

# Mitsubishi Electric Air Conditioner CITY MULTI

## Twinning Kit Installation Manual

CMY-R100VBK, CMY-R200VBK

• For your safety, thoroughly read the following instructions prior to installation.

WT05221X02

### Safety Precautions

- Thoroughly read the following “Safety Precautions” to ensure proper installation.
- Observe the following important safety precautions at all times.
- Hazards that can occur from incorrect handling are classified by the symbols below:



#### WARNING

Incorrect handling can result in death or serious injury.



#### CAUTION

Incorrect handling can result in bodily injury and/or structure damage.

### ! WARNING

#### Only a dealer or qualified technician should perform installation.

- Improper installation may result in refrigerant gas leakage and equipment damage.

#### Do not make any modifications or alterations. Consult your dealer for repair.

- Improper installation may result in water leakage, electric shock, or fire.

#### In the event of a refrigerant leak, thoroughly ventilate the room.

- If refrigerant leaks and comes in contact with an open flame, toxic gases will be generated.

#### Properly install all parts according to the instructions in the Installation Manual.

- If the wrong twinning pipe or wrong size connecting pipe is used, air conditioning performance will suffer.

#### When installing or relocating the unit, check that no substance other than the specified refrigerant (R410A) enters the refrigerant circuit.

- Any presence of foreign substance or air can cause abnormal pressure rise or explosion.

#### After installation, check for a refrigerant leak.

- If leaked refrigerant comes in contact with a heat source, such as a fan heater, stove, or electric grill, toxic gases will be generated.

### ! CAUTION

#### Properly dispose of packing materials.

- Plastic bags can pose suffocation and choking hazards: keep them out of the reach of children. Tear the plastics bags before disposing of them.

#### Do not touch the refrigerant pipes and refrigerant circuit components with bare hands during and immediately after operation.

- During or immediately after operation, certain parts of the unit such as pipes and compressor may be either very cold or hot, depending on the state of the refrigerant in the unit at the time. To reduce the risk of frostbites and burns, do not touch these parts with bare hands.

✳ See the Installation Manual that came with the outdoor unit for installation instructions.

# 1. Confirming the Package Contents

The following items are included with the Twinning Kit (CMY-R100VBK, CMY-R200VBK). Verify that all items are present before starting installation.

※ Always use the twinning pipes included in the kit when preparing the twinning kit.

If the field-supplied pipes do not fit the parts in the kit, use the accessory piping parts listed below.

## (1) Package contents

Model	① Low-pressure twinning kit	② High-pressure twinning pipe	③ Fixing screw	④ Elbow pipe Ø22.2 [7/8]	⑤ Elbow pipe Ø28.58 [1-1/8]	⑥ Elbow pipe Ø31.75 [1-1/4]	⑦ High-pressure pipe (for routing through the bottom)	⑧ High-pressure pipe (for routing through the front)	⑨ Pipe cover	⑩ OD19.05 [3/4] -ID15.88 [5/8]	⑪ OD22.2 [7/8] -ID19.05 [3/4]	
CMY-R100VBK	1	1	2	1	1	-	3	3	1	2	1	
CMY-R200VBK	1	1	1	-	1	1	1	1	1	-	-	
Model	⑫ OD19.05 [3/4] -ID22.2 [7/8]	⑬ OD22.2 [7/8] -ID28.58 [1-1/8]	⑭ OD28.58 [1-1/8] -ID22.2 [7/8]	⑮ OD31.75 [1-1/4] -ID34.93 [1-3/8]	⑯ U-PIPE ID25.4 [1]	⑰ U-PIPE ID19.05 [3/4] -ID25.4 [1]	⑱ Saddle	⑲ Packing	⑳ Fixing plate	㉑ Installation Manual (this booklet)	㉒ Insulation cover	㉓ Cable tie
CMY-R100VBK	-	1	-	-	1	1	1	1	1	1	1	2
CMY-R200VBK	2	-	1	1	-	-	-	-	-	1	1	2

