

Job Name:

Schedule Reference:

Date:



OUTDOOR VRF HEAT PUMP SYSTEM

ACCESSORIES

- Twinning Kit ... (Required - sold separately) CMY-Y200CBK2
- T-Branch Joint ($\leq 72,000$ Btu/h) CMY-Y102SS-G2
- T-Branch Joint (73,000 - 144,000 Btu/h) CMY-Y102LS-G2
- T-Branch Joint (145,000 - 234,000 Btu/h) CMY-Y202S-G2
- T-Branch Joint ($\geq 235,000$ Btu/h) CMY-Y302S-G2
- Header - 4 Branch (Capacity: $\leq 72,000$ Btu/h) CMY-Y104C-G
- Header - 8 Branch (Capacity: $\leq 144,000$ Btu/h) CMY-Y108C-G
- Header - 10 Branch (Capacity: $\leq 234,000$ Btu/h) CMY-Y1010C-G

UNIT OPTION

- Standard Model.....PQHY-P312TSLMU-A1

Specifications		System	Module 1	Module 2
Unit Type		PQHY-P312TSLMU-A1	PQHY-P168TLMU-A1	PQHY-P144TLMU-A1
Nominal Cooling Capacity	Btu/h	312,000	168,000	144,000
Nominal Heating Capacity	Btu/h	350,000	188,000	160,000
External Dimensions (H x W x D)	In. / mm	Refer to Module Data	57-1/8 x 34-11/16 x 21-11/16 / 1,450 x 880 x 550	57-1/8 x 34-11/16 x 21-11/16 / 1,450 x 880 x 550
Net Weight	Lbs. / kg	962 / 436	481 / 218	481 / 218
Electrical Power Requirements	Voltage, Phase, Hertz	Refer to Module Data**	208/230V, 3-phase, 60Hz	
Cooling Power Input	kW	23.41	Refer to System Data	
Heating Power Input	kW	19.11		
Cooling Current (208/230V)	A	72.1 - 65.2	Refer to System Data	
Heating Current (208/230V)	A	58.9 - 53.3		
Minimum Circuit Amp. (MCA)** (*)	A	Refer to Module Data**	44 / 39**	35 / 32**
Maximum Fuse Size**	A	Refer to Module Data**	70 / 70**	60 / 50**
<i>Circulating Water (quality must meet regulations)</i>				
Flow Rate	GPM / L/s	63.4 / 4	31.7 / 2	31.7 / 2
Pressure Drop	psi	12.7	6.38	6.38
Operation Volume Range	GPM / L/s	39.6 - 101.8 / 2.6 - 6.4	19.8-50.9/ 1.3-3.2	19.8-50.9/ 1.3-3.2
Maximum Water Pressure	MPa / psi	4 / 580	2 / 290	2 / 290
Water-source Connections (Each for Inlet and Outlet)	In.	Refer to Module Data**	NPT1-1/2 Screw (Install strainer (more than 50 meshes) at water inlet piping of the unit)	
<i>Piping Diameter</i>				
From Twinning Kit to Indoor Units (Brazed) (In. / mm)	Liquid (High Pressure)	3/4 / 19.05	Refer to System Data	
	Gas (Low Pressure)	1-3/8 / 34.93		
From Modules to Twinning Kit (Brazed) (In. / mm)	Liquid (High Pressure)	Refer to Module Data	5/8 / 15.88	5/8 / 15.88
	Gas (Low Pressure)	Refer to Module Data	1-1/8(28.58)	1-1/8(28.58)
Indoor Unit	Total Capacity	50 to 130% of WSUs	Refer to System Data	
	Model / Quantity	P06 ~ P96 / 2 to 50		
Sound Pressure Levels	dB(A)	58	56	54
Compressor Operating Range		9 - 100%	Refer to System Data	
Compressor Type x Quantity			Inverter-driven Scroll Hermetic x 1	Inverter-driven Scroll Hermetic x 1
Compressor Motor Output	kW	Refer to Module Data	11.0	9.5
Compressor Crankcase Heater	kW		-	-
Refrigerant		Refer to Module Data	R410A	
Lubricant			MEL32	
High-pressure Protection Device			601 psi / 4.15 MPa	601 psi / 4.15 MPa
Compressor / Fan Protection Device		Refer to Module Data	Overheat Protection	Overheat Protection
Inverter Protection Device			Overheat / Overcurrent Protection	Overheat / Overcurrent Protection

