DAIKIN

Air Conditioners

Technical Data

VRV®

Air cooled selection procedure

EEDEN11-200

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1 Selection procedure VRV®III system based on cooling load

1 - 1 Indoor unit selection

Enter indoor unit capacity tables at given indoor and outdoor temperature.

Select the unit that the capacity is the nearest to and higher than the given load.

NOTE

1 Individual indoor unit capacity is subject to change by the combination. Actual capacity has to be calculated according to the combination by using outdoor units capacity table.

1 - 2 Outdoor unit selection

Allowable combinations are indicated in indoor unit combination total capacity index table.

In general, oudoor units can be selected as follows though the location of the unit, zoning and usage of the rooms should be considered.

The indoor and outdoor unit combination is determined that the sum of indoor unit capacity index is nearest to and smaller than the capacity index at 100 % combination ratio of each outdoor unit. Up to 29 indoor units can be connected to one outdoor unit (18HP). It is recommended to choose a larger outdoor unit if the installation space is large enough.

If the combination ratio is higher than 100 %, the indoor unit selection will have to be reviewed by using actual capacity of each indoor unit.

Indoor unit combination total capacity index table

Outdoor unit	Indoor unit combination ratio								
	130 %	120 %	110 %	100 %	90 %	80 %	70%	60 %	50 %
4HP	130	120	110	100	90	80	70	60	50
5HP	162.5	150	137.5	125	112.5	100	87.5	75	62.5
6HP	182	168	154	140	126	112	98	84	70
8HP	260	240	220	200	180	160	140	120	100
10HP	325	300	275	250	225	200	175	150	125
12HP	390	360	330	300	270	240	210	180	150
14HP	455	420	385	350	315	280	245	210	175
16HP	520	480	440	400	360	320	280	240	200
18HP	585	540	495	450	405	360	315	270	225
20HP	650	600	550	500	450	400	350	300	250
22HP	715	660	605	550	495	440	385	330	275
24HP	780	720	660	600	540	480	420	360	300
26HP	845	780	715	650	585	520	455	390	325
28HP	910	840	770	700	630	560	490	420	350
30HP	975	900	825	750	675	600	525	450	375
32HP	1,040	960	880	800	720	640	560	480	400
34HP	1,105	1,020	935	850	765	680	595	510	425
36HP	1,170	1,080	990	900	810	720	630	540	450
38HP	1,235	1,140	1,045	950	855	760	665	570	475
40HP	1,300	1,200	1,100	1,000	900	800	700	600	500
42HP	1,365	1,260	1,155	1,050	945	840	735	630	525
44HP	1,430	1,320	1,210	1,100	990	880	770	660	550
46HP	1,495	1,380	1,265	1,150	1,035	920	805	690	575
48HP	1,560	1,440	1,320	1,200	1,080	960	840	720	600
50HP	1,625	1,500	1,375	1,250	1,125	1,000	875	750	625
52HP	1,690	1,560	1,430	1,300	1,170	1,040	910	780	650
54HP	1,755	1,620	1,485	1,350	1,215	1,080	945	810	675

Indoor unit capacity index

Model	15	20	25	32	40	50	63	71	80	100	125	200	250
Capacity index	15	20	25	31.25	40	50	62.5	71	80	100	125	200	250

1 Selection procedure VRV®III system based on cooling load

1 - 3 Actual performance data

Use outdoor unit capacity tables

Determine the correct table according to the outdoor unit model and combination ratio.

Enter the table at given indoor and outdoor temperature and find the outdoor capacity and power input. The individual indoor unit capacity (power input) can be calculated as follows:

$$ICA = \frac{OCA \times INX}{TNX}$$

ICA: Individual indoor unit capacity (power input)
OCA: Outdoor unit capacity (power input)
INX: Individual indoor unit capacity index
TNX: Total capacity index

Then, correct the indoor unit capacity according to the piping length.
If the corrected capacity is smaller than the load, the size of indoor unit has to be increased. Repeat the same selection procedure.

