

For use with R410A-compatible units



CITY MULTI OPTIONAL PARTS



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.

JOINT PIPE

(CMY-R301S-G, CMY-R302S-G1, CMY-R303S-G1, CMY-R304S-G1, CMY-R305S-G1, CMY-R306S-G)

INSTALLATION MANUAL

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

Part name	1. INSTRUCTION	2. PIPE 1	3. PIPE 2	4. PIPE 3	5. PIPE 4	6. PIPE 5	7. PIPE 6	8. PIPE 7	9. PIPE 8	10. PIPE 9	11. PIPE 10
Shape											
	This sheet 1 sheet	OD19.05-ID15.88	OD28.6-ID22.2	OD22.2-ID19.05	OD34.93-ID28.58	OD19.05-ID12.7	OD12.7-ID9.52	OD16-ID12.7	OD15.88-ID9.52	OD38.1-ID41.28	OD38.1-ID34.93
CMY-R301S-G	1	1	1	1	-	-	-	-	-	-	-
CMY-R302S-G1	1	1	2	2	2	-	-	-	-	1	1
CMY-R303S-G1	1	2	2	2	1	1	1	-	-	-	1
CMY-R304S-G1	1	1	2	2	2	-	-	-	-	1	1
CMY-R305S-G1	1	2	2	2	2	1	1	-	-	-	1
CMY-R306S-G	1	1	1	1	-	-	-	1	1	-	-

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 joint pipe is equipped with a stopper. Push in the pipes into the 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.

Limitation on Refrigerant Piping Length

(In the case of PURY)

