For use with R410A-compatible units

MITSUBISHI ELECTRIC

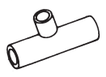
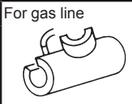
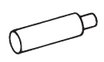
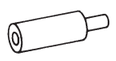
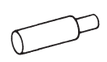
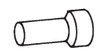
CITY MULTI OPTIONAL PARTS

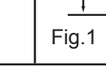
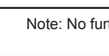
2-BRANCH JOINT PIPE
(CMY-Y102SS-G2, CMY-Y102LS-G2, CMY-Y202S-G2, CMY-Y302S-G2)

INSTALLATION MANUAL

Caution
The incorrect selection of the type of branch pipe and the size of connecting pipe does not allow the air conditioner to provide the rated capacity.
Please read this instruction manual carefully for correct mounting work.

1 The following parts are contained in this box. Please identify the quantity with types.

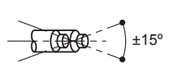
Part name	1. Instruction	2. 2-branch joint (small)	3. 2-branch joint (large)	4. Cover 1	5. Cover 2	6. Pipe 1	7. Pipe 2	8. Pipe 3	9. Pipe 4	10. Pipe 5	11. Pipe 6	12. Pipe 7	13. Pipe 8
Shape		For liquid line	For gas line 	For liquid line	For gas line 								
	This sheet 1 sheet					OD9.52[3/8]-ID6.35[1/4]	OD15.88[5/8]-ID12.7[1/2]	OD19.05[3/4]-ID12.7[1/2]	OD19.05[3/4]-ID15.88[5/8]	OD12.7[1/2]-ID9.52[3/8]	OD19.05[3/4]-ID22.2[7/8]	OD25.4[1]-ID22.2[7/8]	OD25.4[1]-ID12.7[1/2]
CMY-Y102SS-G2	1	1	1	1	1	2	1	1	2	-	-	-	-
CMY-Y102LS-G2	1	1	1	1	1	1	-	1	1	2	1	2	-
CMY-Y202S-G2	1	1	1	1	1	-	1	1	1	1	1	1	-
CMY-Y302S-G2	1	1	1	1	1	-	1	1	1	-	-	1	1

Part name	14. Pipe 9	15. Pipe 10	16. Pipe 11	17. Pipe 12	18. Pipe 13	19. Pipe 14	20. Pipe 17	21. Pipe 19	22. Pipe 20	23. Pipe 21
Shape										
	OD12.7[1/2]-ID6.35[1/4]	OD25.4[1]-ID28.58[1-1/8]	OD19.05[3/4]-ID25.4[1]	OD15.88[5/8]-ID9.52[3/8]	OD15.88[5/8]-ID6.35[1/4]	OD31.75[1-1/4]-ID28.58[1-1/8]	OD25.4[1]-ID19.05[3/4]	OD25.4[1]-ID15.88[5/8]	OD31.75[1-1/4]-ID34.93[1-3/8]	OD31.75[1-1/4]-ID41.28[1-5/8]
CMY-Y102SS-G2	-	-	-	-	-	-	-	-	-	-
CMY-Y102LS-G2	-	2	-	-	-	-	2	1	-	-
CMY-Y202S-G2	1	3	1	1	-	-	-	-	-	-
CMY-Y302S-G2	-	1	-	1	1	1	1	1	2	2

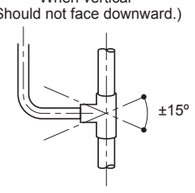
2 Please observe the items below for the mounting work.

1. Observe the restrictions on refrigerant piping length in Table-1.
2. Braze the pipes under nitrogen purge.
3. The 2-branch joint is equipped with a stopper. Push in the pipes into the branch joint until they stop.
4. Be careful that foreign materials like dust do not enter into the piping when connecting pipes.
5. Apply insulation material to all refrigerant pipings.
6. When attaching the branch joint to the gas side of the CMY-Y202S-G2, CMY-Y302S-G2 make sure that it is either horizontal or vertical as shown in the illustrations below.
   There are no restrictions on the installation of other joints.