1 - 4 Selection example based on cooling load

1 Given

- Design condition
  Cooling: indoor 20°CWB, outdoor 33°CDB
- Cooling load

Room	A	B	C	D	E	F	G	H
Load (kW)	2.9	2.7	2.5	4.3	4.0	4.0	3.9	4.2

- Power supply: 3-phase 380V/50Hz

2 Indoor unit selection

Enter indoor unit capacity table at:
20°CWB indoor temperature
33°CDB outdoor air temperature.

Selection results are as follows:

Room	A	B	C	D	E	F	G	H
Load (kW)	2.9	2.7	2.5	4.3	4.0	4.0	3.9	4.2
Unit size	25	25	25	40	40	40	40	40
Capacity	3.0	3.0	3.0	4.8	4.8	4.8	4.8	4.8

3 Outdoor unit selection

- Assume that the indoor and outdoor unit combination is as follows.
  Outdoor unit: RXYQ10P
  Indoor unit: FXCQ25M8 x 3, FXCQ40M8 x 5
- Indoor unit combination total capacity index
  25 x 3 + 40 x 5 = 275 (110 %)

1 Selection procedure VRV®III system based on cooling load

1 - 4 Selection example based on cooling load

4 Actual performance data (50Hz)

- Outdoor unit cooling capacity: 30.5kW (RXYQ10P, 110 %)
- Individual capacity
  Capacity of FXCQ25M = 30.5 x $\frac{25}{275}$ = 2.77kW
  Capacity of FXCQ40M = 30.5 x $\frac{40}{275}$ = 4.44kW
-

Actual combination capacity

Room	A	B	C	D	E	F	G	H
Load (kW)	2.9	2.7	2.5	4.3	4.0	4.0	3.9	4.2
Unit size	25	25	25	40	40	40	40	40
Capacity	2.77	2.77	2.77	4.44	4.44	4.44	4.44	4.44

The unit size for room A has to be increased from 25 to 32 because the capacity is less than the load. For new combination, actual capacity is calculated as follows.

- Indoor unit combination total capacity index
  (25 x 2) +31.25 + (40 x5) = 281.25 (112.5 %)
- Outdoor unit cooling capacity:
  32.11kW (direct interpolation between 110 % and 120 % in the table)
- Individual capacity
  Capacity of FXCQ25M = 30.0 x $\frac{25}{281.25}$ = 2.7kW
  Capacity of FXCQ32M = 30.0 x $\frac{32}{281.25}$ = 3.4kW
  Capacity of FXCQ40M = 30.0 x $\frac{40}{281.25}$ = 4.3kW

Actual capacity of new combination

Room	A	B	C	D	E	F	G	H
Load (kW)	2.9	2.7	2.5	4.3	4.0	4.0	3.9	4.2
Unit size	32	25	25	40	40	40	40	40
Capacity	3.4	2.7	2.7	4.3	4.3	4.3	4.3	4.3

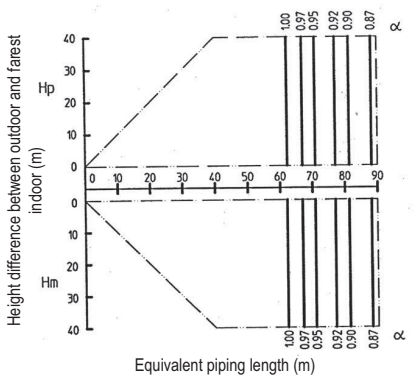
Then, the capacities have to be corrected for actual piping length according to the location of indoor and outdoor units and the distance between them.

2 Capacity correction ratio

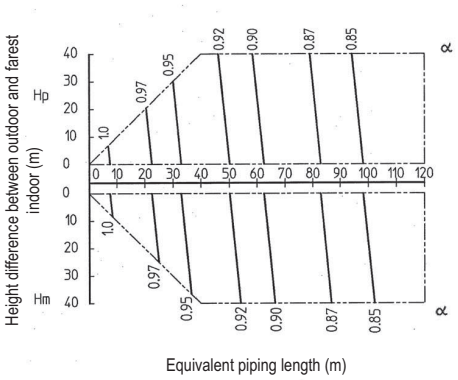
2 - 1 VRV®III heat recovery with connection to heating only hydrobox

REYAQ10P

1. Rate of change in heating capacity



2. Rate of change in cooling capacity



[Explanation of symbols]
Hp: Level difference (m) between indoor and outdoor unit (outdoor unit is on highest location)
Hm: Level difference (m) between indoor and outdoor unit (outdoor unit is on lowest location)

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NOTES

[Capacity correction]

1. These figures illustrate the rate of change in capacity (α) of a standard indoor unit system at maximum load under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the figures above.

