CITYMULTI®

Model: 12-TON PQRY-P144TSLMU-A

(Consists of Two PQRY-P72TLMU-A and One CMY-Q100CBK2 Twinning Kit)

MITSUBISHI ELECTRIC

Job Name:	
System Reference:	Date:



MODULAR WATER-SOURCE VRF HEAT PUMP SYSTEM

ACCESSORIES:

☑ Twinning Kit (required) CMY-Q100CBK2
Joint Kit ..... For details see Piping Accessories Submittal
BC Controller ..... For details see BC Controller Submittal

Specifications		System	Module 1	Module 2
Unit Type		PQRY-P144TSLMU-A-(-BS)	PQRY-P72TLMU-A-(-BS)	PQRY-P72TLMU-A-(-BS)
Nominal Cooling Capacity (208/230V)	Btu/h	144,000	72,000	72,000
Nominal Heating Capacity (208/230V)	Btu/h	160,000	80,000	80,000
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		50~113° F (10~45° C)	
	Heating		50~113° F (10~45° 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 (1100 x 880 x 550)	43-5/16 x 34-11/16 x 21-11/16 (1100 x 880 x 550)
Net Weight	Lbs. (kg)	760 (344)	380 (172)	380 (172)
External Finish		Refer to Module Data	Galvanized steel sheet	
Electrical Power Requirements	Voltage, Phase, Hertz	Refer to Module Data**	208 / 230V, 3-phase, 60Hz	
Minimum Circuit Ampacity (MCA)**	A	Refer to Module Data**	13 / 12	13 / 12
Maximum Overcurrent Protection (MOP)**	A	Refer to Module Data**	20	20
Circulating Water (quality must meet regulations)				
Flow Rate	GPM / L/s	Refer to Module Data	25.4 / 1.6	25.4 / 1.6
Pressure Drop	FT / psi		8.0 / 3.48	8.0 / 3.48
Operation Volume Range	GPM / L/m		13.2 - 31.7 / 50 - 120	13.2 - 31.7 / 50 - 120
Maximum Water Pressure	MPa / psi		2 / 290	2 / 290
Water-source Connection for Inlet and Outlet	In.		1-1/2 NPT	1-1/2 NPT
Piping Diameter (Brazed)				
From Twinning Kit to First Joint or Header (In. / mm)	Liquid (High Pressure)	7/8 / 22.20	Refer to System Data	Refer to System Data
	Gas (Low Pressure)	1-1/8 / 28.6	Refer to System Data	Refer to System Data
From Modules to Twinning Kit (In. / mm)	Liquid (High Pressure)	Refer to Module Data	5/8 / 15.88	5/8 / 15.88
	Gas (Low Pressure)	Refer to Module Data	3/4 / 19.1	3/4 / 19.1
Max. Total Refrigerant Line Length	Ft.	2,460	Refer to System Data	Refer to System Data
Max. Refrigerant Line Length (Bet.ODU & IDU)	Ft.	541		
Max. Control Wiring Length	Ft.	1,640		
Indoor Unit	Total Capacity	50~150	Refer to System Data	Refer to System Data
	Model / Quantity	P6~P96 / 1~36	Refer to System Data	Refer to System Data
Sound Pressure Level	dB(A)	49	46	46
Compressor Operating Range		12% - 100%	Refer to System Data	Refer to System Data
Compressor Type x Quantity		Refer to Module Data**	Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
Refrigerant		Refer to Module Data	R410A x 11 lbs. + 1 oz. (5.0 kg)	R410A x 11 lbs. + 1 oz. (5.0 kg)
Protection Devices	High Pressure	Refer to Module Data	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter Circuit		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
AHRI Ratings (Ducted/Non-Ducted)	EER	15.1 / 18.6	Refer to System Data	
	IEER	22.5 / 26.1	Refer to System Data	
	COP	5.29 / 5.94	Refer to System Data	
	SCHE	21.7 / 20.2	Refer to System Data	

NOTES:

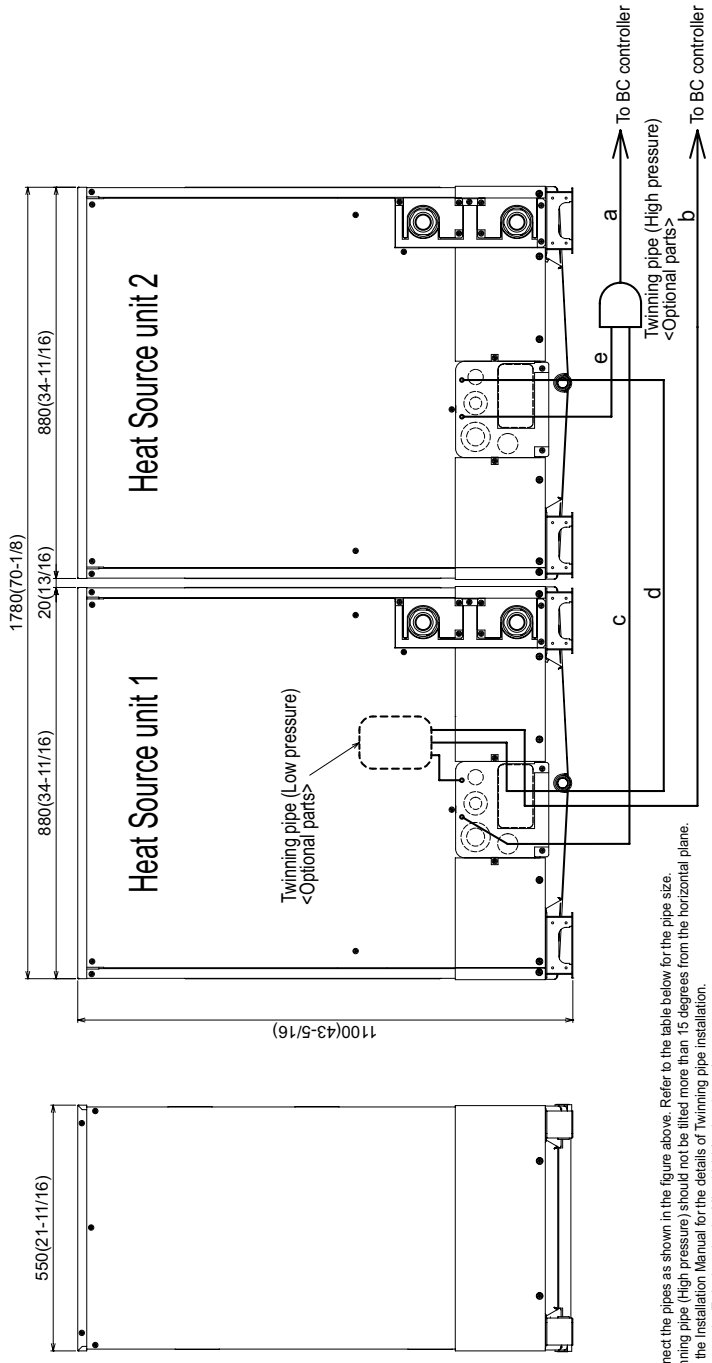
** Each individual module requires a separate electrical connection. Reference electrical data for each individual module.

Specifications are subject to change without notice.

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Model:PQRY-P144TSLMU-A- DIMENSIONS

Unit : mm(in)



Note 1.Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2.Twinning pipe (High pressure) 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.Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name			PQRY-P144TSLMU-A	PQRY-P168TSLMU-A	PQRY-P192TSLMU-A	PQRY-P216TSLMU-A	PQRY-P240TSLMU-A
Component unit name	Heat Source unit 1		PQRY-P72TLMU-A	PQRY-P96TLMU-A	PQRY-P96TLMU-A	PQRY-P120TLMU-A	PQRY-P120TLMU-A
	Heat Source unit 2		PQRY-P72TLMU-A	PQRY-P72TLMU-A	PQRY-P96TLMU-A	PQRY-P96TLMU-A	PQRY-P120TLMU-A
Twinning pipe Kit(optional parts)			CMY-Q100CBK2				
BC controller~Twinning pipe	High pressure	a	ø22.2(7/8)			ø22.2(7/8) *1	
	Low pressure	b	ø28.58(1-1/8)			ø34.93(1-3/8)	

	Unit model	High pressure	Low pressure
		c or e	d
Twinning pipe~Heat source unit	P72	ø15.88(5/8) *2	ø19.05(3/4) *2
	P96	ø19.05(3/4)	ø22.2(7/8)
	P120		

*1.When the piping length is 65 m or longer, use the ø28.58(1-1/8) pipe for the part that exceeds 65 m.
*2.When the package unit name"PQRY-P168TSLMU-A", use the ø19.05(3/4) pipe for high pressure and the ø22.2(7/8) pipe for low pressure.

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Model: PQRY-P72TLMU-A- DIMENSIONS

Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and plug unused knockout holes with putty, etc., to prevent moisture or dirt from entering cabinet.
Note2. At the time of product shipment, the front side piping serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach on the front side. Ensure there is no leak in piping system once connected.
Note3. See Fig. A and Fig. B for service clearances.
Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.
Note5. Environmental condition for installation; -20~40°C(DB) (-4~104°F) for 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 heat source unit is not in operation and provide glycol for freeze protection.
•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).

