CITYMULTI®

12-TON PUHY-HP144TSNU-A

MITSUBISHI ELECTRIC
HEATING & AIR CONDITIONING

Job Name:

System Reference: Date:

208/230V OUTDOOR VRF HEAT PUMP SYSTEM



ACCESSORIES

- ☑ Big Foot Stand ..... for details see Big Foot Stands submittals
- ☑ Twinning Kit (Required) CMY-Y100CBK3
- ☑ Header Kit ..... for details see Pipe Accessories Submittal
- ☑ Joint Kit ..... for details see Pipe Accessories Submittal
- ☑ Low Ambient Kit ..... for details see Low Ambient Kit Submittal
- ☑ Snow/Hail Guards Kit ..... for details see Snow/Hail Guards Kit Submittal

Specifications			System
Unit Type			PUHY-HP144TSNU-A
Cooling Capacity (Nominal)		BTU/H	144,000
Heating Capacity (Nominal)		BTU/H	160,000
Net Weight		Lbs. [kg]	1,218 [552]
Refrigerant Piping Diameter	Liquid (High Pressure)	In. [mm]	1/2 [12.7] Brazed
	Gas (Low Pressure)	In. [mm]	1-1/8 [28.58] Brazed
Max. Total Refrigerant Line Length		Ft.	3,280
Max. Refrigerant Line Length (Between ODU & IDU)		Ft.	541
Max. Control Wiring Length		Ft.	1,640
Indoor Unit Connectable	Total Capacity		50.0~130.0% of outdoor unit capacity
	Model/Quantity		P04~P96/1.0~36.0
Sound Pressure Levels		dB(A)	58.5/60.5
Sound Power Levels		dB(A)	77.5/79.5
Compressor Operating Range			7.5% to 100.0%
AHRI Ratings (Ducted/Non-ducted)	EER		10.8/11.6
	IEER		19.4/23.1
	COP		3.69/4.1

Specifications			Module 1	Module 2
Unit Type			PUHY-HP72TNU-A	PUHY-HP72TNU-A
Cooling Capacity (Nominal)		BTU/H	72,000	72,000
Heating Capacity (Nominal)		BTU/H	80,000	80,000
Guaranteed Operating Range[1]	Cooling[2]	°F [°C]	23~126 [-5.0~52.0]	23~126 [-5.0~52.0]
Guaranteed Operating Range	Heating	°F [°C]	-22~60 [-30.0~15.5]	-22~60 [-30.0~15.5]
Extended Operating Range	Heating	°F [°C]	-27.4~60 [-33.0~15.5]	-27.4~60 [-33.0~15.5]
External Dimensions (H x W x D)		In. [mm]	71-5/8 x 49-1/4 x 29-3/8 [1,818 x 1,250 x 745]	71-5/8 x 49-1/4 x 29-3/8 [1,818 x 1,250 x 745]
Net Weight		Lbs. [kg]	609 [276]	609 [276]
External Finish			Pre-coated galvanized steel sheet [MUNSELL 3Y 7.8/1.1 or similar]	Pre-coated galvanized steel sheet [MUNSELL 3Y 7.8/1.1 or similar]
Electrical Power Requirements	Voltage, Phase, Hertz, Power Tolerance		208/230V, 3-phase, 60 Hz, ±10%	208/230V, 3-phase, 60 Hz, ±10%
Minimum Circuit Ampacity		A	55.0/49.0	55.0/49.0
Maximum Overcurrent Protection		A	90/80	90/80
Recommended Fuse Size		A	60/50	60/50
Recommended Minimum Wire Size		AWG [mm]	6/6 [13.3/13.3]	6/6 [13.3/13.3]
SCCR		kA	5	5
FAN[4]	Type x Quantity		Propeller fan x 2	Propeller fan x 2
	Airflow Rate	CFM	6,700	6,700
	External Static Pressure	In. WG	Selectable; 0.00, 0.12, 0.24, 0.32, In. WG; factory set to 0 In. WG	Selectable; 0.00, 0.12, 0.24, 0.32, In. WG; factory set to 0 In. WG
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	Inverter scroll hermetic compressor x 1
Refrigerant	Type x Original Charge		R410A x 21.0 lbs + 10.0 oz [9.8 kg]	R410A x 21.0 lbs + 10.0 oz [9.8 kg]
Protection Devices	High Pressure Protection		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 (Comp./Fan)		Over-current protection	Over-current protection

NOTES:
Nominal cooling conditions (Test conditions are based on AHRI 1230-2023)
Indoor: 80°FD.B./67°FW.B. (26.7°CD.B./19.4°CW.B.), Outdoor: 95°FD.B. (35°CD.B.)
Nominal heating conditions (Test conditions are based on AHRI 1230-2023)
Indoor: 70°FD.B. (21.1°CD.B.), Outdoor: 47°FD.B./43°FW.B. (8.3°CD.B./6.1°CW.B.)