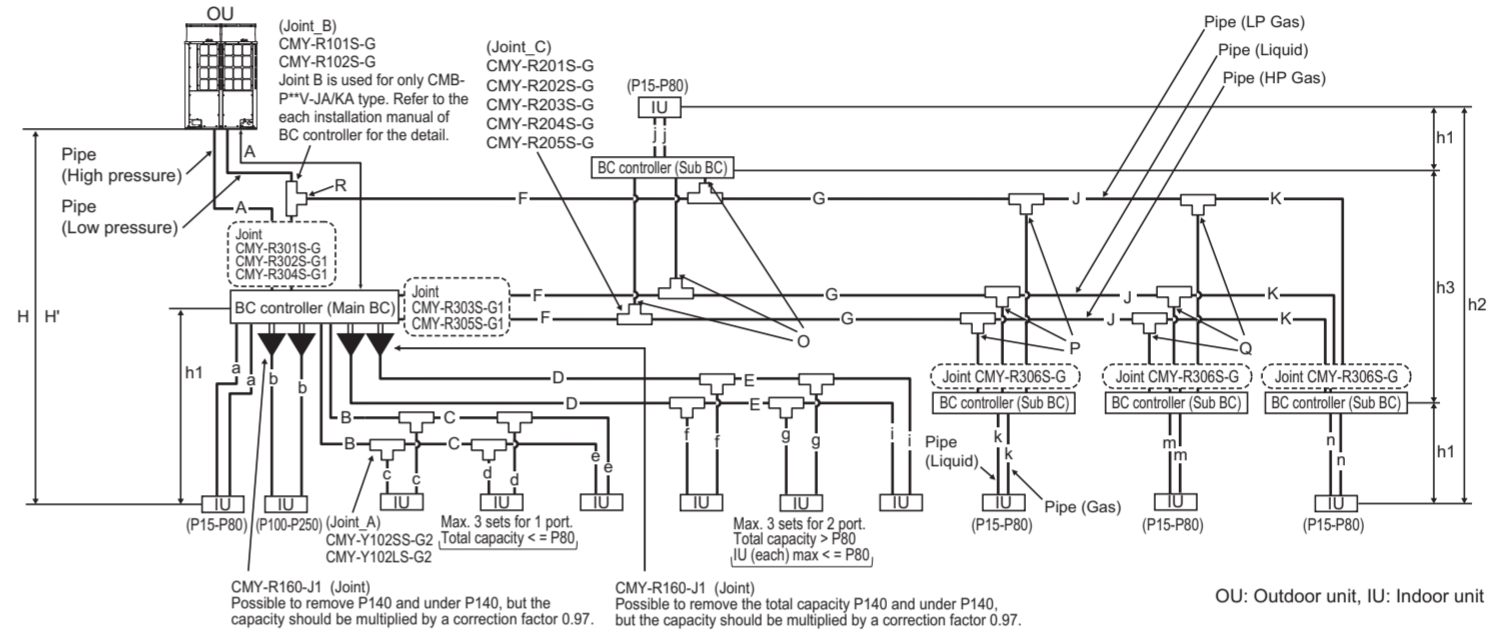


Fig.1 Piping scheme

Table-1

Item	Piping in the figure	Max. length	Max. equivalent length (m [ft.])
Total piping length (Total length of high pressure and liquid pipes)	A+B+C+D+E+F+G+H+I+J+K+L+M+N+O+P+Q+R+S+T+U+V+W+X+Y+Z	Refer to the DATA BOOK of outdoor unit.	-
Farthest IU from OU	A+H+G+J+K+N	165 [541']	190 [623']
Distance between OU and BC	A	110 [360']	110 [360']
Farthest IU from BC controller	D+E+I	60 [197']	60 [197']
Farthest IU from BC controller via Sub BC controller	F+G+J+K+N	90 [295']	90 [295']
Height between OU and IU (OU above IU)	H	50 [164']	-
Height between OU and IU (OU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32'])	-
Height between IU and IU	h2	30 [98'] (20 [65'])	-
Height between BC (Main or Sub) and BC (Sub)	h3	15 [49'] (10 [32'])	-

Refer to the installation manual of the BC controller for details about the maximum piping length.

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

1. Determine the piping sizes of each part from Table-2 and 3.
2. Prepare the pipe to be connected in the field.
3. Connect the piping so that the piping size selected in step 1 will fit. Conduct actual work by referring to Fig.2, 3 and Table-4~7.
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-2. Piping size between outdoor unit and BC controller (Fig.1-A)

Outdoor unit model (Non-US model)	High pressure pipe	Low pressure pipe	Outdoor unit model (US model)	High pressure pipe	Low pressure pipe
Model 200	ø15.88	ø19.05	Model 72	ø15.88	ø19.05
Model 250	ø19.05	ø22.2	Model 96	ø19.05	ø22.2
Model 300	ø19.05	ø22.2	Model 120	ø19.05	ø28.58
Model 350	ø19.05	ø28.58	Model 144	ø22.2	ø28.58
Model 400	ø22.2	ø28.58	Model 168	ø22.2	ø28.58
Model 450	ø22.2	ø28.58	Model 192	ø22.2	ø28.58
Model 500	ø22.2	ø28.58	Model 216	ø22.2 *1	ø28.58
Model 550	ø22.2 *1	ø28.58	Model 240	ø22.2 *1	ø34.93
Model 600	ø22.2 *1	ø28.58	Model 264	ø28.58	ø34.93
Model 650	ø28.58	ø28.58	Model 288	ø28.58	ø34.93
Model 700	ø28.58	ø34.93	Model 312	ø28.58	ø41.28
Model 750	ø28.58	ø34.93	Model 336	ø28.58	ø41.28
Model 800	ø28.58	ø34.93			
Model 850	ø28.58	ø41.28			
Model 900	ø28.58	ø41.28			
Model 950	ø28.58	ø41.28			
Model 1000	ø28.58	ø41.28			
Model 1050	ø34.93	ø41.28			
Model 1100	ø34.93	ø41.28			

* As the values for some models differ from those in the above table, refer to the Installation Manual for the outdoor unit.

*1 When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe. When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.

Table-3. Piping size between BC controller (Main or Sub) and BC controller (Sub) (Fig.1-F, G, J, K)

Total capacity of indoor units (Non-US model)	US model	High pressure pipe	Low pressure pipe	Liquid pipe
~200	~72	ø15.88	ø19.05	ø9.52
201~300	73~96	ø19.05	ø22.2	ø9.52
301~350	97~126	ø19.05	ø28.58	ø12.7
351~400	121~144	ø22.2	ø28.58	ø12.7
401~600	145~216	ø22.2	ø28.58	ø15.88
601~650	217~234	ø28.58	ø28.58	ø15.88
651~800	235~288	ø28.58	ø34.93	ø19.05
801~1000	289~360	ø28.58	ø41.28	ø19.05
1001~	361~	ø34.93	ø41.28	ø19.05

Table-4. Between outdoor unit and BC controller (Fig.2-A)

Pipe types	Outdoor unit (Non-US model)	Model 200	Model 250, 300	Model 350	Model 400~600	Model 650	-	Model 700~800	Model 850~900	Model 950~1000	Model 1000 over
CMY-R301S-G	High pressure pipe	Pipe 1	No need pipe	No need pipe	-	-	Model 240	Model 264~288	Model 312~336	-	-
	Low pressure pipe	Pipe 2, 3	Pipe 2	No need pipe	-	-	-	-	-	-	-
CMY-R302S-G1	High pressure pipe	Pipe 1, 2, 3, 4	Pipe 2, 3, 4	Pipe 2, 3, 4	Pipe 2, 4 or Pipe 4	Pipe 4	Pipe 2, 4 or Pipe 4	Pipe 4	Pipe 4	Pipe 4	-
	Low pressure pipe	Pipe 2, 3, 4, 10	Pipe 2, 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 10	Pipe 9	Pipe 9	-
CMY-R304S-G1	High pressure pipe	Pipe 1, 2, 3, 4	Pipe 2, 3, 4	Pipe 2, 3, 4	Pipe 2, 4 or Pipe 4	Pipe 4	Pipe 2, 4 or 4	Pipe 4	Pipe 4	Pipe 4	No need pipe
	Low pressure pipe	Pipe 2, 3, 4, 10	Pipe 2, 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 10	Pipe 10	Pipe 9	Pipe 9	Pipe 9

