

# MITSUBISHI

## 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.

⚠ WARNING and ⚠ CAUTION are used in this manual to indicate possible hazards.

WT05221X01

### Safety Precautions

- Thoroughly read the following “Safety Precautions” prior to installation 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 out 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 type 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 how to install the outdoor unit.

## 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.

\* If the pipes on site do not fit the parts in the kit, use the parts listed below.

### (1) Package contents

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

### (2) List of items to be procured on site

- Pipes other than the ones provided with the kit
- Heat-resistant insulation material (for pipes on site)
- Insulation cover fixing tape

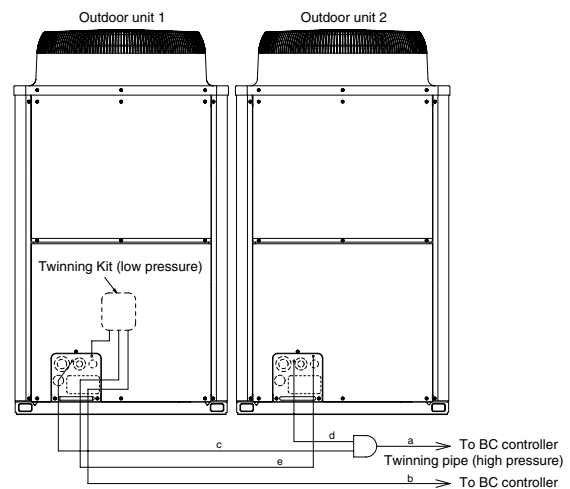
## 2. Selecting the Correct Size Refrigerant Pipes and Using the Twinning Kit

### (1) Pipe size

- ① Please procure the pipes to be connected to the kit locally.
- ② Choose the correct size pipe using the table below. Connect the 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, deburr the pipe and eliminate foreign materials before connecting.

\* On the low-pressure side, the twinning kit connects to the pipes on site inside the outdoor unit.

When different capacity units are combined, connect the kit to the larger capacity unit.



### CMY-R100VBK

Package model		PURY-P450YSHM-A	PURY-P500YSHM-A	PURY-P550YSHM-A	PURY-P600YSHM-A	PURY-P650YSHM-A
Composing units	Outdoor unit 1	PURY-P250YHM-A	PURY-P250YHM-A	PURY-P300YHM-A	PURY-P300YHM-A	PURY-P350YHM-A
	Outdoor unit 2	PURY-P200YHM-A	PURY-P250YHM-A	PURY-P250YHM-A	PURY-P300YHM-A	PURY-P300YHM-A
BC controller - Twinning pipe	High-pressure	a	Ø22.2		Ø28.58 (※)	
	Low-pressure	b	Ø28.58			
Twinning pipe - Outdoor unit 1	High-pressure	c	Ø19.05			
Twinning pipe - Outdoor unit 2	High-pressure	d	Ø15.88 (※)	Ø19.05		
Twinning pipe - Outdoor unit 2	Low-pressure	e	Ø19.05 (※)	Ø22.2		
Package model		PURY-EP400YSHM-A	PURY-EP450YSHM-A	PURY-EP500YSHM-A	PURY-EP550YSHM-A	PURY-EP600YSHM-A
Composing units	Outdoor unit 1	PURY-EP200YHM-A	PURY-P250YHM-A	PURY-EP300YHM-A	PURY-EP300YHM-A	PURY-EP300YHM-A
	Outdoor unit 2	PURY-EP200YHM-A	PURY-EP200YHM-A	PURY-EP200YHM-A	PURY-P250YHM-A	PURY-EP300YHM-A
BC controller - Twinning pipe	High-pressure	a	Ø22.2		Ø28.58 (※)	
	Low-pressure	b	Ø28.58			
Twinning pipe - Outdoor unit 1	High-pressure	c	Ø15.88 (※)	Ø19.05		
Twinning pipe - Outdoor unit 2	High-pressure	d	Ø15.88 (※)		Ø19.05	
Twinning pipe - Outdoor unit 2	Low-pressure	e	Ø19.05 (※)		Ø22.2	

