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## 4.4 Selecting Piping Diameters

Tables 3-4.6 to 3-4.11 specify the required pipe diameters for the indoor and outdoor piping.

Figure 3-4.5: Selecting piping diameters



Figure 3-4.6: Outdoor connection pipes



Two units combination



Three units combination

Table 3-4.6: Outdoor unit connection pipes (g1 to g3,	G1)
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Dinoc	Outdoor unit capacity (HP)	Pipe Diameter (mm OD)			
Pipes		Liquid pipe	Low Pressure Gas Pipe	High Pressure Gas Pipe	
	8	Ф9.53	Ф19.1	Ф15.9	
	10	Ф9.53	Φ22.2	Ф19.1	
g1 to g3	12	Ф12.7	Ф28.6	Ф19.1	
	14-16	Ф12.7	Ф28.6	Ф22.2	
	18	Ф15.9	Ф28.6	Ф22.2	
G1	≤ 24	Ф15.9	Ф34.9	Ф28.6	
	26-34	Ф19.1	Ф34.9	Ф28.6	
	36	Ф19.1	Ф41.3	Ф28.6	
	≥ 38	Ф19.1	Ф41.3	Ф34.9	

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Table 3-4.7: Outdoor unit branch joint kits (L, M)

Number of	Branch joint kit	
outdoor units		
2	L: FQZHW-02SB1	
3	L+M: FQZHW-03SB1	

Table 3-4.8: Main pipe (L1) and first branch joint (A)

Outdoor Unit Capacity	Pipe Diameter (mm OD)				
(HP)	Liquid pipe	Low Pressure Gas Pipe	High Pressure Gas Pipe	Branch joint kit	
8	Ф9.53	Ф19.1	Ф15.9	FQZHN-02SB1	
10	Ф9.53	Φ22.2	Ф19.1	FQZHN-02SB1	
12	Φ12.7	Ф28.6	Ф19.1	FQZHN-03SB1	
14-16	Ф12.7	Φ28.6	Φ22.2	FQZHN-03SB1	
18	Φ15.9	Φ28.6	Φ22.2	FQZHN-03SB1	
20-22	Φ15.9	Ф28.6	Ф28.6	FQZHN-03SB1	
24	Φ15.9	Ф34.9	Ф28.6	FQZHN-04SB1	
26-34	Φ19.1	Ф34.9	Ф28.6	FQZHN-04SB1	
36	Ф19.1	Ф41.3	Φ28.6	FQZHN-05SB1	
38-60	Ф19.1	Ф41.3	Ф34.9	FQZHN-05SB1	

Notes:

 When the equivalent piping length from outdoor units to the farthest indoor unit exceed 90 m, or the level difference is greater than 50 m (outdoor unit is above) or 40 m (outdoor unit is below), the liquid pipe of the main pipe (L1) should be increased as Table 3-4.2.

Table 3-4.9: Indoor unit main pip	pes (L2 to L8) and indo	or unit branch joint kits
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Total capacity of downstream		Branch joint		
indoor units (× 100W)	Liquid pipe	Low Pressure Gas Pipe	High Pressure Gas Pipe	kit
< 168	Ø9.53	Φ15.9	Φ12.7	FQZHN-01SB1
168 ≤ A < 224	Ø9.53	Ф19.1	Φ15.9	FQZHN-02SB1
224 ≤ A < 330	Ø9.53	Φ22.2	Ф19.1	FQZHN-02SB1
330 ≤ A < 470	Ф12.7	Ф28.6	Ф19.1	FQZHN-03SB1
470 ≤ A < 710	Ф15.9	Ф28.6	Φ28.6	FQZHN-03SB1
710 ≤ A < 1040	Ф19.1	Ф34.9	Φ28.6	FQZHN-04SB1
1040 ≤ A	Ф19.1	Ф41.3	Φ28.6	FQZHN-05SB1

Notes:

1. Choose indoor main pipes from the above table in accordance with total downstream indoor capacity, which is the total capacity of all the indoor units, exclude HT hydro module, connected downstream.

2. If there are HT hydro module connected to the system, the pipes (L9, n, o), only HT hydro module connected downstream, are selected according to Table 3-4.10.

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Table 3-4.10: HT hydro module pipes (L9, n, o) and branch joint kits (only HT hydro module connected downstream)

Total capacity of downstream	Pipe Diamet	Duonch ioint kit	
HT hydro module (× 100W)	Liquid pipe	Gas Pipe	Branch Joint Kit
< 168	Ø9.53	Ф12.7	FQZHN-01SB1
168 ≤ B < 224	Ø9.53	Ф15.9	FQZHN-02SB1
224 ≤ B < 330	Ø9.53	Ф19.1	FQZHN-02SB1
330 ≤ B < 470	Ф12.7	Ф19.1	FQZHN-03SB1
470 ≤ B < 710	Ф15.9	Ф28.6	FQZHN-03SB1
710 ≤ B < 1040	Ф19.1	Ф28.6	FQZHN-04SB1
1040 ≤ B	Ф19.1	Φ28.6	FQZHN-05SB1

Notes:

1. One or more HT hydro modules can be connected in the V6R system, HT hydro modules should be connecting to the first branch joint or its downstream branch joints, never connecting to the MS or header branches.

2. Choose HT hydro module pipes from the above table in accordance with total downstream HT hydro module capacity, which is the total capacity of all the HT hydro module connected downstream.

Table 3-4.11: Indoor unit auxiliary pipes (a to m) and branch joint kits between MS and downstream indoor units

Capacity of indoor	Pipe Dian	Duon ah inint Lit	
units (× 100W)	Liquid pipe (mm)	Gas pipe (mm)	Branch joint kit
A < 56	Ф6.35	Ф12.7	FQZHN-01D
56 ≤ A < 160	Ф9.53	Ф15.9	FQZHN-01D
160 ≤ A <224	Ф9.53	Ф19.1	FQZHN-01D
224 ≤ A ≤ 280	Ф9.53	Φ22.2	FQZHN-02D

Notes:

1. The branch joint kits are required only when two or more indoor units are connected to 1 port of MS.

 Indoor units with a capacity more than 16 kW should be connected to 2 ports merged in a multi MS unit using branch joints (FQZHN-09A). Merged ports must start on an odd number and with the next sequential even number (i.e. 1, 2 or 3, 4 and so on). And if the single MS is used, the downstream Indoor units can be up to a maximum capacity of 32 kW.