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

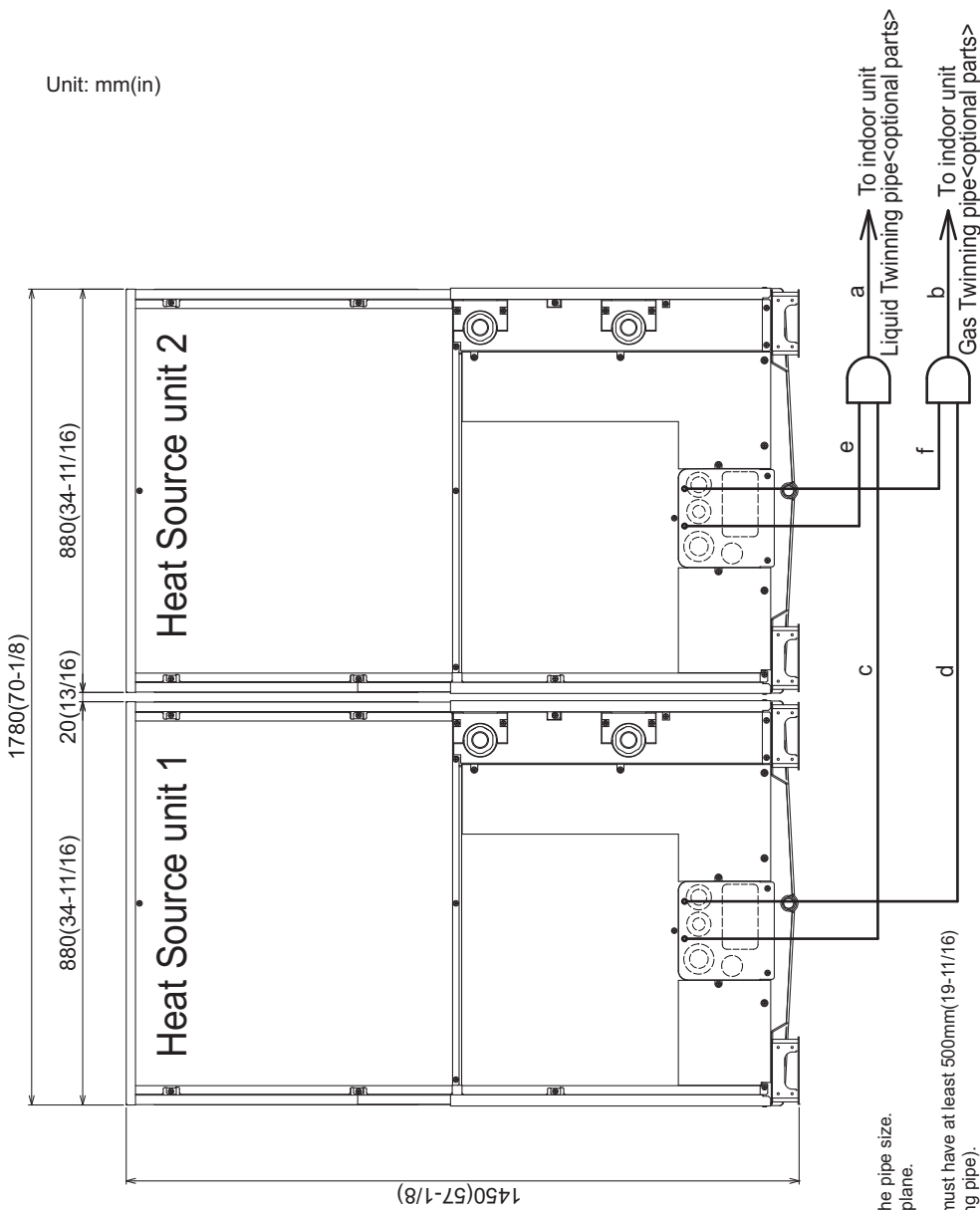
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Note: Mitsubishi Electric (MESCA) supports the use of only MESCA supplied and approved accessories for proper functioning of the unit(s). Use of non-MESCA supported accessories will affect warranty coverage.



