

- ■ Twinning Kit (required)…….....……...…….CMY-Y100CBK3
- □ Joint Kit…….....……...…….for details see Pipe Accesories Submittal
- □ Header Kit…….....……...…….for details see Pipe Accesories Submittal

Specifications		System	Module 1	Module 2
Unit Type		PQHY-P216YSHMU-A	PQHY-P120YHMU-A	PQHY-P96YHMU-A
Nominal Cooling Capacity	Btu/h	216,000	120,000	96,300
Nominal Heating Capacity	Btu/h	243,000	135,000	108,000
Operating Temperature Range	Cooling (Indoor)	Refer to Module Data	59~75° F (15~24° C) WB	
	Heating (Indoor)		59~81° F (15~27° C) DB	
Operating Water Temperature Range	Cooling*		23~113° F (-5~45° C)	
	Heating*		23~113° F (-5~45° C)	
External Dimensions (H x W x D)	In. / mm	Refer to Module Data	43-5/16 x 34-11/16 x 21-11/16 / 1,100 x 880 x 550	43-5/16 x 34-11/16 x 21-11/16 / 1,100 x 880 x 550
Net Weight	Lbs. / kg	918 / 416	459 / 208	459 / 208
External Finish		Refer to Module Data	Acrylic-painted Steel Sheets	
Electrical Power Requirements	Voltage, Phase, Hertz	Refer to Module Data**	460V, 3-phase, 60Hz	
Minimum Circuit Ampacity (MCA)**	A	Refer to Module Data**	13**	10**
Maximum Fuse Size**	A	Refer to Module Data**	20**	15**
Circulating Water (quality must meet regulations)				
Flow Rate	GPM / L/s	Refer to Module Data	25 / 2	25 / 2
Pressure Drop	Ft. / psi		6 / 3	6 / 3
Operation Volume Range	GPM / L/m		20 - 32 / 75 - 120	20 - 32 / 75 - 120
Maximum Water Pressure	MPa / psi		2 / 290	2 / 290
Water-source Connections (Each for Inlet and Outlet)	In.	Refer to Module Data**	1-1/2 FPT	1-1/2 FPT
Piping Diameter			Refer to System Data	
From Twinning Kit to Indoor Units (Brazed) (In. / mm)	Liquid (High Pressure)	5/8 / 15.88		
	Gas (Low Pressure)	1-1/8 / 28.58		
From Modules to Twinning Kit (Brazed) (In. / mm)	Liquid (High Pressure)	Refer to Module Data	1/2 / 12.7	1/2 / 12.7
	Gas (Low Pressure)		7/8 / 22.2	7/8 / 22.2
Max. Total Refrigerant Line Length	Ft	1,640	Refer to System Data	
Max. Refrigerant Line Length	Ft	541		
Max. Control Wiring Length	Ft	1,640		
Indoor Unit	Total Capacity	50 to 130% of WSUs	Refer to System Data	
	Model / Quantity	P06 ~ P96 / 2 to 46		
Sound Pressure Levels	dB(A)	53	51	49
Compressor Operating Range		8 - 100%	Refer to System Data	
Compressor Type x Quantity		Refer to Module Data	Inverter-driven Scroll Hermetic x 1	Inverter-driven Scroll Hermetic x 1
Compressor Motor Output	kW		8.5	6.3
Compressor Crankcase Heater	kW		0.051	0.051
Refrigerant		Refer to Module Data	R410A	
Lubricant			MEL32	
High-pressure Protection Device		Refer to Module Data	601 psi / 4.15 MPa	601 psi / 4.15 MPa
Compressor / Fan Protection Device			Overheat Protection	Overheat Protection
Inverter Protection Device			Overheat / Overcurrent Protection	Overheat / Overcurrent Protection

*If using circulating water temperatures between 23° and 50° F, Dip switch 3-9 must be turned on and glycol must be added to the water loop to prevent freezing down to 5° F.

** Each individual module requires a separate electrical connection. Reference electrical data for each individual module.