## (2) List of field-supplied parts

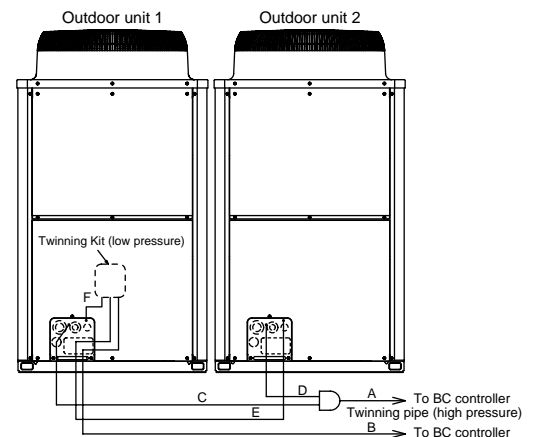
- Refrigerant pipes other than the ones provided in the kit
- Heat-resistant insulation material (for field-supplied refrigerant pipes)
- Insulation cover tape

# 2. Selecting the Correct Size Refrigerant Pipes and Using the Twinning Kit

## (1) Pipe size

- ① Field-supply the pipes to be connected to the kit.
- ② Choose the correct size pipe using the table below. Connect the field-supplied pipe to the twinning kit for the sizes in the table that are marked with an asterisk (\*).
- ③ If the pipe was cut with a pipe cutter, remove the burrs and eliminate foreign materials before connecting.

※ On the low-pressure side, the twinning kit connects to the field-supplied pipes inside the outdoor unit.  
The distributor on the low-pressure side must be placed in the outdoor unit that has a larger capacity index of the two, regardless of the relative positions of the outdoor units or their addresses.  
If the distributor is placed in the outdoor unit that has a smaller capacity, refrigerant will not be properly distributed and compressor failure may result.  
( If outdoor units that have the same capacity are used in combination, the distributor can be placed in either outdoor unit.)



Package unit name		A0
Component unit name	Outdoor unit 1	B0
	Outdoor unit 2	C0
Outdoor Twinning Kit		D0
BC controller ~ Twinning pipe	High-pressure	A E0
	Low-pressure	B F0

	Unit model	High-pressure	Low-pressure
		C or D	E or F
Twinning pipe - Outdoor unit	A1	A2	A3
	B1	B2	B3
	C1	C2	C3
	D1	D2	D3
	E1	E2	E3

( Unit : mm [in] )

	A0	B0	C0	D0	E0	F0
PURY-**Y(S)HM	P450	P250	P200	CMY-R100VBK	Ø22.2 [7/8]	Ø28.58 [1-1/8]
	P500	P250	P250		Ø28.58* [1-1/8]	
	P550	P300	P250			
	P600	P300	P300			
	P650	P350	P300	CMY-R200VBK	Ø28.58 [1-1/8]	Ø34.93* [1-3/8]
	P700	P400	P300			
	P750	P400	P350			
	P800	P400	P400			
	EP400 EP200 EP200	EP450 P250 EP200	EP500 EP300 EP200	CMY-R100VBK	Ø22.2 [7/8]	Ø28.58 [1-1/8]
					EP550 EP300 P250	
EP600 EP300 EP300						
PURY-**Y(S)HMU	P144	P72	P72	CMY-R100VBK	Ø22.2 [7/8]	Ø28.58 [1-1/8]
	P168	P96	P72		Ø28.58* [1-1/8]	
	P192	P96	P96			
	P216	P120	P96			
	P240	P120	P120			
PURY-**T(S)HMU	P144	P72	P72	CMY-R100VBK	Ø22.2 [7/8]	Ø28.58 [1-1/8]
	P168	P96	P72		Ø28.58* [1-1/8]	
	P192	P96	P96			
	P216	P120	P96			
	P240	P120	P120			

( Unit : mm [in] )

	A1	B1	C1	D1	E1
PURY-**YHM	A2	B2	C2	D2	E2
	A3	B3	C3	D3	E3
	P200	P250	P300	P350	P400
PURY-**YHMU	Ø15.88* [5/8]	Ø19.05 [3/4]	Ø19.05 [3/4]	Ø19.05 [3/4]	Ø22.2* [7/8]
	Ø19.05* [3/4]	Ø22.2 [7/8]	Ø22.2* <sup>A</sup> [7/8]	Ø28.58 [1-1/8]	Ø28.58 [1-1/8]
	EP200	EP300	-	-	-
	Ø15.88* [5/8]	Ø19.05 [3/4]	-	-	-
	Ø19.05* [3/4]	Ø22.2 [7/8]	-	-	-
PURY-**YHMU	P72	P96	P120	-	-
	Ø15.88* [5/8]	Ø19.05 [3/4]	Ø19.05 [3/4]	-	-
	Ø19.05* [3/4]	Ø22.2 [7/8]	Ø28.58 [1-1/8]	-	-
PURY-**THMU	P72	P96	P120	-	-
	Ø15.88* [5/8]	Ø19.05 [3/4]	Ø19.05 [3/4]	-	-
	Ø19.05* [3/4]	Ø22.2 [7/8]	Ø28.58 [1-1/8]	-	-

