CITYMULTI®

12-TON PUHY-HP144TSNU-A1

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-Y100CBK3R1
- ☑ 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-A1
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-A1	PUHY-HP72TNU-A1
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]	4/6 [21.2/13.3]	4/6 [21.2/13.3]
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 + 9.0 oz [9.8 kg]	R410A x 21.0 lbs + 9.0 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-heat protection, Over-current protection	Over-heat 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.

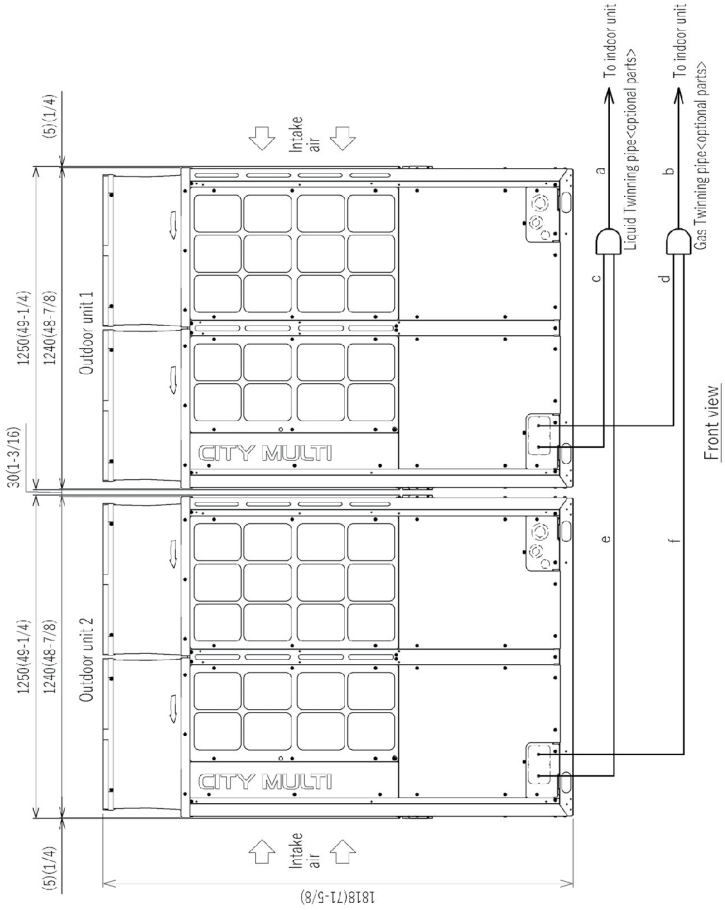
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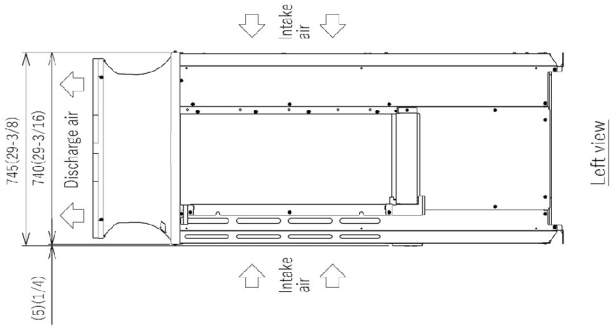
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OUTDOOR UNIT: PUHY-HP144TSNU-A1 – DIMENSIONS

PUHY-HP144, 192, 240T/YSNU-A1

Unit: mm (in.)





Twinning pipe connection size

Package unit name			HP144T/YSNU	HP192T/YSNU	HP240T/YSNU
Component unit name	Outdoor unit 1		HP72T/YNU	HP96T/YNU	HP120T/YNU
	Outdoor unit 2		HP72T/YNU	HP96T/YNU	HP120T/YNU
Outdoor Twinning Kit(optional parts)			CMY-Y100CBK3 R1	CMY-Y100CBK3 R1	CMY-Y100CBK3 R1
Indoor unit ~Twinning pipe	Liquid	a	φ12.7(1/2)	φ15.88(5/8)	φ15.88(5/8)
	Gas	b	φ28.58(1-1/8)	φ28.58(1-1/8)	φ28.58(1-1/8)
Twinning pipe -Outdoor unit 1	Liquid	c	φ9.52(3/8)	φ9.52(3/8)	φ12.7(1/2)
	Gas	d	φ22.2(7/8)	φ22.2(7/8)	φ28.58(1-1/8)
Twinning pipe -Outdoor unit 2	Liquid	e	φ9.52(3/8)	φ9.52(3/8)	φ12.7(1/2)
	Gas	f	φ22.2(7/8)	φ22.2(7/8)	φ28.58(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 must be installed horizontally using a level vessel.
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-A1 – DIMENSIONS