2. With this outdoor unit, constant evaporating pressure control during cooling and constant condensing pressure control during heating is carried out.

3. Method of calculating capacity (connection ratio ≤ 100%)
   [Capacity] = [Capacity under 100% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]
   Method of calculating capacity (connection ratio > 100%)
   [Capacity] = [Capacity under xxx% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]

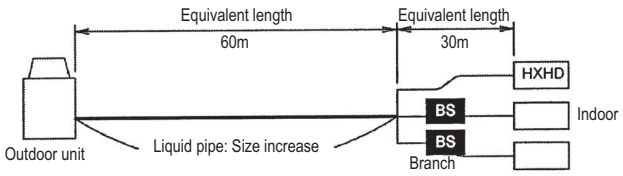
[Equivalent piping length correction]

4. When overall equivalent piping length is 90m or more, the diameter of the main liquid pipes must be increased.

5. [Overall equivalent piping length] = [equivalent piping length to main pipe] X [correction factor (β)] + [equivalent length after branching]

Model	Liquid standard	Liquid increased	Correction factor (β) (heating)	Correction factor (β) (cooling)
REYAQ10P	9.5 Ø	12.7 Ø	0.2	0.5

[EXAMPLE]



A. Overall equivalent piping length = 60m X 0.2 + 30 = 42m (heating; β=0.2)

B. Overall equivalent piping length = 60m X 0.5 + 30 = 60m (cooling; β=0.5)

C. The correction factor for capacity when H=0m: α = 1 (heating)

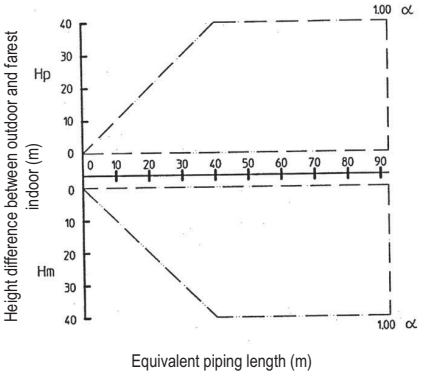
D. The correction factor for capacity when H=0m: α = 0.91 (cooling)

2 Capacity correction ratio

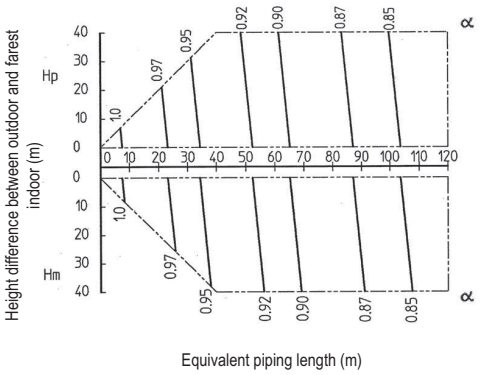
2 - 1 VRV®III heat recovery with connection to heating only hydrobox

REYAQ12P

1. Rate of change in heating capacity



2. Rate of change in cooling capacity



[Explanation of symbols]
Hp: Level difference (m) between indoor and outdoor unit (outdoor unit is on highest location)
Hm: Level difference (m) between indoor and outdoor unit (outdoor unit is on lowest location)

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NOTES

[Capacity correction]