When horizontal



When vertical
(Should not face downward.)



Limitation on Refrigerant Piping Length

Table-1

Items		Pipe Section
Length	Total pipe length	A + B + C + D + a + b + c + d + e + f + g
	Farthest pipe length (L)	A + C + D + g or A + B + d
	Farthest pipe length after the first branch (ℓ)	C + D + g or B + d
Height difference	Between ourdoor and indoor units	Outdoor unit above (H)
		Outdoor unit below (H')
	Height difference between indoor units (h)	-

* Refer to the Databook about allowable length.

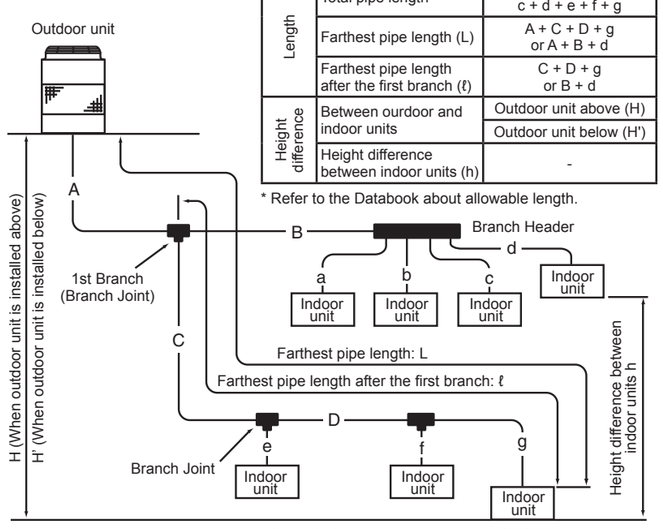


Fig.1

Note: No further branching allowed after the header branch

Limitation on indoor unit connection

- Select the correct indoor unit connection referring to the installation manual of outdoor unit or the Databook.

3 Selection of refrigerant piping size and use of 2-branch joint.

1. Prepare the pipe to be connected in the field.
2. Determine the piping sizes of each part from Table-2 and 3.
3. The 2-branch joint can be connected to all piping sizes selected in the item 2. to match a specified piping size.
   (1) Use the joint as standard. (No auxiliary pipe is necessary. Direct connection available)
   (2) Use it by connecting the auxiliary pipe.
   Please conduct actual work by referring Fig.2, and Table-4~9.
4. When pipe is cut with a pipe cutter or the like, remove burr, dust and foreign materials inside the pipe, and connect the pipe.

Table-9 (Unit:mm[in])

Pipe types \ Dimension		A	B	C
CMY-Y102SS-G2	Liquid pipe	ø9.52[3/8]	ø9.52[3/8]	ø9.52[3/8]
	Gas pipe	ø19.05[3/4]	ø19.05[3/4]	ø15.88[5/8]
CMY-Y102LS-G2	Liquid pipe	ø12.7[1/2]	ø12.7[1/2]	ø9.52[3/8]
	Gas pipe	ø25.4[1]	ø25.4[1]	ø19.05[3/4]
CMY-Y202S-G2	Liquid pipe	ø15.88[5/8]	ø15.88[5/8]	ø12.7[1/2]
	Gas pipe	ø25.4[1]	ø25.4[1]	ø19.05[3/4]
CMY-Y302S-G2	Liquid pipe	ø19.05[3/4]	ø19.05[3/4]	ø15.88[5/8]
	Gas pipe	ø31.75[1-1/4]	ø31.75[1-1/4]	ø25.4[1]

Table-2 Piping size between branching (Fig1-B,C,D) (Unit:mm[in])