### CMY-R200VBK

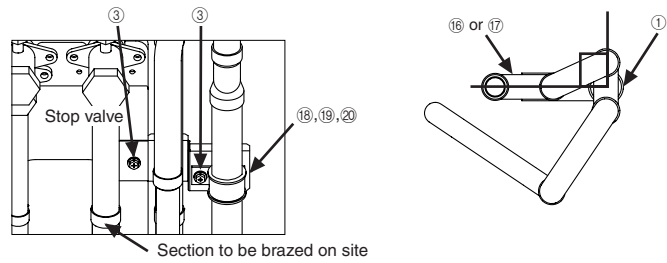
Package model		PURY-P700YSHM-A	PURY-P750YSHM-A	PURY-P800YSHM-A
Composing units	Outdoor unit 1	PURY-P400YHM-A	PURY-P400YHM-A	PURY-P400YHM-A
	Outdoor unit 2	PURY-P300YHM-A	PURY-P350YHM-A	PURY-P400YHM-A
BC controller - Twinning pipe	High-pressure	a	Ø28.58	
	Low-pressure	b	Ø34.93 (※)	
Twinning pipe - Outdoor unit 1	High-pressure	c	Ø22.2 (※)	
Twinning pipe - Outdoor unit 2	High-pressure	d	Ø19.05	Ø22.2 (※)
Twinning pipe - Outdoor unit 2	Low-pressure	e	Ø22.2 (※)	Ø28.58

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 control valve on the unit to be combined with. Attach items ⑯, ⑰, 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. Fix the low pressure twinning kit in place.



(3) Routing the pipe through the bottom

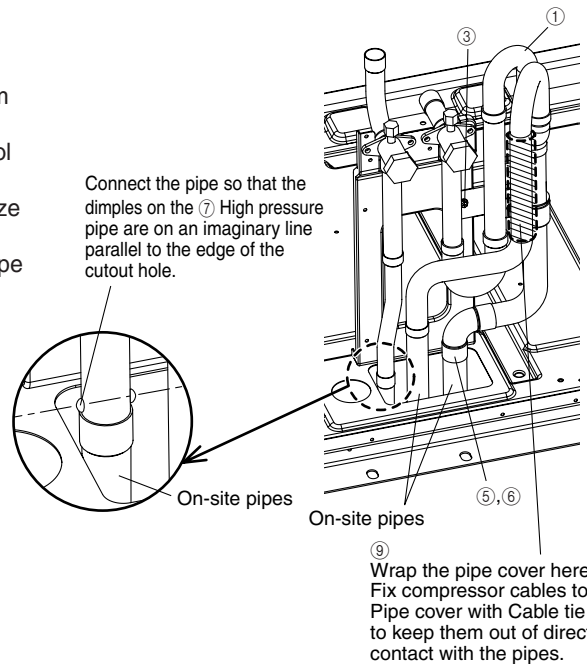
- (1) Braze item ⑦ High-pressure pipe to the Stop valve so that the dimples on the pipe are on an imaginary line parallel to the edge of the cutout hole. Expand the end of the on-site pipes, and braze them to item ⑦ High-pressure pipe.
- (2) Fix item ① Low-pressure twinning kit to the sheet metal of the control valve with item ③ Screw, and braze it to the control valve.
- (3) Braze item ⑤ or ⑥ Elbow pipe to the on-site pipe first, and then braze it to item ① Low-pressure twinning kit.
- (4) Flare the on-site 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 fix compressor cables to item ⑨ Pipe cover with item ㉓ Cable tie to keep them out of direct contact with the pipes.

Note

1. Exercise caution not to burn the cables while brazing the pipes.
2. Before brazing pipes to Stop valve, place a wet towel to keep the temperature of the Stop valve below 120°C.