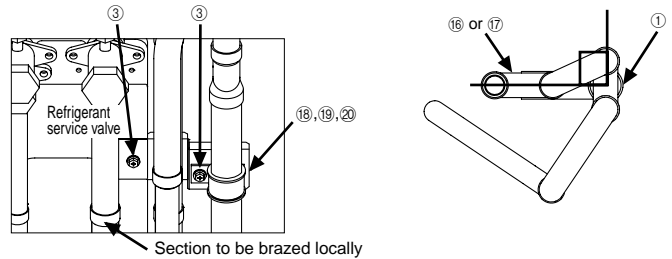
\*A : In case of CMY-R200VBK

See reverse.

(2) Low-pressure twinning kit in CMY-R100VBK

Use either ⑯ or ⑰ in table 1, (1) Package Contents depending on the size of the pipe at the refrigerant service valve on the unit to be combined with. Attach items ⑱, ⑲, and ⑳ to the stop valve sheet metal and then to the low-pressure twinning kit to hold it into place.

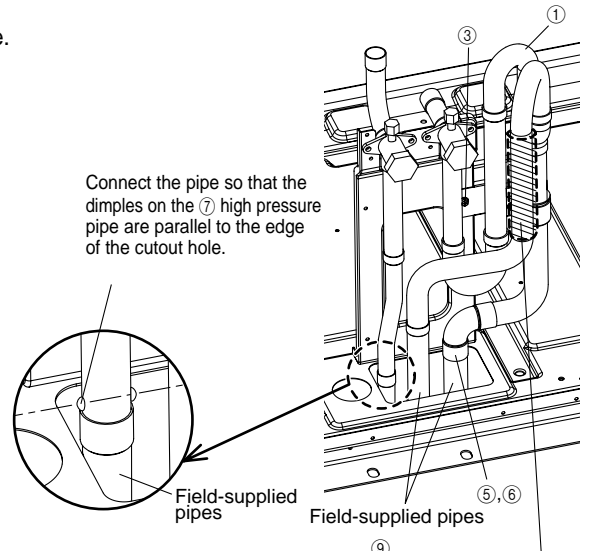
1. Attach item ⑳ to the stop valve sheet metal.
2. Attach the packing and saddle.
3. Secure the low pressure twinning kit.



(3) Routing the pipe through the bottom

- (1) Braze item ⑦ high-pressure pipe to the refrigerant service valve so that the dimples on the pipe are parallel to the edge of the cutout hole. Expand the end of the field-supplied pipes, and braze them to item ⑦ high-pressure pipe.
- (2) Attach item ① low-pressure twinning kit to the sheet metal of the refrigerant service valve with item ③ screw, and braze it to the refrigerant service valve.
- (3) Braze item ⑤ or ⑥ elbow pipe to the field-supplied pipe first, and then braze it to item ① low-pressure twinning kit.
- (4) Flare the field-supplied pipe end, and braze the pipe to the low-pressure pipe in the middle.
- (5) Wrap the pipe in front of item ① low-pressure twinning kit with item ⑨ pipe cover, and attach compressor cables to item ⑨ pipe cover with item ㉓ cable tie to keep them out of direct contact with the pipes.

Connect the pipe so that the dimples on the ⑦ high pressure pipe are parallel to the edge of the cutout hole.



⑨ Wrap the pipe cover here. Attach compressor cables to pipe cover with cable tie to keep them out of direct contact with the pipes.

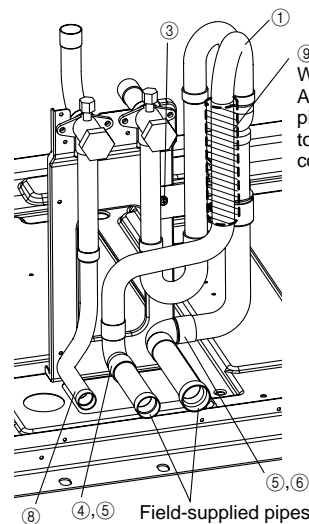
**CAUTION**

- Before heating the pipes, place a wet towel on the refrigerant service valve to keep its temperature below 120 °C [248°F].
- Direct the flame away from the cables and sheet metals inside the unit so as not to burn them.