[1]Harsh weather environments may demand performance enhancing equipment. Ask your Mitsubishi Electric representative for more details about your region
[2]For details on extended cooling operation range down to -10° F DB, see Low Ambient Kit Submittal
[3]When applying product below -4°F, consult your design engineer for cold climate application best practices, including the use of a backup source for heating
[4]Unit will continue to operate in extended operating range, but capacity is not guaranteed

Each individual module requires a separate electrical connection. Refer to electrical data for each individual module.

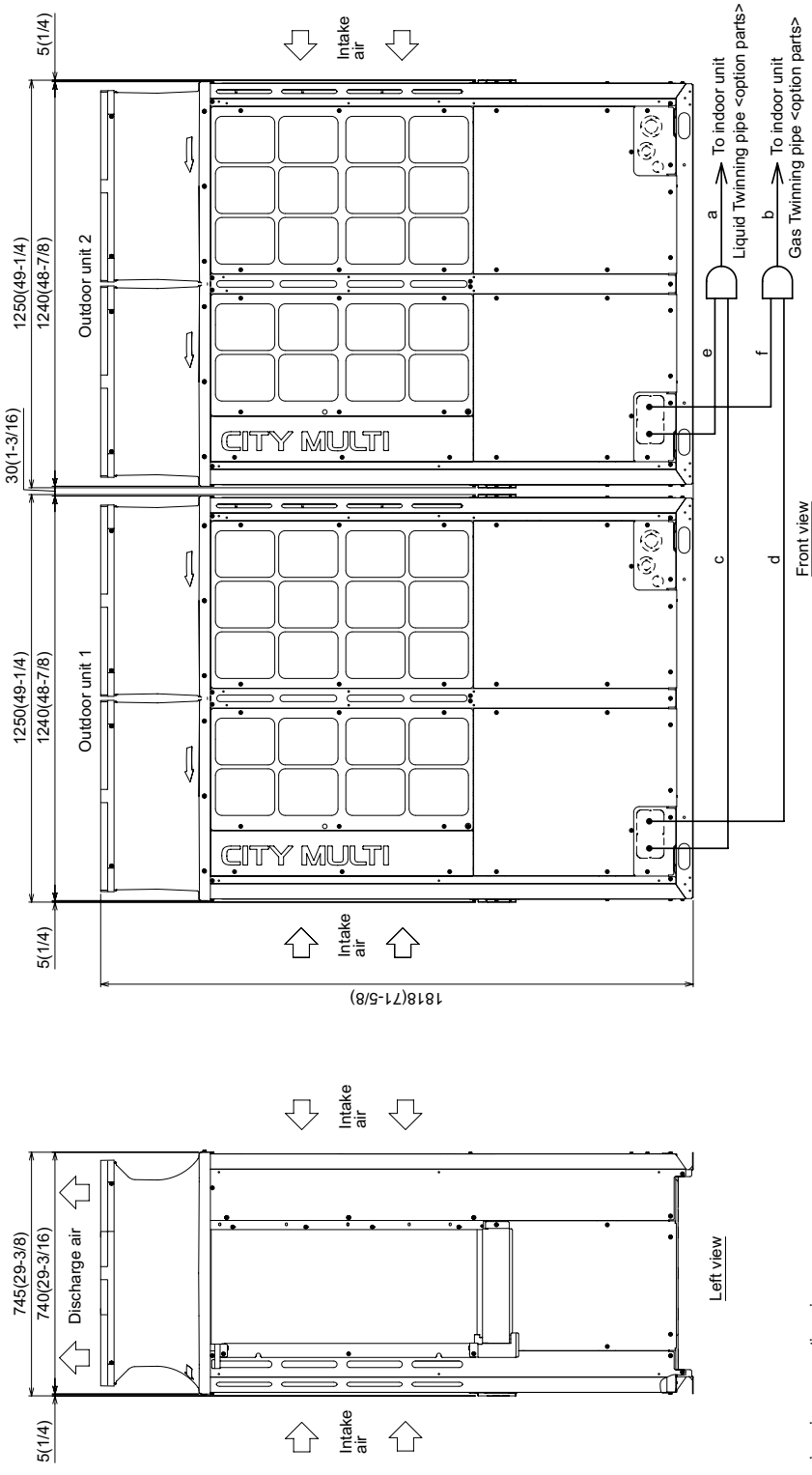
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OUTDOOR UNIT: PUHY-HP144TSNU-A – DIMENSIONS

PUHY-HP144, 192, 240TSNU-A

Unit: mm (in.)