Total capacity of indoor units		Liquid pipe	Gas pipe
Non-US model	US model		
~140	~54	ø9.52[3/8]	ø15.88[5/8]
141~200	55~72	ø9.52[3/8]	ø19.05[3/4]
201~300	73~108	ø9.52[3/8]	ø22.2[7/8]
301~400	109~144	ø12.7[1/2]	ø28.58[1-1/8]
401~650	145~240	ø15.88[5/8]	ø28.58[1-1/8]
651~800	241~308	ø19.05[3/4]	ø34.93[1-3/8]
801~	309~	ø19.05[3/4]	ø41.28[1-5/8]

Table-3 Piping size branching (Fig.1-a~g) (Unit:mm[in])

Indoor unit model		Liquid pipe	Gas pipe
Non-US model	US model		
20,25,32,40,50	06,08,12,15,18	ø6.35[1/4]	ø12.7[1/2]
63,71,80,100,125,140	24,27,30,36,48,54	ø9.52[3/8]	ø15.88[5/8]
200	72	ø9.52[3/8]	ø19.05[3/4]
250	96	ø9.52[3/8]	ø22.2[7/8]

Table-4 Between branching (Fig.1-C) (Unit:mm[in])

Pipe types \ Down stream capacity			Non-US model	~140	141~200	201~300	301~400	401~650	651~800	801~
			US model	~54	55~72	73~108	109~144	145~240	241~308	309~
				ø9.52[3/8]/ ø15.88[5/8]	ø9.52[3/8]/ ø19.05[3/4]	ø9.52[3/8]/ ø22.2[7/8]	ø12.7[1/2]/ ø28.58[1-1/8]	ø15.88[5/8]/ ø28.58[1-1/8]	ø19.05[3/4]/ ø34.93[1-3/8]	ø19.05[3/4]/ ø41.28[1-5/8]
CMY-Y102SS-G2	Liquid pipe	ø9.52[3/8]		No need pipe	No need pipe	-	-	-	-	-
	Gas pipe	ø19.05[3/4]		pipe4	No need pipe	-	-	-	-	-
CMY-Y102LS-G2	Liquid pipe	ø12.7[1/2]		-	-	pipe5	No need pipe	-	-	-
	Gas pipe	ø25.4[1]		-	-	pipe7	pipe10	-	-	-
CMY-Y202S-G2	Liquid pipe	ø15.88[5/8]		-	-	-	-	No need pipe	-	-
	Gas pipe	ø25.4[1]		-	-	-	-	pipe10	-	-
CMY-Y302S-G2	Liquid pipe	ø19.05[3/4]		-	-	-	-	-	No need pipe	No need pipe
	Gas pipe	ø31.75[1-1/4]		-	-	-	-	-	pipe20	pipe21

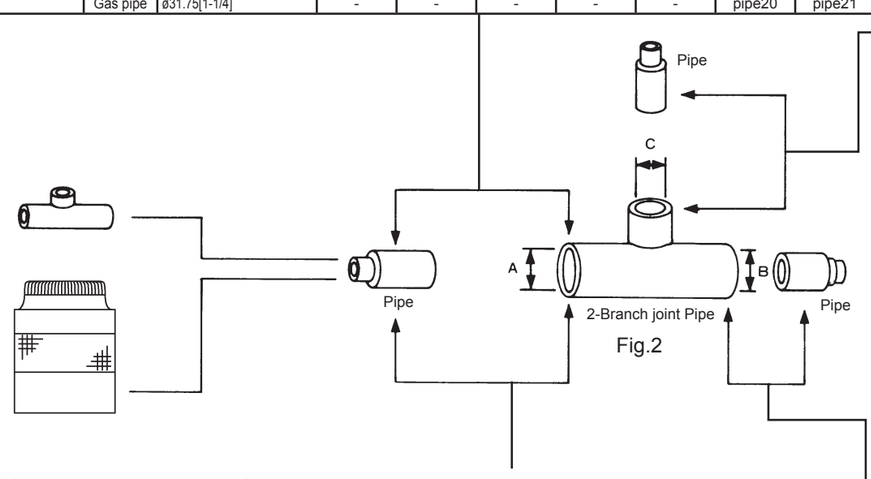


Fig.2

- Select the correct size pipe referring to the installation manual of outdoor unit or the Databook.