(4) Routing the pipe through the front

- (1) Braze item ⑧ high-pressure pipe to the refrigerant service valve.
- (2) Attach item ① low-pressure twinning kit to the sheet metal of the refrigerant service valve with item ③ screw, and braze it to the refrigerant service valve.
- (3) Braze item ⑤ or ⑥ elbow pipe to the field-supplied pipe first, and then braze it to item ① low-pressure twinning kit.
- (4) Braze either item ④ or ⑤ elbow pipe to the low-pressure pipe in the middle.
- (5) Wrap the pipe in front of item ① low-pressure twinning kit with item ⑨ pipe cover, and attach compressor cables to item ⑨ pipe cover with item ㉓ cable tie to keep them out of direct contact with the pipes.

⑨ Wrap the pipe cover here. Attach compressor cables to pipe cover with cable tie to keep them out of direct contact with the pipes.



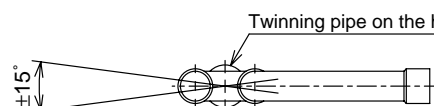
**CAUTION**

- Before heating the pipes, place a wet towel on the refrigerant service valve to keep its temperature below 120 °C [248°F].
- Direct the flame away from the cables and sheet metals inside the unit so as not to burn them.

(5) Slope of twinning pipes (high-pressure side only)

Make sure the slope of the twinning pipes are at an angle within  $\pm 15^\circ$  to the horizontal plane. If the slope exceeds the specified angle, the unit may be damaged.

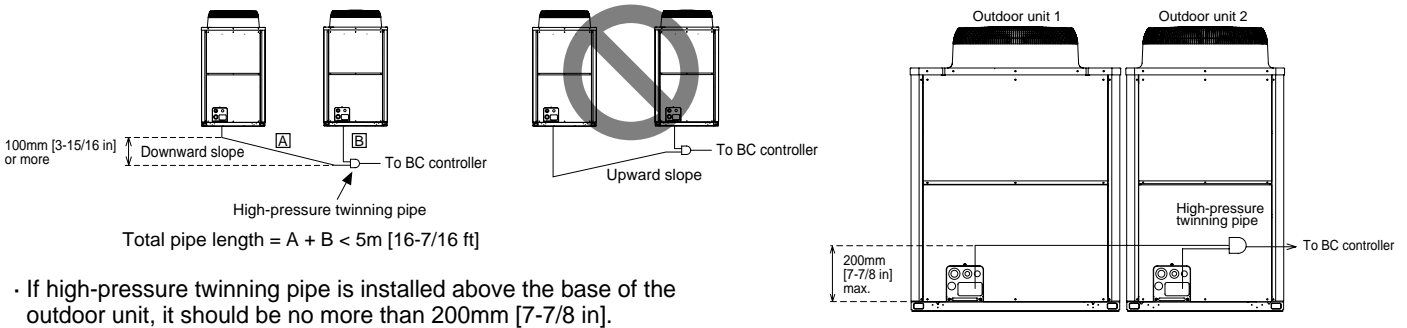
Note. Refer to the figure below for the installation position of the twinning pipe.



Slope of the twinning pipe is at an angle within  $\pm 15^\circ$  to the horizontal plane.

(6) The length of the straight pipe between indoor units and the twinning pipe (high-pressure pipe)  
 Use the pipes supplied in the twinning kit, and make sure the section of the field-supplied pipe that connects to the twinning pipe has at least 500 mm [19-11/16 in] of straight section. (The section of the field-supplied pipe that connects to the twinning pipe must have at least 500 mm [19-11/16 in] of straight section.) If the straight section is less than 500 mm [19-11/16 in], it may result in equipment damage.