Specifications are subject to change without notice.
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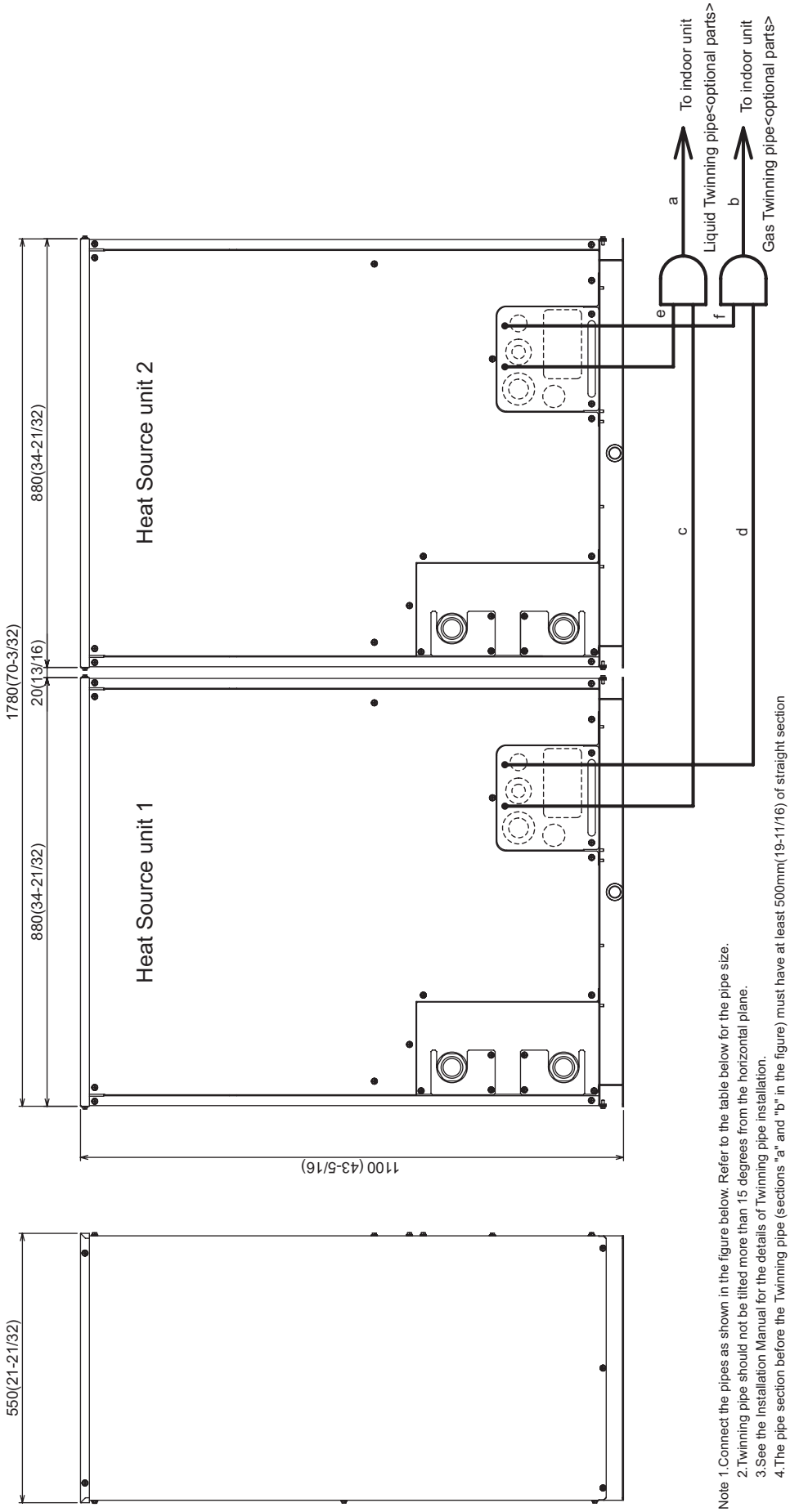
Outdoor Unit: PQHY-P216YSHMU-A – DIMENSIONS



Unit: mm (in.)