Table-5 Between branching (Fig.1-C) (Unit:mm[in])

Pipe types \ Down stream capacity			Non-US model	~140	141~200	201~300	301~400	401~650	651~800	801~
			US model	~54	55~72	73~108	109~144	145~240	241~308	309~
				ø9.52[3/8]/ ø15.88[5/8]	ø9.52[3/8]/ ø19.05[3/4]	ø9.52[3/8]/ ø22.2[7/8]	ø12.7[1/2]/ ø28.58[1-1/8]	ø15.88[5/8]/ ø28.58[1-1/8]	ø19.05[3/4]/ ø34.93[1-3/8]	ø19.05[3/4]/ ø41.28[1-5/8]
CMY-Y102SS-G2	Liquid pipe	ø9.52[3/8]		No need pipe	-	-	-	-	-	-
	Gas pipe	ø15.88[5/8]		No need pipe	-	-	-	-	-	-
CMY-Y102LS-G2	Liquid pipe	ø9.52[3/8]		No need pipe	No need pipe	No need pipe	-	-	-	-
	Gas pipe	ø19.05[3/4]		pipe4	No need pipe	pipe6	-	-	-	-
CMY-Y202S-G2	Liquid pipe	ø12.7[1/2]		pipe5	pipe5	pipe5	No need pipe	-	-	-
	Gas pipe	ø19.05[3/4]		pipe4	No need pipe	pipe6	pipe10,11	-	-	-
CMY-Y302S-G2	Liquid pipe	ø15.88[5/8]		pipe12	pipe12	pipe12	pipe2	No need pipe	-	-
	Gas pipe	ø25.4[1]		pipe19	pipe17	pipe7	pipe10	pipe10	-	-

Table-6 Between branching and indoor unit (Fig.1-e,f) (Unit:mm[in])

Pipe types \ Indoor unit			Non-US model	20~50	63~140	200	250
			US model	06~18	24~54	72	96
				ø6.35[1/4]/ ø12.7[1/2]	ø9.52[3/8]/ ø15.88[5/8]	ø9.52[3/8]/ ø19.05[3/4]	ø9.52[3/8]/ ø22.2[7/8]
CMY-Y102SS-G2	Liquid pipe	ø9.52[3/8]		pipe1	No need pipe	-	-
	Gas pipe	ø15.88[5/8]		pipe2	No need pipe	-	-
CMY-Y102LS-G2	Liquid pipe	ø9.52[3/8]		pipe1	No need pipe	No need pipe	No need pipe
	Gas pipe	ø19.05[3/4]		pipe3	pipe4	No need pipe	pipe6
CMY-Y202S-G2	Liquid pipe	ø12.7[1/2]		pipe9	pipe5	pipe5	pipe5
	Gas pipe	ø19.05[3/4]		pipe3	pipe4	No need pipe	pipe6
CMY-Y302S-G2	Liquid pipe	ø15.88[5/8]		pipe13	pipe12	pipe12	pipe12
	Gas pipe	ø25.4[1]		pipe8	pipe19	pipe17	pipe7

Table-7 Between branching (Fig.1-D) (Unit:mm[in])

