

Tubing Size - Sanyo R410A Installation Instructions Manual

W-3way eco-i system air conditioner

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1-6. Tubing Size

Table 1-3 Main Tubing Size (LA)

BTU/h (kW)							
Total system horsepower							
Combined outdoor units							
Suction tubing							
Discharge tubing							
Liquid tubing							
*1: If future extension is planned, select the tubing diameter based on the total horsepower after extension.							
However extension is not possible if the resulting tubing size is two ranks higher.							
*2: The balance tube (outdoor unit tube) diameter is $\phi 3/8"$ ($\phi 9.52$).							
*3: Type 1 tubing should be used for the refrigerant tubes.							
*4: If the length of the longest tube (L1) exceeds 295 ft. (equivalent length), increase the main tube (LM) size by 1							

rank for the suction, discharge, and liquid tubes. (Use field-supply reducers.) (Select from Table 1-3 and Table 1-9.) *5: If the longest main tube length (LM) exceeds 164 ft., increase the main tube size at the portion before 164 ft. by 1 rank for

the suction tubes and discharge tubes. (For the portion that exceeds 164 ft., set based on the main tube sizes (LA) listed in the table above.)

Size of tubing (LO) between outdoor units

Select the size of tubing between outdoor units based on the main tubing size (LA) as given in the table above.

Table 1-4 Main Tubing Size After Distribution (LB, LC...)

Below BTU/h						
Total capacity after distribution	/		/			
Over BTU/h	/	/	/	/	/	
Suction tubing						
Discharge tubing	/	/	/	/		

Liquid tubing						
Below BTU/h						
Total capacity after distribution						
Over BTU/h						
Suction tubing						
Discharge tubing						
Tubing size						
Liquid tubing						

Table 1-5 Outdoor Unit Tubing Connection Size (

BTU/h
72,000
(kW)
(21.1)

(o19.05)*						
Suction tubing						
Discharge tubing						
(o15.88)						
tubing						
o3/8" (o9.52)						
Liquid tubing						
Balance tubing						

72,000				
96,000				
144,000				
(21.1)				
(28.1)				
(42.2)				
8				
10				
16				
8				

10				
8				
8				
o7/8"				

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(ø22.22)

ø5/8"

ø3/4"

(ø15.88)

(ø19.05)

ø3/8"

ø1/2"

(ø9.52)

(ø12.7)

24.200

54.600

(2.5 hp)

(6 hp)

24.200

-

(2.5 hp)

ø5/8"

ø3/4"

(ø15.88)

(ø19.05)

ø1/2"

ø5/8"

(ø12.7)

(ø15.88)

ø3/8"

ø3/8"

(ø9.52)

(ø9.52)

258.000

334.400

(27 hp)

(35 hp)

238.900

258.000

(25 hp)

(27 hp)

ø1-3/8"

ø1-3/8"

(ø34.92)

(ø34.92)

ø1-1/8"

ø1-1/8"

(ø28.58)

(ø28.58)

ø3/4"

ø3/4"

(ø19.05)

(ø19.05)

96,000

(28.1)

ø3/4" *

1

ø7/8" *

1

(ø22.22) *

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Q Q

Brazing connection

o5/8"

o3/4"

(o19.05)

Brazing connection

o3/8" (o9.52)

Flare connection

o3/8" (o9.52)

Flare connection

Unit: in. (mm)

168,000

192,000

216,000

(49.2)

(56.2)

(63.3)

18

20

10

10

8

10

o1-1/8"

(o28.58)

o7/8"

(o22.22)

o5/8"

(o15.88)

102.400

124.200

85.300

(9 hp)

(11 hp)

(13 hp)

102.400

85.300

54.600

(9 hp)

(11 hp)

(6 hp)

ø3/4"

ø7/8"

ø1-1/8"

(ø19.05)

(ø22.22)

(ø28.58)

ø5/8"

ø3/4"

ø3/4"

(ø15.88)

(ø19.05)

(ø19.05)

ø3/8"

ø3/8"

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Q Q

ø1/2"
 (ø9.52)
 (ø9.52)
 (ø12.70)

-							
*1: The outdoor unit connection tubing (LO) is 334.400 determined by the total capacity of the outdoor (35 hp) ø1-1/2" units connected to the tube ends. The tubing (ø38.10) size is selected based on the table of main ø1-1/8" tube sizes after the branch. (ø28.58)	/	/	/	/	/	/	/

*2: If the total capacity of the indoor units con-
 ø3/4"
 nected to the tube ends is different from the
 (ø19.05)
 total capacity of the outdoor units, then the

-
)
 main tube size is selected based on the total
A
D
 capacity of the outdoor units.
 (For LA, LB, and LF in particular)

2
2

*1 If the size of tubing (LA) is less than 16.4 feet, it is recommended that the tubing diameter be larger than 7/8" (ø)

*2 If the size of tubing (LA) is less than 16.4 feet, it is recommended that the tubing diameter be larger than 1-1/8" (ø)

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Unit: in. (mm)

240,000				
264,000				
(70.3)				
(77.3)				
24				
26				
28				
8				
10				

10
8
8
10

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8
8
8

01-3/8"

(034.92)							
----------	--	--	--	--	--	--	--

01-1/8"

(028.58)							
----------	--	--	--	--	--	--	--

03/4"

(019.05)							
----------	--	--	--	--	--	--	--

143.300

162.400		/		/			
---------	--	---	--	---	--	--	--

(15 hp)

(17 hp)

124.200	/	/	/	/		/	/
---------	---	---	---	---	--	---	---

143.300

(13 hp)	/	/	/	/			
---------	---	---	---	---	--	--	--

(15 hp)

Ø1-1/8"

Ø1-1/8"

(Ø28.58)

(Ø28.58)

Ø7/8"

Ø7/8"

(Ø22.22)

(Ø22.22)

Ø1/2"

Ø1/2"

(Ø12.70)

(Ø12.70)

22.22).

Ø

28.58).

Ø

288,000

(84.3)

30							
----	--	--	--	--	--	--	--

10							
----	--	--	--	--	--	--	--

10							
----	--	--	--	--	--	--	--

10							
----	--	--	--	--	--	--	--

Unit: in. (mm)

hp = horsepower

200.600							
---------	--	--	--	--	--	--	--

238.900							
---------	--	--	--	--	--	--	--

(21 hp)

(25 hp)

200.600							
---------	--	--	--	--	--	--	--

162.400							
---------	--	--	--	--	--	--	--

(17 hp)

(21 hp)

Ø1-1/8"							
---------	--	--	--	--	--	--	--

Ø1-1/8"							
---------	--	--	--	--	--	--	--

(Ø28.58)

(Ø28.58)

Ø7/8"							
-------	--	--	--	--	--	--	--

Ø1-1/8"							
---------	--	--	--	--	--	--	--

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Q Q

(ø22.22)

(ø28.58)

ø5/8"

ø5/8"

(ø15.88)

(ø15.88)

--	--	--	--	--	--	--	--	--

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