Note 1. Connect the pipes as shown in the figure below. Refer to the table below for the pipe size.
2. Twinning pipe should not be tilted more than 15 degrees from the horizontal plane.
3. See the Installation Manual for the details of Twinning pipe installation.
4. The pipe section before the Twinning pipe (sections "a" and "b" in the figure) must have at least 500mm(19-11/16) of straight section (*including the straight pipe that is supplied with the Twinning pipe).
5. Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name				PQHY-P144YSHMU-A	PQHY-P168YSHMU-A	PQHY-P192YSHMU-A	PQHY-P216YSHMU-A	PQHY-P240YSHMU-A
Component unit name	Heat Source unit 1			PQHY-P72YHMU-A	PQHY-P96YHMU-A	PQHY-P96YHMU-A	PQHY-P120YHMU-A	PQHY-P120YHMU-A
	Heat Source unit 2			PQHY-P72YHMU-A	PQHY-P72YHMU-A	PQHY-P96YHMU-A	PQHY-P96YHMU-A	PQHY-P120YHMU-A
Twinning pipe Kit(optional parts)				CMY-Y100VBK2				
Indoor unit~Twinning pipe		Liquid	a	ø12.7(1/2)	ø15.88(5/8)			
		Gas	b	ø28.58(1-1/8)				
Twinning pipe~Heat Source unit 1		Liquid	c	ø9.52(3/8)			ø12.7(1/2)	
		Gas	d	ø19.05(3/4)	ø22.2(7/8)			
Twinning pipe~Heat Source unit 2		Liquid	e	ø9.52(3/8)			ø12.7(1/2)	
		Gas	f	ø19.05(3/4)	ø22.2(7/8)			

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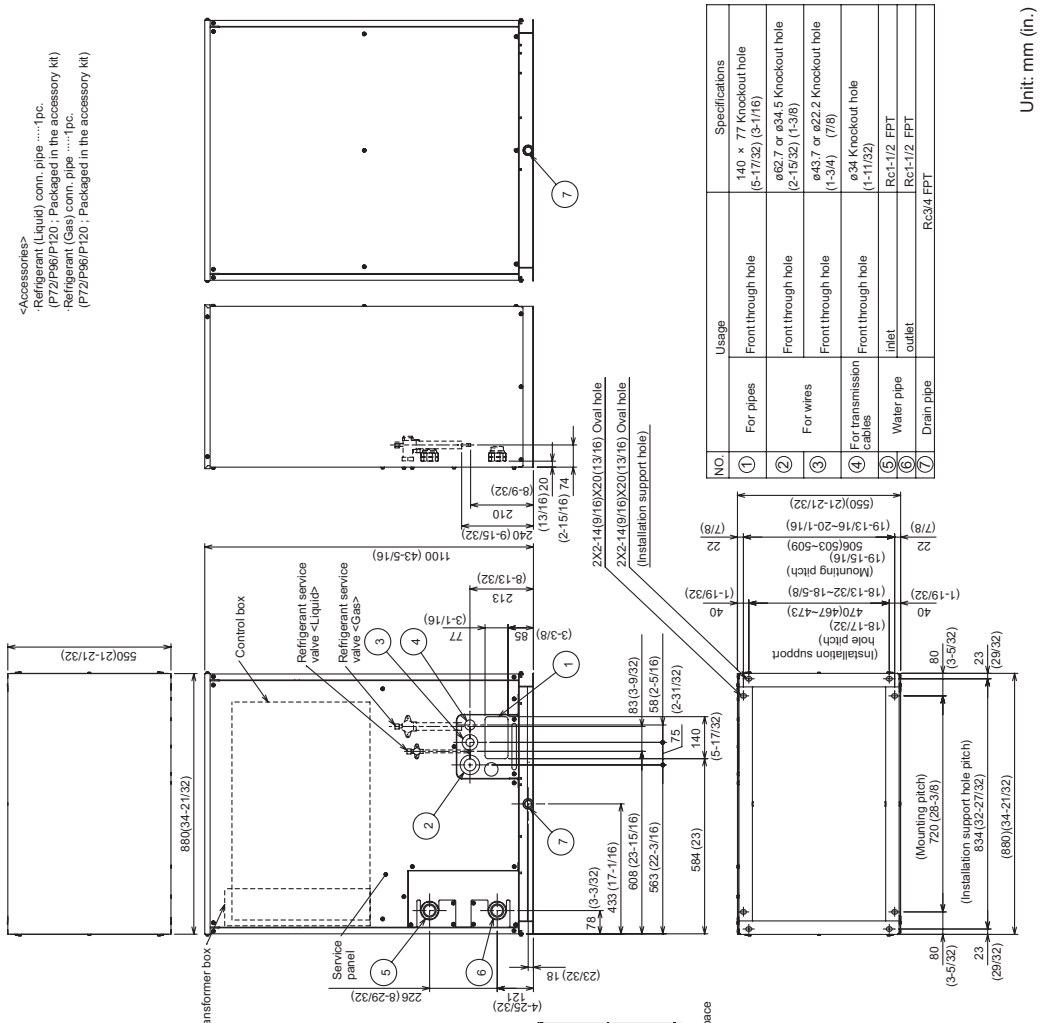
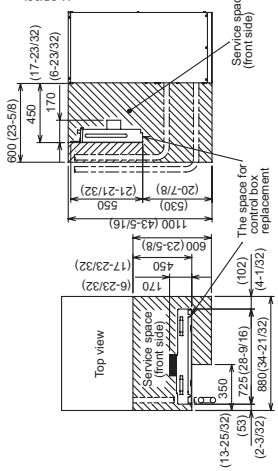
Modules 1 and 2: PQHY-P120YHMU-A & PQHY-P96YHMU-A – DIMENSIONS