Pipe types \ Down stream capacity			Non-US model	~140	141~200	201~300	301~400	401~650	651~800	801~
			US model	~54	55~72	73~108	109~144	145~240	241~308	309~
				ø9.52[3/8]/ ø15.88[5/8]	ø9.52[3/8]/ ø19.05[3/4]	ø9.52[3/8]/ ø22.2[7/8]	ø12.7[1/2]/ ø28.58[1-1/8]	ø15.88[5/8]/ ø28.58[1-1/8]	ø19.05[3/4]/ ø34.93[1-3/8]	ø19.05[3/4]/ ø41.28[1-5/8]
CMY-Y102SS-G2	Liquid pipe	ø9.52[3/8]		No need pipe	No need pipe	-	-	-	-	-
	Gas pipe	ø19.05[3/4]		pipe4	No need pipe	-	-	-	-	-
CMY-Y102LS-G2	Liquid pipe	ø12.7[1/2]		pipe5	pipe5	pipe5	No need pipe	-	-	-
	Gas pipe	ø25.4[1]		pipe19	pipe17	pipe7	pipe10	-	-	-
CMY-Y202S-G2	Liquid pipe	ø15.88[5/8]		-	-	pipe12	pipe2	No need pipe	-	-
	Gas pipe	ø25.4[1]		-	-	pipe7	pipe10	pipe10	-	-
CMY-Y302S-G2	Liquid pipe	ø19.05[3/4]		-	-	-	pipe3	pipe4	No need pipe	No need pipe
	Gas pipe	ø31.75[1-1/4]		-	-	-	pipe14	pipe14	pipe20	pipe21

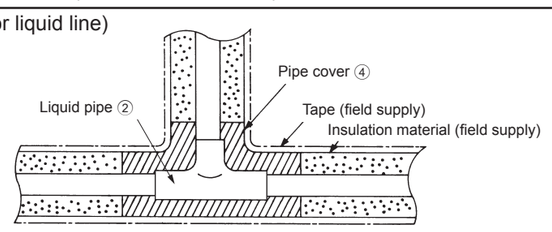
Table-8 Between branching and indoor unit (Fig.1-g) (Unit:mm[in])

Pipe types \ Indoor unit			Non-US model	20~50	63~140	200	250
			US model	06~18	24~54	72	96
				ø6.35[1/4]/ ø12.7[1/2]	ø9.52[3/8]/ ø15.88[5/8]	ø9.52[3/8]/ ø19.05[3/4]	ø9.52[3/8]/ ø22.2[7/8]
CMY-Y102SS-G2	Liquid pipe	ø9.52[3/8]		pipe1	No need pipe	No need pipe	-
	Gas pipe	ø19.05[3/4]		pipe3	pipe4	No need pipe	-
CMY-Y102LS-G2	Liquid pipe	ø12.7[1/2]		-	pipe5	pipe5	pipe5
	Gas pipe	ø25.4[1]		-	pipe19	pipe17	pipe7
CMY-Y202S-G2	Liquid pipe	ø15.88[5/8]		-	-	-	pipe12
	Gas pipe	ø25.4[1]		-	-	-	pipe7
CMY-Y302S-G2	Liquid pipe	ø19.05[3/4]		-	-	-	-
	Gas pipe	ø31.75[1-1/4]		-	-	-	-

Note1: The diameter of the pipes after the first branch does not need to be greater than that of the main pipe.

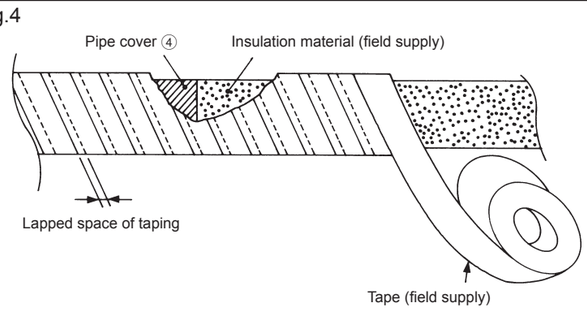
4 Installing the cover (insulation material)

Fig.3 (Example for liquid line)



- Install the pipe cover ④ along the liquid pipe ②.
  Seal the joint section of pipe cover ④ with insulated sealing tape (field supply). (Refer to Fig.3.)
- Apply the same procedures to the gas pipe ③ also.

Fig.4



Note 1. Apply insulation to all refrigerant piping (field supply).
When using a commercially available insulation material, make sure to use the heat-resistant insulation material (heat resistant 120 °C [248 °F] minimum).
Note 2. The insulation cover shrinks slightly, so wrap the pipe cover ④ and the field-installed insulation material securely with tape by overlapping the tape as shown in Fig. 4.