* All electrical work shall comply with National (CEC) and local codes and regulations.

Unit: mm(in)



- Note 1. Connect the pipes as shown in the figure above. Refer to the table above for the pipe size.
 2. Twinning pipes 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-P288TSLMU-A1	PQHY-P312TSLMU-A1	PQHY-P336TSLMU-A1	PQHY-P360TSLMU-A1
Heat Source unit 1	PQHY-P144TLMU-A1	PQHY-P168TLMU-A1	PQHY-P168TLMU-A1	PQHY-P192TLMU-A1
Heat Source unit 2	PQHY-P144TLMU-A1	PQHY-P144TLMU-A1	PQHY-P168TLMU-A1	PQHY-P168TLMU-A1
Twinning Kit(optional parts)	CMY-Y200CBK2			
Indoor unit-Twinning pipe	ø19.05(3/4)			
Twinning pipe-Heat Source unit 1	Liquid	a	ø41.28(1-5/8)	
	Gas	b	ø15.88(5/8)	
Twinning pipe-Heat Source unit 2	Liquid	c	ø28.58(1-1/8)	
	Gas	d	ø12.7(1/2)	
Twinning pipe-Heat Source unit 2	Liquid	e	ø28.58(1-1/8)	
	Gas	f	ø15.88(5/8)	

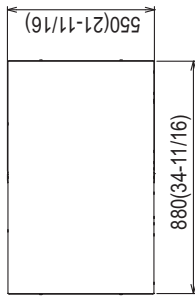
Specifications are subject to change without notice.

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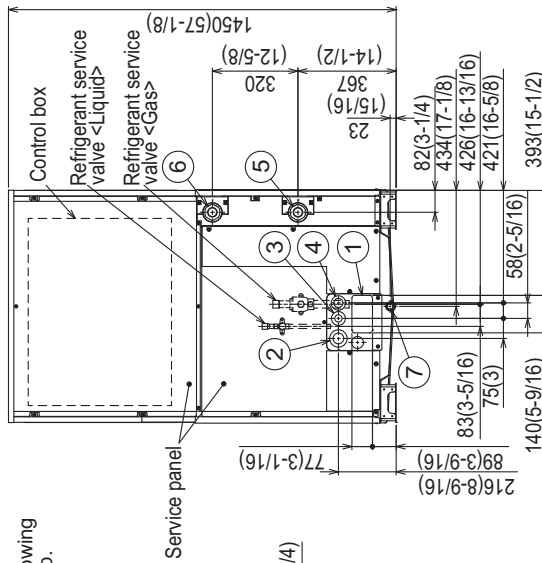
Modules: 1 : PQHY-P144TLMU-A1 - DIMENSIONS

Unit: mm(in)

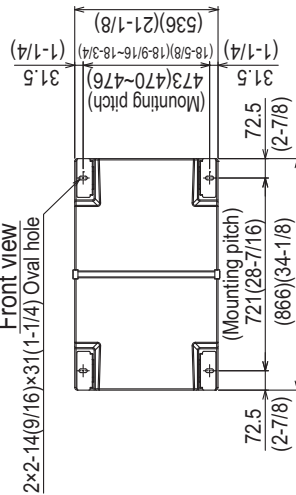
- Refrigerant (Liquid) conn. pipe 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Refrigerant (Gas) conn. elbow 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Water stopper(Liquid Gas) 1pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for water stopper (Liquid, Gas) 1pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for field piping (Liquid, Gas) 1pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for drain socket 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Pipe cover for gas 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for base leg (two types) 4pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for panel 1pc.
(P144/P168/P192; Packaged in the accessory kit)