**CAUTION**

- Before heating the pipes, place a wet towel on the control valve to keep its temperature below 120 °C.
- 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

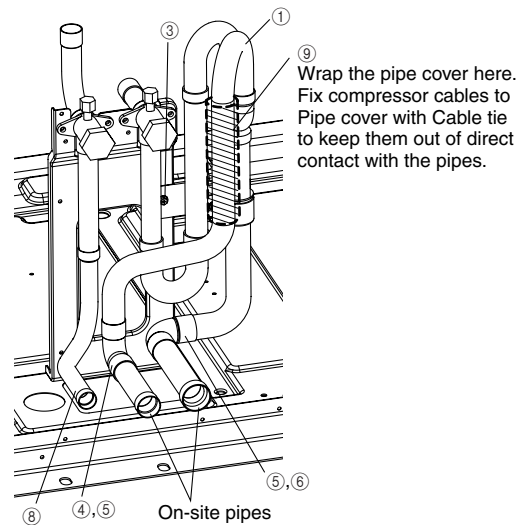
- (1) Braze item ⑧ High-pressure pipe to the control valve.
- (2) Fix item ① Low-pressure twinning kit to the sheet metal of the control valve with item ③ Screw, and braze it to the control valve.
- (3) Braze item ⑤ or ⑥ Elbow pipe to the on-site pipe first, and then braze it to item ① Low-pressure twinning 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 fix compressor cables to item ⑨ Pipe cover with item ㉓ Cable tie to keep them out of direct contact with the pipes.

Note

1. Exercise caution not to burn the cables while brazing the pipes.
2. Before brazing pipes to Stop valve, place a wet towel to keep the temperature of the Stop valve below 120°C.

**CAUTION**

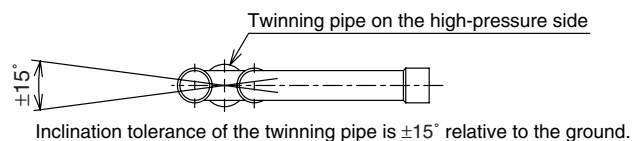
- Before heating the pipes, place a wet towel on the control valve to keep its temperature below 120 °C.
- Direct the flame away from the cables and sheet metals inside the unit so as not to burn them.



(5) Inclination of the twinning pipe (high-pressure side)

Keep the inclination of the twinning pipe relative to the ground within  $\pm 15^\circ$ .  
Inclination of the twinning pipe greater than the specified range may cause equipment damage.

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

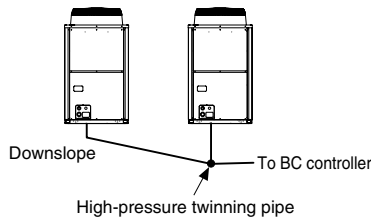


(6) Length of the straight section of the pipe before the twinning pipe (High-pressure pipe)

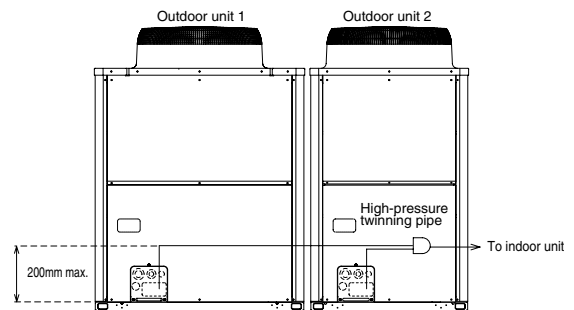
Use the pipes supplied in the twinning kit, and make sure the section of the on-site pipe that connects to the twinning pipe has at least 500 mm of straight section. (The section of the on-site pipe that connects to the twinning pipe must have at least 500 mm of straight section.) If the straight section is less than 500 mm, equipment damage may result.

(7) Pipe connection (high-pressure side)

Install the pipe between outdoor unit and high-pressure twinning pipe so that the pipe slopes down toward the twinning pipe.