Twinning pipe–Outdoor unit	Unit model	Liquid	Gas
		c or e	d or f
	HP72	ø9.52(3/8)	ø22.2(7/8)
	HP96	ø12.7(1/2)	ø28.58(1-1/8)
	HP120		

Twinning pipe connection size

Package unit name			PUHY-HP144TSNU-A	PUHY-HP192TSNU-A	PUHY-HP240TSNU-A
Component unit name	Outdoor unit 1		PUHY-HP72TNU-A	PUHY-HP96TNU-A	PUHY-HP120TNU-A
	Outdoor unit 2		PUHY-HP72TNU-A	PUHY-HP96TNU-A	PUHY-HP120TNU-A
Outdoor Twinning Kit(optional parts)			CMY-Y100CBK3		
BC controller ~Twinning pipe	Liquid	a	ø12.7(1/2)	ø15.88(5/8)	
	Gas	b	ø28.58(1-1/8)		

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.
Be sure to see the Installation Manual for details of Twinning pipe installation.
3. The pipe section before the Twinning pipe (section "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).
4. Only use the Twinning pipe by Mitsubishi (optional parts).

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MODULE 1: PUHY-HP72TNU-A – DIMENSIONS

PUHY-HP72, 96, 120TNU-A

Unit: mm (in.)

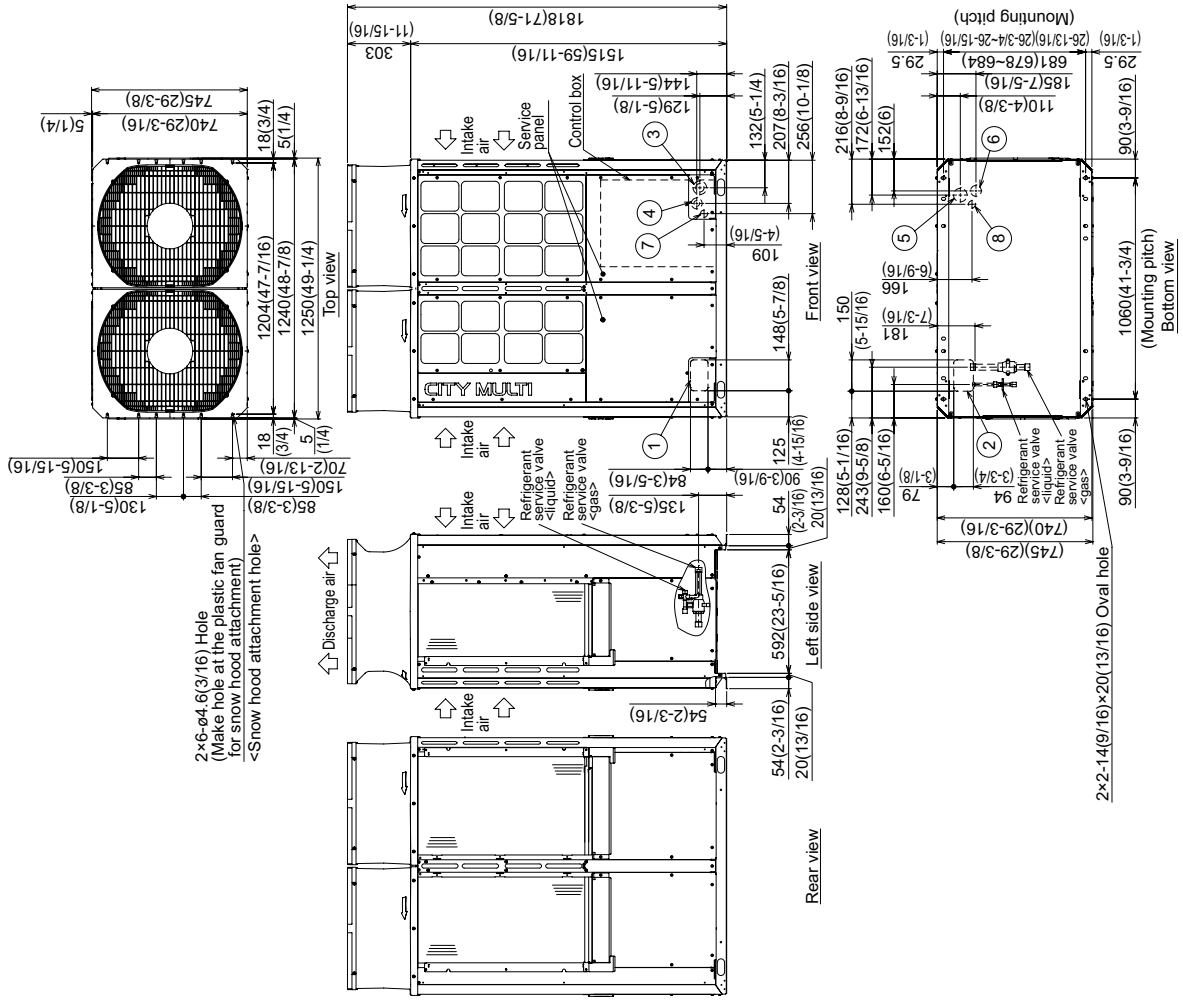
Note 1. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
HP72	ø9.52(3/8) Brazed *1	ø22.2(7/8) Brazed *1	ø12.7(1/2)	ø28.58(1-1/8)
HP96	ø9.52(3/8) Brazed (ø12.7(1/2) Brazed)*1,*3			
HP120	ø9.52(3/8) Brazed (ø12.7(1/2) Brazed)*1, *2,*4	ø28.58(1-1/8) Brazed		