Top view



Front view



Bottom view

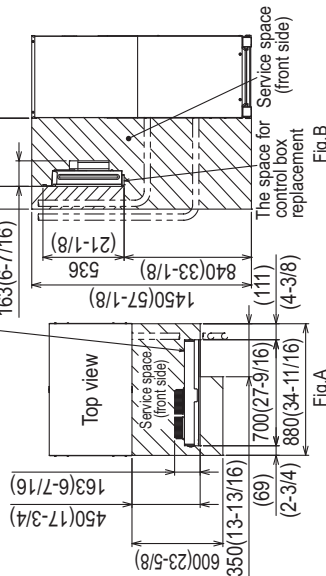


Fig. B

Fig. A

Model	Refrigerant pipe		Service valve		Diameter
	Liquid	Gas	Liquid	Gas	
PQHY-P144TLMU-A1	ø12.7 Braze (1/2) *1 *2	ø28.58 Braze (1-1/8) *1	ø15.88 (5/8)	ø28.58 (1-1/8)	
PQHY-P168TLMU-A1	ø15.88 Braze (5/8) *1	ø28.58 Braze (1-1/8) *1	ø15.88 (5/8)	ø28.58 (1-1/8)	
PQHY-P192TLMU-A1	ø15.88 Braze (5/8) *1	ø28.58 Braze (1-1/8) *1	ø15.88 (5/8)	ø28.58 (1-1/8)	

Connecting pipe specifications

- *1. Connect by using the connecting pipes and elbow that are supplied.
- *2. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

Back view

Right side view

NO.	For pipes	Usage	Specifications
①	For pipes	Front through hole	140 x 77 Knockout hole (5-9/16) (3-1/16)
②	For wires	Front through hole	ø62.7 or ø34.5 Knockout hole (2-1/2) (1-3/8)
③	For transmission cables	Front through hole	ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
④	Water pipe inlet	Front through hole	ø34 Knockout hole (1-3/8)
⑤	Water pipe outlet	inlet	NPT1-1/2 Screw
⑥	Drain pipe	outlet	NPT1-1/2 Screw
⑦			Rc3/4 Screw

Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)

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.

Note3. Ensure there is no leak after the attachment has been fitted. 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; -20~40°C(DB) (-4~104°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.

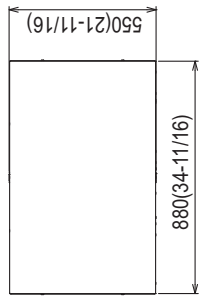
Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.

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).

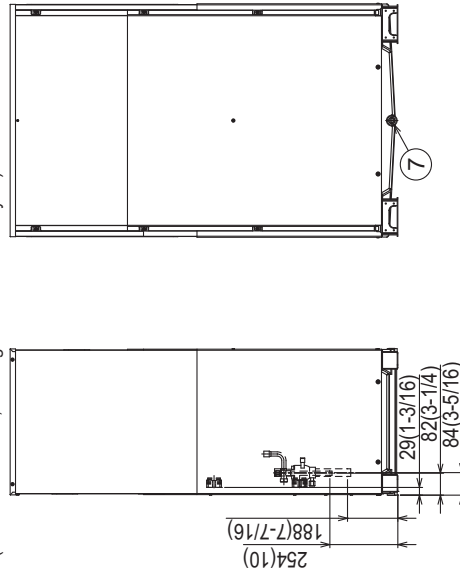
Modules: 1 : PQHY-P168TLMU-A1 - DIMENSIONS

Unit: mm(in)

- Refrigerant (Liquid) conn. pipe 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Refrigerant (Gas) conn. elbow 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Water stopper(Liquid, Gas) 1pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for water stopper (Liquid, Gas) 1pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for field piping (Liquid, Gas) 4pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for drain socket 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Pipe cover for gas 1pc.
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for base leg (two types) 4pc. each
(P144/P168/P192; Packaged in the accessory kit)
- Sealing material for panel 1pc.
(P144/P168/P192; Packaged in the accessory kit)