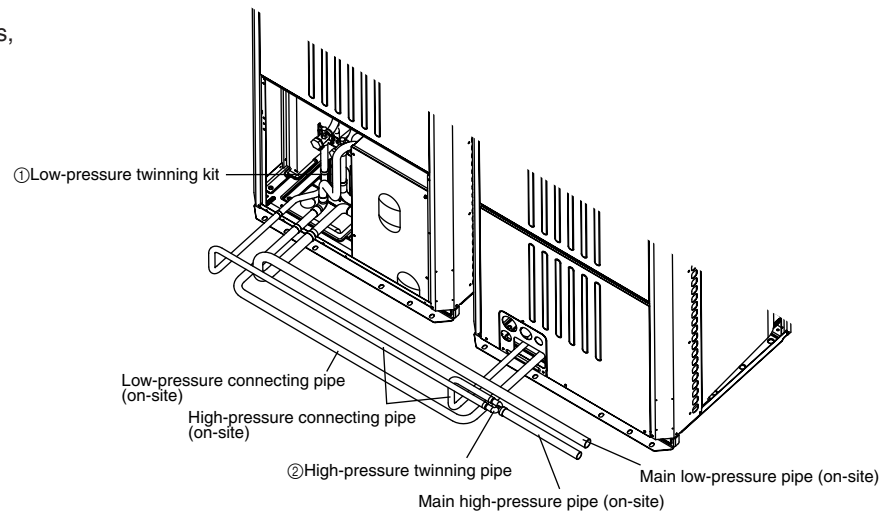


· When high-pressure twinning pipe is installed above the base of the outdoor unit, it should be installed no more than 200mm from the base.



### 3. Pipe Connection Example

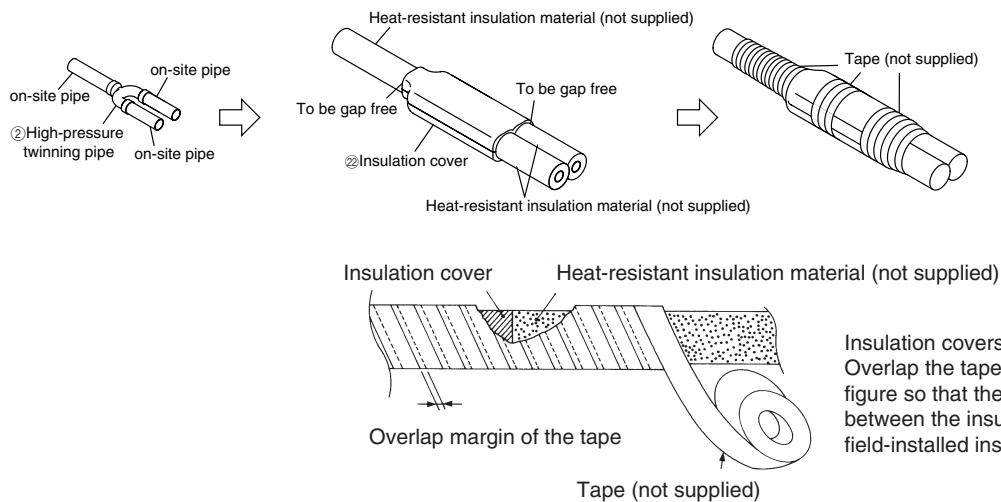
Connect the pipes between outdoor units, using the figure below as a reference.



### 4. Insulation Cover Installation

Install the insulation cover on the twinning kit after brazing pipes and twinning kit.

Insulate all refrigerant pipes including the pipes on site. Insulate the high-pressure and low-pressure pipes separately and inside the unit as well as the outside. Use heat-resistant insulation material (Heat resistant : at least 120°C, Thickness: high-pressure = 10 mm, low-pressure = 20 mm). Bring the edges of the insulation cover and heat-resistant insulation material together so as not to leave any space in between, and then wrap the exterior perimeter of the pipe joints and in the middle with tape (not supplied).



### 5. Miscellaneous Notes

Fix the on-site pipes with pipe cover and cable tie in place to keep them from coming in contact with other pipes as necessary.