PUHY-HP72, 96, 120T/YNU-A1

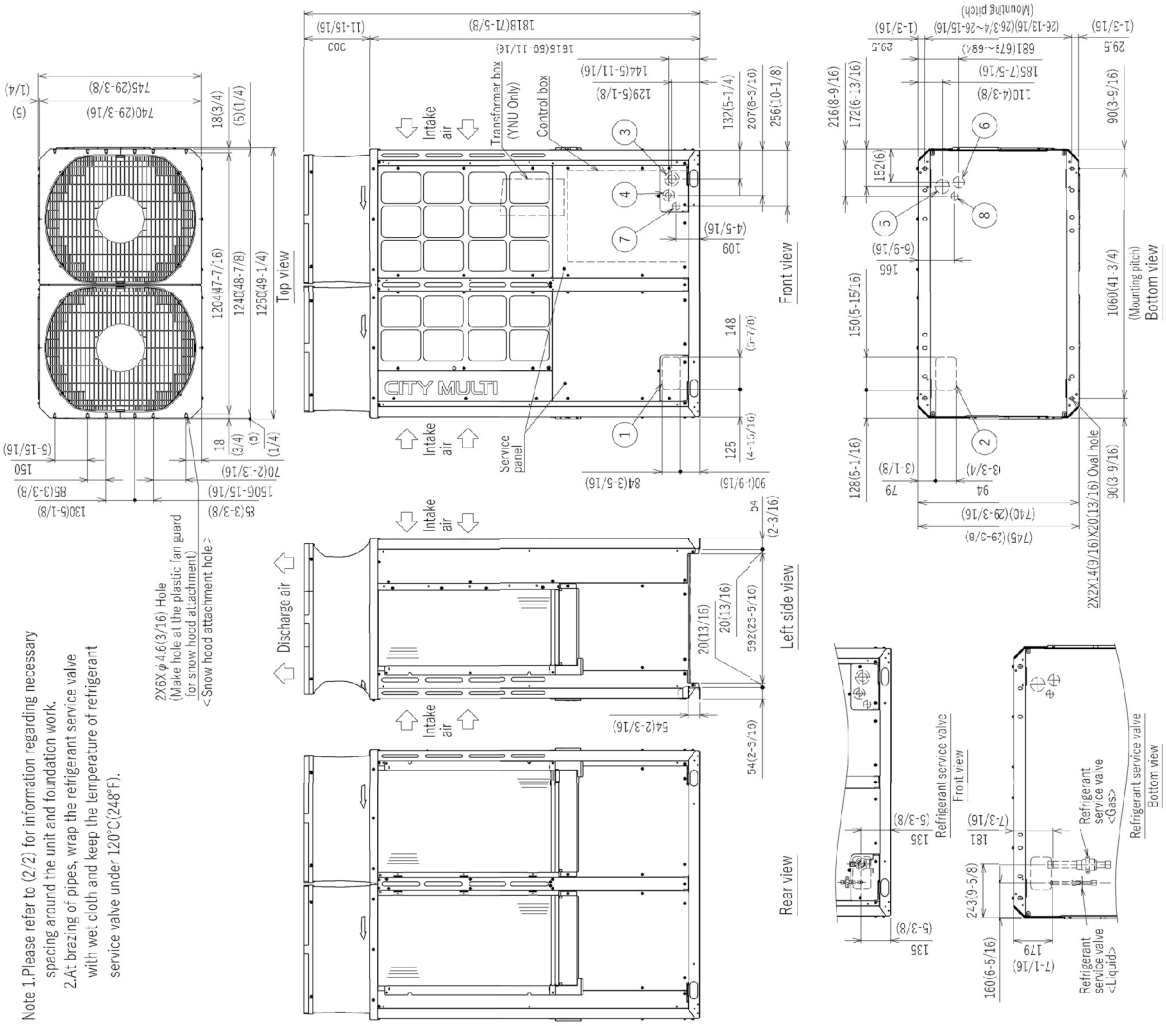
Unit: mm (in.)