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.
*2 Indicates dimensions and connection specifications in the case the unit is used in combination with other outdoor units.
*3 Furthest piping length (OU from IU) ≥ 90m
*4 Furthest piping length (OU from IU) ≥ 40m

NO.	Usage		Specifications
①	For pipes	Front through hole	148(5-7/8) × 84(3-5/16) Knockout hole
②		Bottom through hole	150(5-15/16) × 94(3-3/4) Knockout hole
③	For wires	Front through hole	ø62.7(2-1/2) or ø34.5(1-3/8) Knockout hole
④		Front through hole	ø43.7(1-3/4) or ø22.2(7/8) Knockout hole
⑤		Bottom through hole	ø65(2-9/16) Knockout hole
⑥		Bottom through hole	ø52(2-1/16) Knockout hole
⑦	For transmission cables	Front through hole	ø34(1-3/8) Knockout hole
⑧		Bottom through hole	ø34(1-3/8) Knockout hole



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MODULE 2: PUHY-HP72TNU-A – DIMENSIONS

PUHY-HP72, 96, 120TNU-A

Unit: mm (in.)

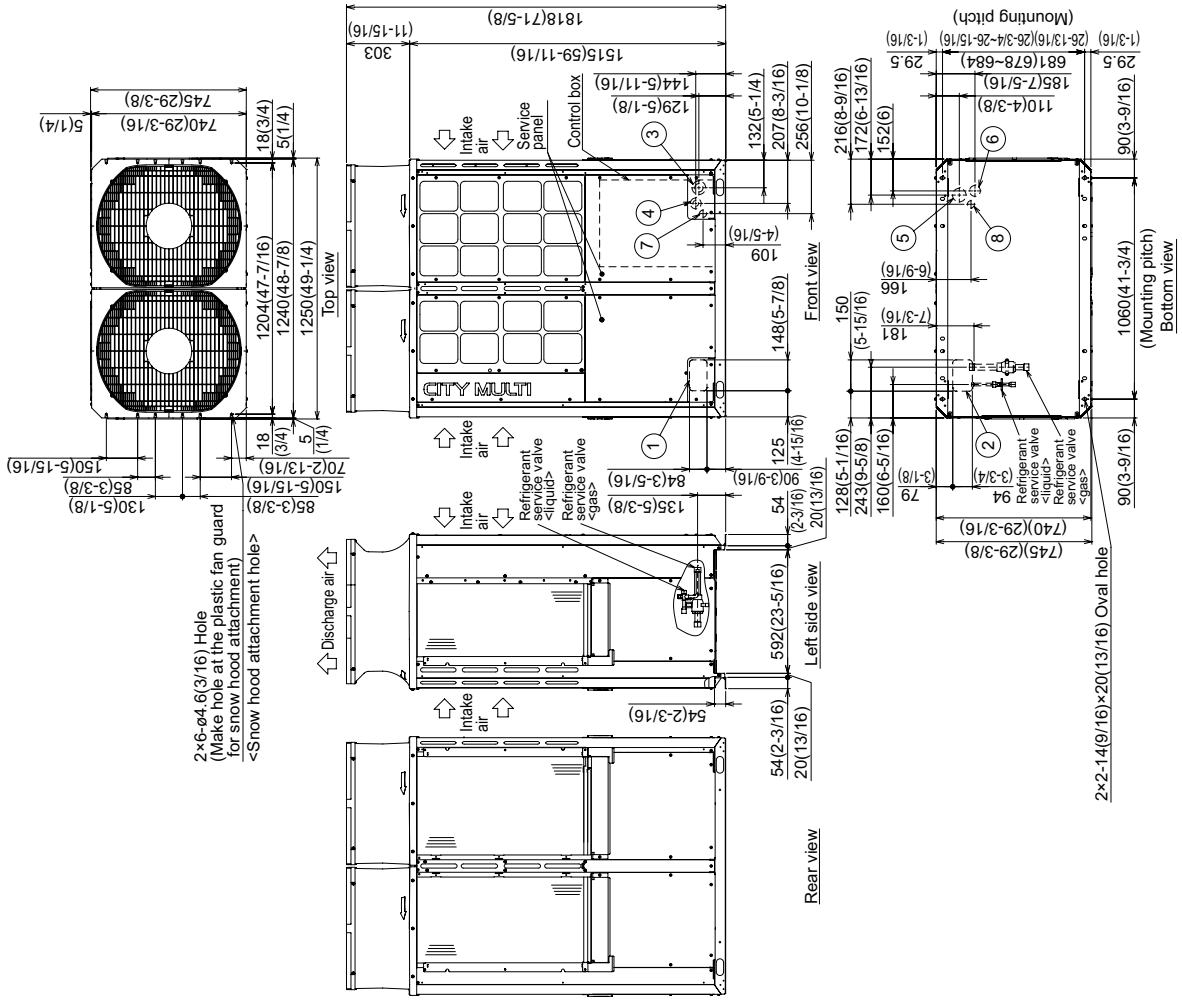
Note 1. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C(248°F).