Table-5. Between Main BC controller and Sub BC controller (Fig.2-B)

Pipe types	Downstream capacity (Non-US model)	~200	201~300	301~350	351~400	401~600	601~650	651~800	801~1000	1001~
	US model	~72	73~96	97~126	121~144	145~216	217~234	235~288	289~360	361~
CMY-R303S-G1	High pressure pipe	Pipe 1, 2, 3	Pipe 2, 3	Pipe 2, 3	Pipe 2, 3	Pipe 2	No need pipe	No need pipe	No need pipe	-
	Low pressure pipe	Pipe 2, 3, 4, 10	Pipe 2, 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 10	Pipe 9	-
	Liquid pipe	Pipe 5, 6	Pipe 5, 6	Pipe 5	Pipe 5	Pipe 1	Pipe 1	No need pipe	No need pipe	-
CMY-R305S-G1	High pressure pipe	Pipe 1, 2, 3, 4	Pipe 2, 3, 4	Pipe 2, 3, 4	Pipe 2, 4	Pipe 2, 4	Pipe 4	Pipe 4	Pipe 4	No need pipe
	Low pressure pipe	Pipe 2, 3, 4, 10	Pipe 2, 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 4, 10	Pipe 10	Pipe 9	Pipe 9
	Liquid pipe	Pipe 5, 6	Pipe 5, 6	Pipe 5	Pipe 5	Pipe 1	Pipe 1	No need pipe	No need pipe	No need pipe

Table-6. Between Main BC controller and Sub BC controller (Fig.3-A)

Pipe types	Downstream capacity (Non-US model)	~200	201~300	301~350	351~400	401~600	601~650	651~800	801~1000	1001~
	US model	~72	73~96	97~126	121~144	145~216	217~234	235~288	289~360	361~
CMY-R306S-G	High pressure pipe	Pipe 1	No need pipe	No need pipe	-	-	-	-	-	-
	Low pressure pipe	Pipe 2, 3	Pipe 2	No need pipe	-	-	-	-	-	-
	Liquid pipe	Pipe 8	Pipe 8	Pipe 7	-	-	-	-	-	-

Table-7. Pipe diameter at the connection part of BC controller

Connection	Model name	Non-US model	CMB-P**V-J	CMB-P**V-JA	CMB-P**V-KA	CMB-P**V-KB
Fig.2, 3-A	High pressure pipe	US model	CMB-P**V-J1	CMB-P**V-JA1	CMB-P**V-KA1	CMB-P**V-KB1
	Low pressure pipe	ø19.05	ø34.93	ø34.93	ø28.58	ø19.05
	Liquid pipe	ø28.58	ø38.1 (ø41.28)*	ø38.1 (ø41.28)*	ø28.58	ø15.88
Fig.2-B	High pressure pipe	-	ø28.58	ø34.93	-	-
	Low pressure pipe	-	ø38.1 (*)	ø38.1 (*)	-	-
	Liquid pipe	-	ø19.05	ø19.05	-	-

* CMB-P**V-JAVKA only

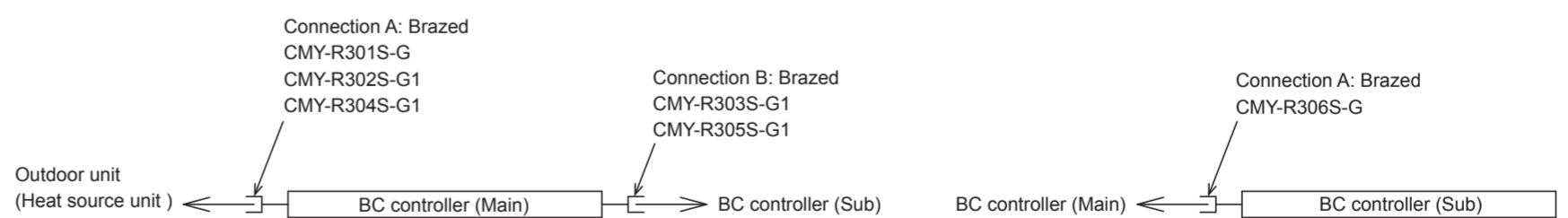


Fig.2 Pipe installation position (Main BC)

Fig.3 Pipe installation position (Sub BC)