Connecting pipe specifications

Model	Diameter					
	Refrigerant pipe *1				Service valve	
	Liquid		Gas		Liquid	Gas
HP72	φ9.52(3/8)	Brazed	φ22.2(7/8)	Brazed	φ 2.7(1/2)	φ28.58(1-1/8)
HP96	φ9.52(3/8)	Brazed	φ22.2(7/8)	Brazed	φ 2.7(1/2)	φ28.58(1-1/8)
HP96	φ12.7(1/2)	Brazed *3	φ22.2(7/8)	Brazed	φ 2.7(1/2)	φ28.58(1-1/8)
HP120	φ9.52(3/8)	Brazed	φ28.58(1-1/8)	Brazed	φ 2.7(1/2)	φ28.58(1-1/8)
HP120	φ12.7(1/2)	Brazed *2*4	φ28.58(1-1/8)	Brazed	φ 2.7(1/2)	φ28.58(1-1/8)

*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 (295ft)
*4 Furthest piping length (OU from IU) ≧40m (131ft)

NO.	Usage		Specifications
①	Fo pipes	Front through hole	143(5-7/8) X 84(3-5/16) Knockout hole
②		Bottom through hole	150(5-15/16) X 94(3-3/4) Knockout hole
③	Fo wires	Front through hole	φ62.7(2-1/2) or φ34.5(1-3/8) Knockout hole
④		Front through hole	φ43.7(1-3/4) or φ22.2(7/8) Knockout hole
⑤		Bottom through hole	φ65(2-5/16) Knockout hole
⑥		Bottom through hole	φ52(2-1/16) Knockout hole
⑦	For transmission cables	Front through hole	φ34(1-3/8) Knockout hole
⑧		Bottom through hole	φ34(1-3/8) Knockout hole



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MODULE 2: PUHY-HP72TNU-A1 – DIMENSIONS

PUHY-HP72, 96, 120T/YNU-A1

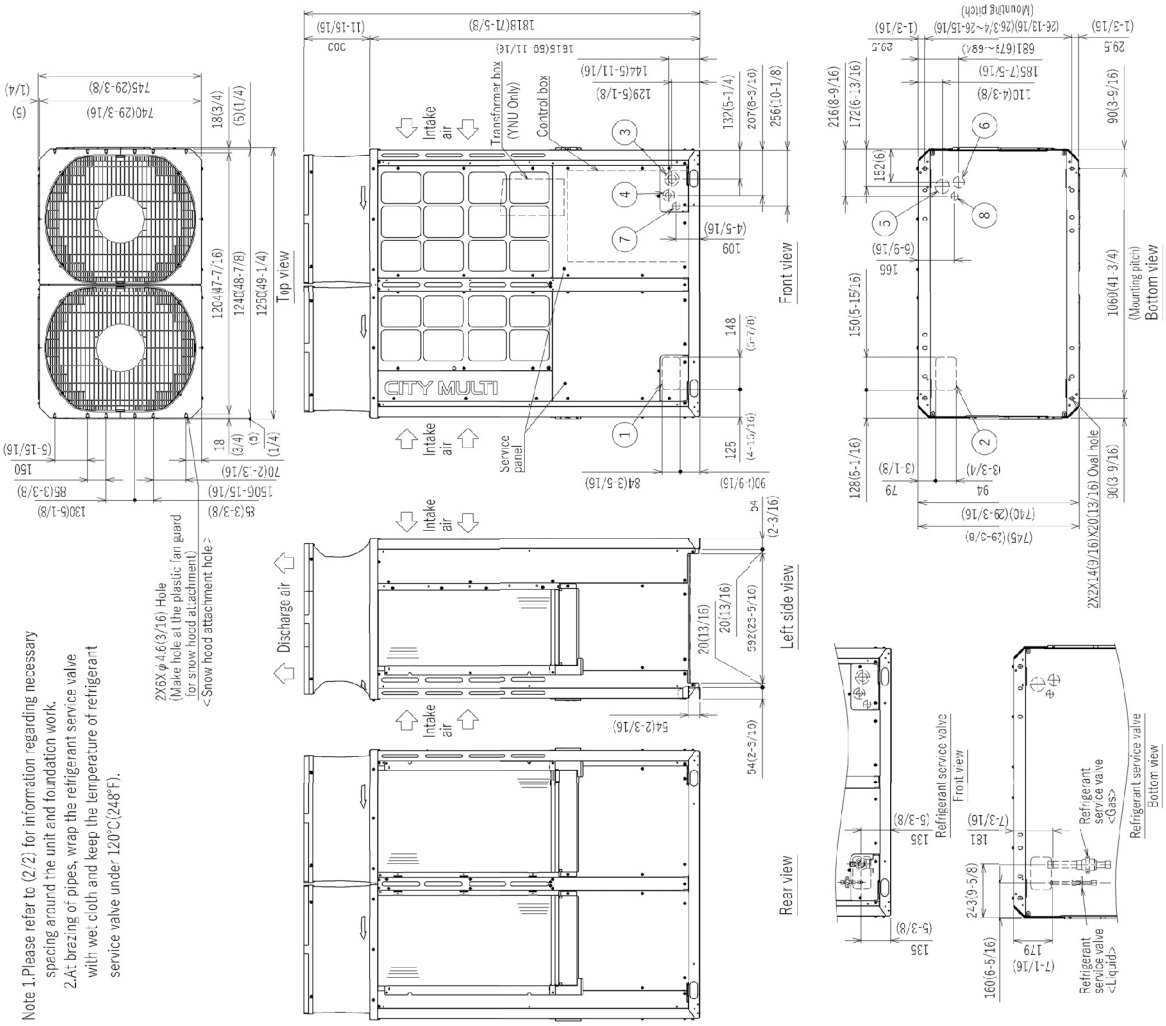
Unit: mm (in.)