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
HP72	ø9.52(3/8) Brazed *1	ø22.2(7/8) Brazed *1	ø12.7(1/2)	ø28.58(1-1/8)
HP96	ø9.52(3/8) Brazed (ø12.7(1/2) Brazed)*1,*3			
HP120	ø9.52(3/8) Brazed (ø12.7(1/2) Brazed)*1, *2,*4	ø28.58(1-1/8) Brazed		

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.
*2 Indicates dimensions and connection specifications in the case the unit is used in combination with other outdoor units.
*3 Furthest piping length (OU from IU) ≥ 90m
*4 Furthest piping length (OU from IU) ≥ 40m

NO.	Usage		Specifications
①	For pipes	Front through hole	148(5-7/8) × 84(3-5/16) Knockout hole
②		Bottom through hole	150(5-15/16) × 94(3-3/4) Knockout hole
③	For wires	Front through hole	ø62.7(2-1/2) or ø34.5(1-3/8) Knockout hole
④		Front through hole	ø43.7(1-3/4) or ø22.2(7/8) Knockout hole
⑤		Bottom through hole	ø65(2-9/16) Knockout hole
⑥		Bottom through hole	ø52(2-1/16) Knockout hole
⑦	For transmission cables	Front through hole	ø34(1-3/8) Knockout hole
⑧		Bottom through hole	ø34(1-3/8) Knockout hole



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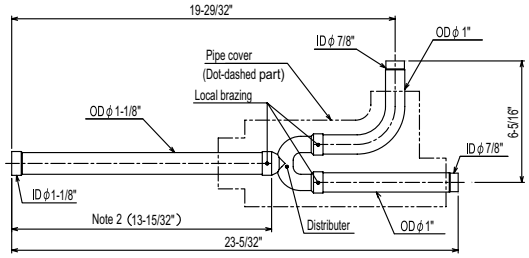
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TWINNING KIT: CMY-Y100CBK3 – DIMENSIONS

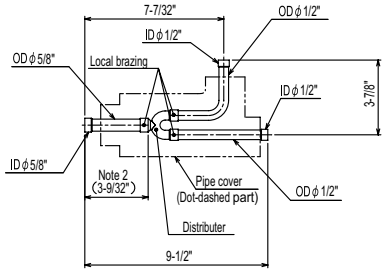
CMY-Y100CBK3

in.

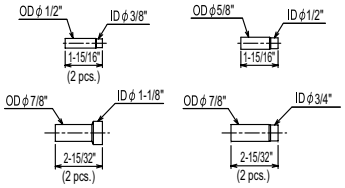
For Gas pipe:



For Liquid pipe:

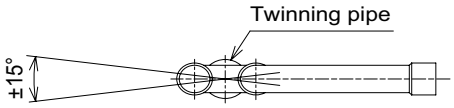


<Reducer(Accessory)>



ID: Inner Diameter OD: Outer Diameter

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



The angle of the twinning pipe is within ±15° against the horizontal plane.

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

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