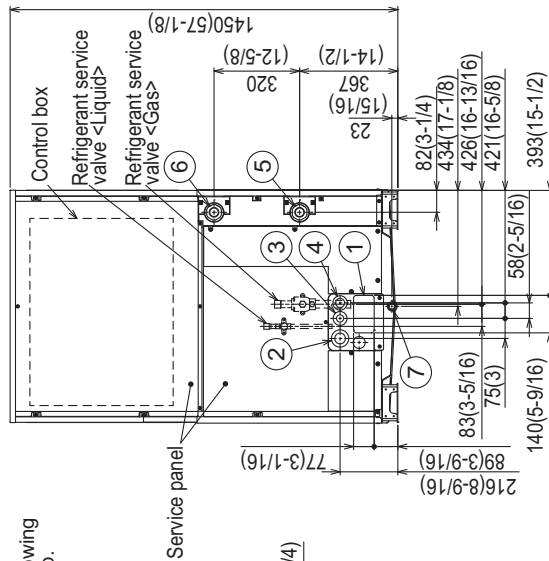
Top view



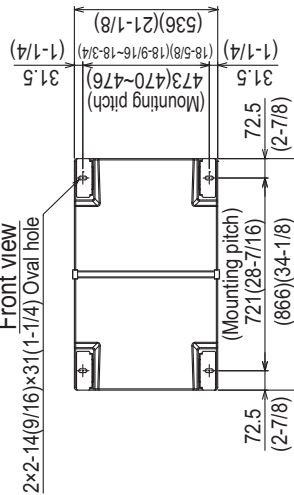
Right side view

Back view

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⑥	Drain pipe	outlet	NPT1-1/2 Screw
⑦			Rc3/4 Screw

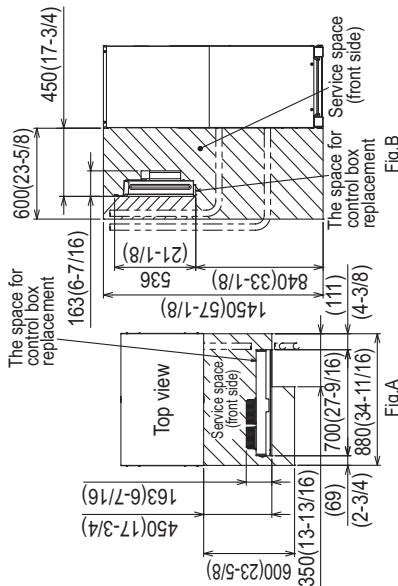


Front view



Bottom view

- Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
- 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.)
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 - 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).



Model	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
PQHY-P144TLMU-A1	ø12.7 Braze (1/2)"*1-2	ø28.58 Braze (1-1/8)"*1	ø15.88 (5/8)	ø28.58 (1-1/8)
PQHY-P168TLMU-A1	ø15.88 Braze (5/8)"*1			
PQHY-P192TLMU-A1				

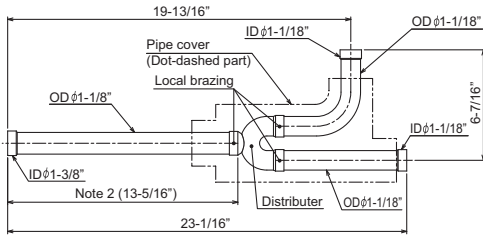
Connecting pipe specifications

- *1. Connect by using the connecting pipes and elbow that are supplied.
*2. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

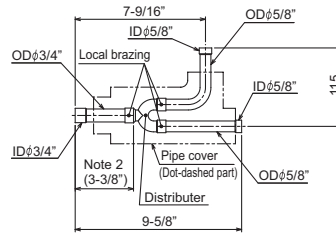
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CMY-Y200CBK2

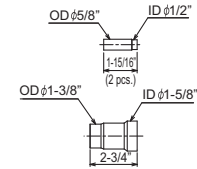
For Gas pipe:



For Liquid pipe:

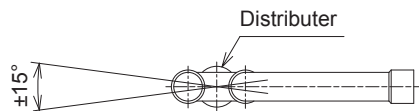


<Deformed pipe(Accessory)>



ID: Inner Diameter OD: Outer Diameter

Note 1. Reference the attitude angle of the branch pipe below the fig.



The angle of the branch pipe for high pressure is within $\pm 15^\circ$ against the horizontal plane.

2. Use the attached pipe to braze the port-opening of the distribute
3. Pipe diameter is indicated by inside diamete
4. Only use the Twining pipe by Mitsubishi (optional parts)

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Notes:



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