Connecting pipe specifications

Model	Diameter					
	Refrigerant pipe *1				Service valve	
	Liquid		Gas		Liquid	Gas
HP72	φ9.52(3/8)	Brazed	φ22.2(7/8)	Brazed	φ12.7(1/2)	φ28.58(1-1/8)
HP96	φ9.52(3/8)	Brazed	φ22.2(7/8)	Brazed	φ12.7(1/2)	φ28.58(1-1/8)
HP96	φ12.7(1/2)	Brazed *3	φ22.2(7/8)	Brazed	φ12.7(1/2)	φ28.58(1-1/8)
HP120	φ9.52(3/8)	Brazed	φ28.58(1-1/8)	Brazed	φ12.7(1/2)	φ28.58(1-1/8)
HP120	φ12.7(1/2)	Brazed *2,*4	φ28.58(1-1/8)	Brazed	φ12.7(1/2)	φ28.58(1-1/8)

*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 (295ft)
*4 Furthest piping length (OU from IU) ≧40m (131ft)

NO.	Usage		Specifications
①	Fo pipes	Front through hole	143(5-7/8) X 84(3-5/16) Knockout hole
②		Bottom through hole	150(5-15/16) X 94(3-3/4) Knockout hole
③	Fo wires	Front through hole	φ62.7(2-1/2) or φ34.5(1-3/8) Knockout hole
④		Front through hole	φ43.7(1-3/4) or φ22.2(7/8) Knockout hole
⑤		Bottom through hole	φ65(2-5/16) Knockout hole
⑥		Bottom through hole	φ52(2-1/16) Knockout hole
⑦	For transmission cables	Front through hole	φ34(1-3/8) Knockout hole
⑧		Bottom through hole	φ34(1-3/8) Knockout hole



Note 1.Please refer to (2/2) for information regarding necessary spacing around the unit and foundation work.
2.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).

Specifications are subject to change without notice.

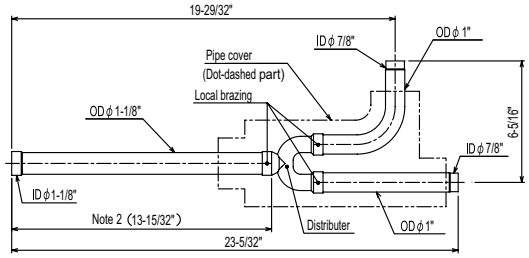
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TWINNING KIT: CMY-Y100CBK3R1 – DIMENSIONS

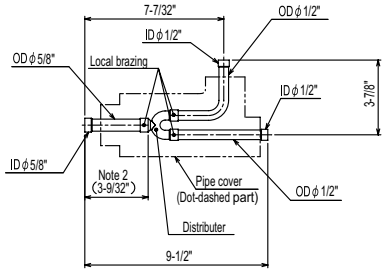
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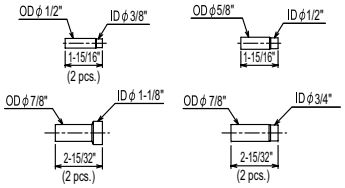
For Gas pipe:



For Liquid pipe:

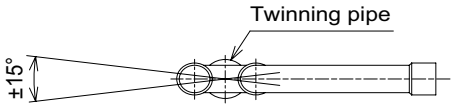


<Reducer(Accessory)>



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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