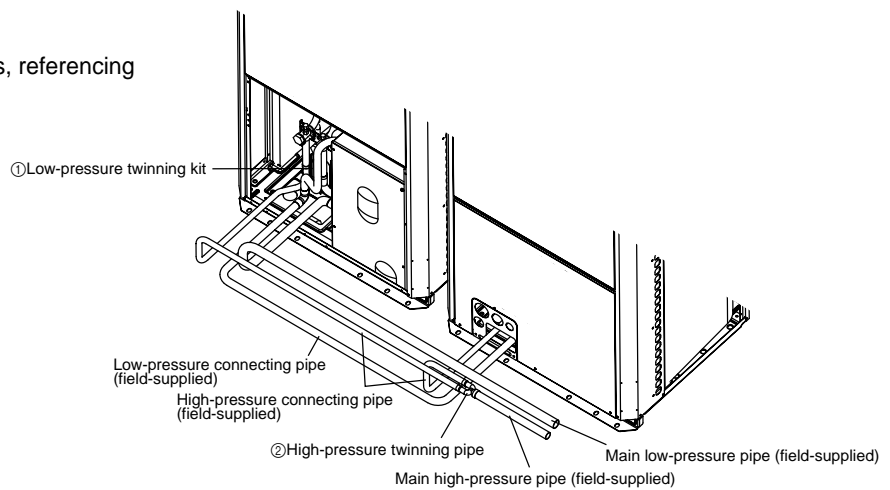
(7) Pipe connection (high-pressure side)  
 · Make sure the pipes from the twinning pipe to the outdoor unit are sloped downwards.



· If high-pressure twinning pipe is installed above the base of the outdoor unit, it should be no more than 200mm [7-7/8 in].

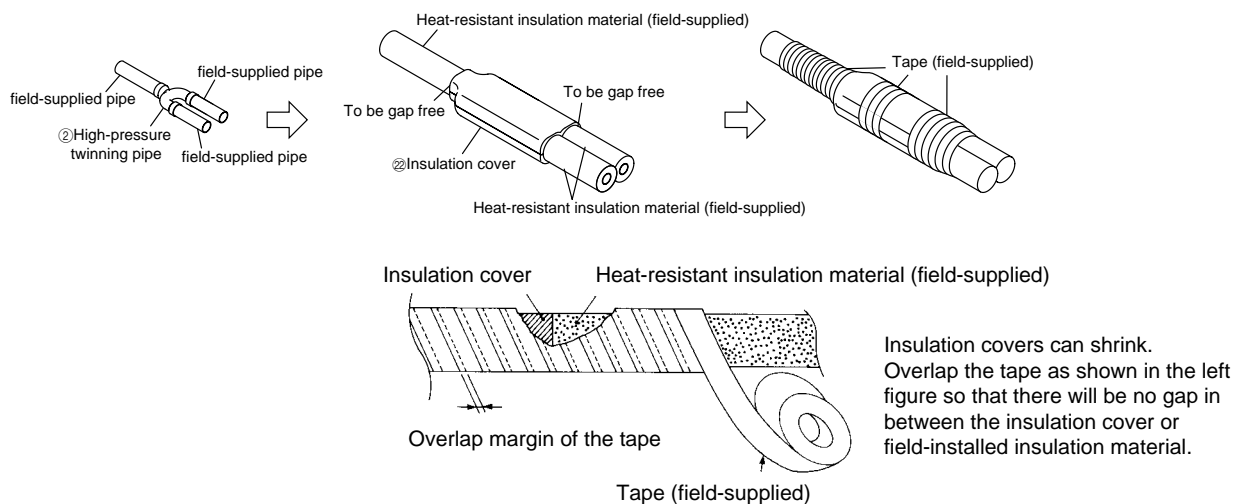
### 3. Pipe Connection Example

Connect the pipes between outdoor units, referencing the figure below.



### 4. Insulation Cover Installation

Install the insulation cover on the twinning kit after brazing the pipes and twinning kit. Insulate all refrigerant pipes. Insulate the high-pressure and low-pressure pipes separately, and pipes located inside the unit as well as the outside. Use heat-resistant insulation material (Heat resistant : at least 120°C [248°F], Thickness: high-pressure = 10 mm [13/32 in], low-pressure = 20 mm [13/16 in]). Position the edges of the insulation cover and heat-resistant insulation material so as not to leave a gap, and then wrap the exterior perimeter of the pipe joints and middle with tape (field-supplied).



### 5. Miscellaneous Notes

Secure the field-supplied pipes with a pipe cover and a cable tie in place to keep them from coming in contact with other pipes as necessary.