<Accessories>
- Refrigerant (Liquid) conn. pipe ····1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Refrigerant (Gas) conn. pipe ····1pc. (P72/P96/P120 ; Packaged in the accessory kit)

NO.	Usage	Specifications
①	For pipes	Front through hole 140 × 77 Knockout hole (5-17/32) (3-1/16)
②	For wires	Front through hole ø62.7 or ø34.5 Knockout hole (2-15/32) (1-3/8)
③	For wires	Front through hole ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
④	For transmission cables	Front through hole ø34 Knockout hole (1-11/32)
⑤	Water pipe	inlet Rc1-1/2 FPT
⑥	Water pipe	outlet Rc1-1/2 FPT
⑦	Drain pipe	Rc3/4 FPT

Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty, etc., to prevent moisture or dirt from entering cabinet.

Note2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.

Note3. Take notice of service space as Fig. A. (In case of single installation, 600mm(23-5/8) or more of back space as front space makes easier access when servicing the unit from rear side)

Note4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig. B.

Note5. Environmental condition for installation; 32~104°F as indoor installation.

Note6. In case the temperature around the heat source unit has possibility to drop under 0°C(32°F), be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
- *Circulate the water all the time even if the heat source unit is not in operation.
- *Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.

Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.

Note8. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

Model	Connection specifications for the refrigerant service valve *1	
	Liquid	Gas
PQHY-P72YHMU-A	ø9.52 Brazed (3/8)	ø19.05 Brazed (3/4)
PQHY-P96YHMU-A	ø9.52 Brazed (3/8) (ø12.7 Brazed)*2 (1/2)	ø22.2 Brazed (7/8)
PQHY-P120YHMU-A	ø9.52 Brazed (3/8) (ø12.7 Brazed)*3 (1/2)	

*1 Connect by using the connecting pipes that are supplied.
*2 Total length ≧295 ft. (90m)
*3 Total length ≧131 ft. (40m)

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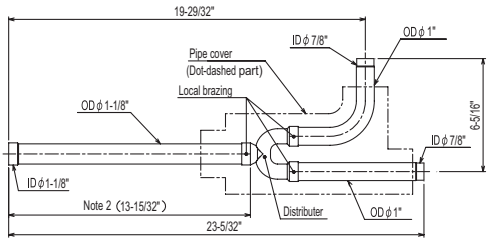
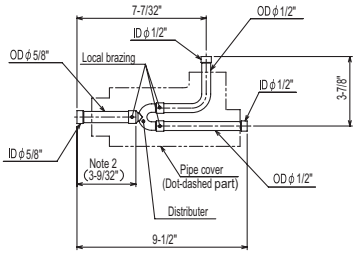
Twinning Kit: CMY-Y100CBK3

For Gas pipe:



For Liquid pipe:



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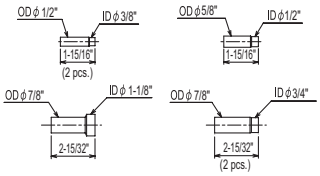

ID: Inner Diameter OD: Outer Diameter

Notes:

FORM# PQHY-P216YSHMU-A - 201407

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