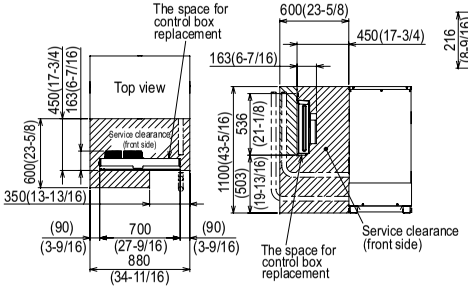
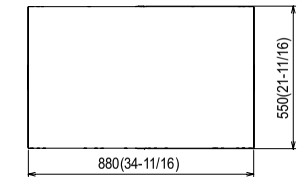
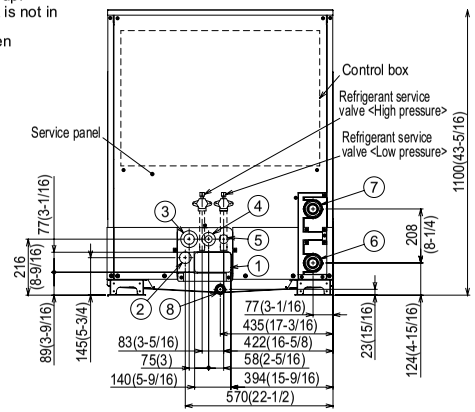


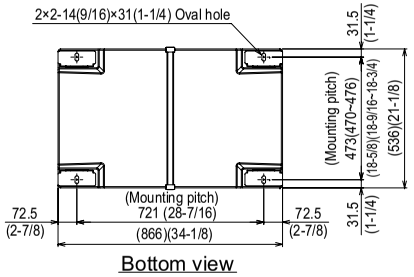
Fig.A Fig.B



Top view



Front view



Bottom view

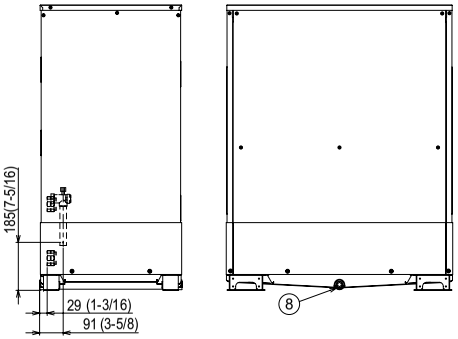
Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
PQRY-P72TLMU-A	ø15.88 Brazed (5/8) *1 *2	ø19.05 Brazed (3/4) *1 *2	ø19.05 (3/4)	ø25.4 (1)
PQRY-P96TLMU-A	ø19.05 Brazed (3/4) *1	ø22.2 Brazed (7/8) *1 *2		
PQRY-P120TLMU-A				

*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.

<Accessories>
- Refrigerant (high pressure) conn. pipe ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Refrigerant (low pressure) conn. elbow ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Water stopper ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for water stopper ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for field piping (high pressure, low pressure) ····· 1pc. each (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for drain socket ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Pipe cover for low pressure ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)

Top of unit casing not suitable for supporting system modules stacked above - field framing required for stacking modules of additional systems



Right side view Back view

NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole (5-9/16) (3-1/16)
②		Front through hole (Uses when twinning kit (optional parts) is mounted.)	ø45 Knockout hole (1-13/16)
③	For wires	Front through hole	ø62.7 or ø34.5 Knockout hole (2-1/2) (1-3/8)
④		Front through hole	ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
⑤	For transmission cables	Front through hole	ø34 Knockout hole (1-3/8)
⑥	Water pipe	inlet	NPT1-1/2 Screw
⑦		outlet	NPT1-1/2 Screw
⑧	Drain pipe	Rc3/4 Screw	

Unit : mm(in)

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Model: PQRY-P72TLMU-A- DIMENSIONS

Note1. Seal around the water piping, the refrigerant piping, the power supply, and the control wiring and plug unused knockout holes with putty, etc., to prevent moisture or dirt from entering cabinet.
Note2. At the time of product shipment, the front side piping serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach on the front side. Ensure there is no leak in piping system once connected.
Note3. See Fig. A and Fig. B for service clearances.
Note4. If piping is installed in front of the unit, provide clearances as shown in Fig. A and Fig. B.
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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.
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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).

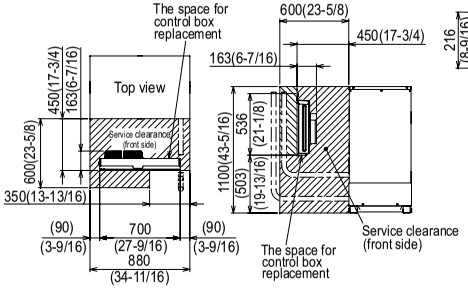
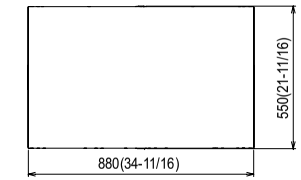
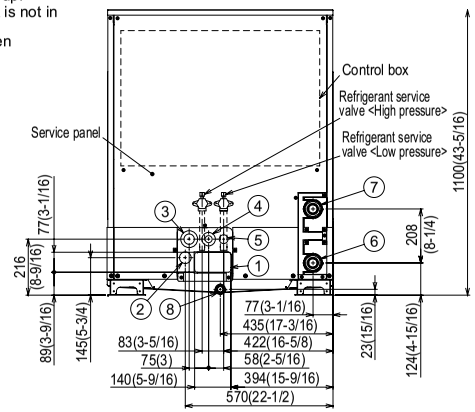


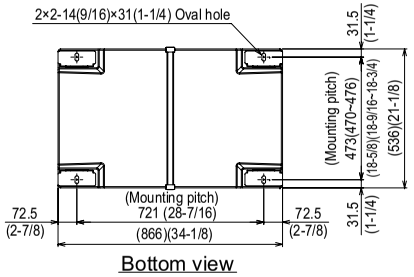
Fig.A Fig.B



Top view



Front view



Bottom view

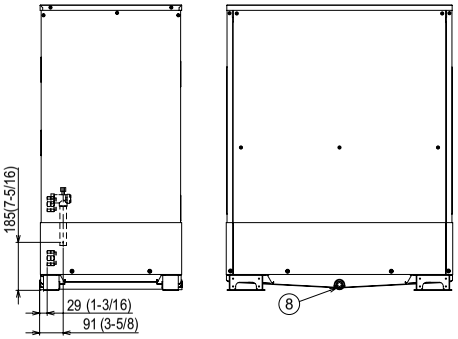
Connecting pipe specifications

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	Refrigerant pipe		Service valve	
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PQRY-P96TLMU-A	ø19.05 Brazed (3/4) *1	ø22.2 Brazed (7/8) *1 *2		
PQRY-P120TLMU-A				

*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.

<Accessories>
- Refrigerant (high pressure) conn. pipe ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Refrigerant (low pressure) conn. elbow ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Water stopper ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for water stopper ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for field piping (high pressure, low pressure) ····· 1pc. each (P72/P96/P120 ; Packaged in the accessory kit)
- Sealing material for drain socket ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)
- Pipe cover for low pressure ····· 1pc. (P72/P96/P120 ; Packaged in the accessory kit)

Top of unit casing not suitable for supporting system modules stacked above - field framing required for stacking modules of additional systems



Right side view Back view

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④		Front through hole	ø43.7 or ø22.2 Knockout hole (1-3/4) (7/8)
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⑥	Water pipe	inlet	NPT1-1/2 Screw
⑦		outlet	NPT1-1/2 Screw
⑧	Drain pipe	Rc3/4 Screw	

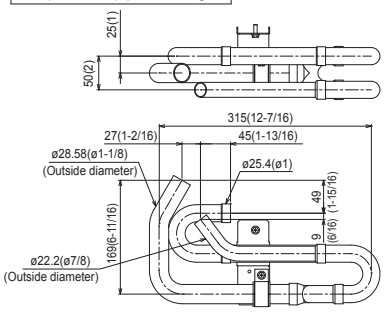
Unit : mm(in)

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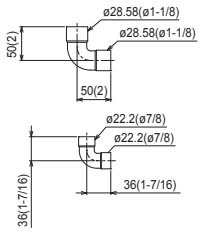
Twinning Kit:CMY-Q100CBK2- DIMENSIONS

Unit : mm(in)

Low-pressure pipe twinning kit



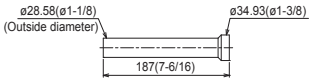
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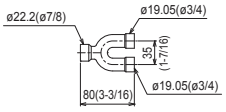
<Accessory>

Fixing screw	• • • 1
Insulation cover	• • • 1
Pipe cover (150mm(5-15/16) Length)	• • • 2
Pipe cover (60mm(2-3/8) Length)	• • • 1
Pipe cover (80mm(3-3/16) Length)	• • • 2
Cable tie	• • • 2
Water stopper	• • • 1
Sealing material (Small)	• • • 1
Sealing material (Large)	• • • 1

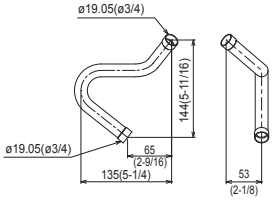
<Pipe for routing through the front (Accessory)>



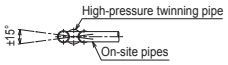
High-pressure twinning pipe



<Pipe for routing through the front (Accessory)>



Note 1. Refer to the figure below for the installation position of the high-pressure twinning pipe.



Inclination tolerance of the high-pressure twinning pipe is ±15° relative to the ground.

2. Pipe diameter is indicated by inside diameter.

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FORM# PQRY-P144TSLMU-A-201708

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