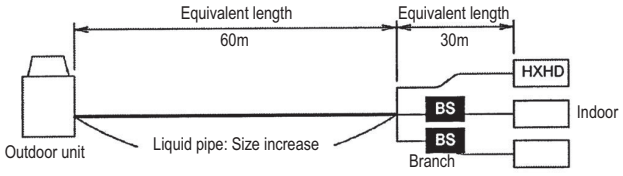
1. These figures illustrate the rate of change in capacity (α) of a standard indoor unit system at maximum load under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the figures above.
2. With this outdoor unit, constant evaporating pressure control during cooling and constant condensing pressure control during heating is carried out.
3. Method of calculating capacity (connection ratio ≤ 100%)
   [Capacity] = [Capacity under 100% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]
   Method of calculating capacity (connection ratio > 100%)
   [Capacity] = [Capacity under xxx% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]

[Equivalent piping length correction]

4. When overall equivalent piping length is 90m or more, the diameter of the main liquid pipes must be increased.
5. [Overall equivalent piping length] = [equivalent piping length to main pipe] X [correction factor (β)] + [equivalent length after branching]

Model	Liquid standard	Liquid increased	Correction factor (β) (heating)	Correction factor (β) (cooling)
REYAQ12P	12.7 Ø	15.9 Ø	0.3	0.5

[EXAMPLE]



A. Overall equivalent piping length = 60m X 0.3 + 30 = 48m (heating; β=0.3)

B. Overall equivalent piping length = 60m X 0.5 + 30 = 60m (cooling; β=0.5)

C. The correction factor for capacity when H=0m: α = 1 (heating)

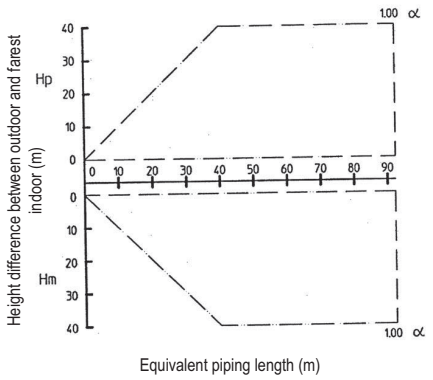
D. The correction factor for capacity when H=0m: α = 0.91 (cooling)

2 Capacity correction ratio

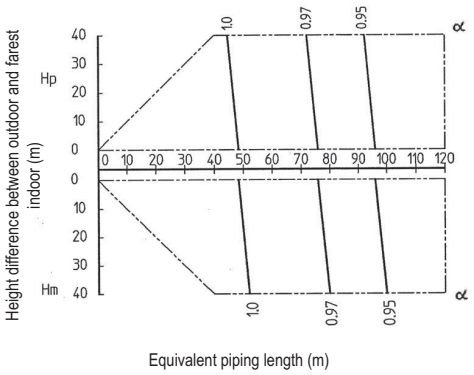
2 - 1 VRV®III heat recovery with connection to heating only hydrobox

REYAQ14P

1. Rate of change in heating capacity



2. Rate of change in cooling capacity



[Explanation of symbols]
Hp: Level difference (m) between indoor and outdoor unit (outdoor unit is on highest location)
Hm: Level difference (m) between indoor and outdoor unit (outdoor unit is on lowest location)

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NOTES

[Capacity correction]

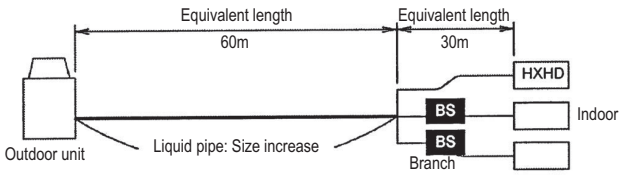
1. These figures illustrate the rate of change in capacity (α) of a standard indoor unit system at maximum load under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the figures above.
2. With this outdoor unit, constant evaporating pressure control during cooling and constant condensing pressure control during heating is carried out.
3. Method of calculating capacity (connection ratio ≤ 100%)
   [Capacity] = [Capacity under 100% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]
   Method of calculating capacity (connection ratio > 100%)
   [Capacity] = [Capacity under xxx% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]

[Equivalent piping length correction]

4. When overall equivalent piping length is 90m or more, the diameter of the main liquid pipes must be increased.
5. [Overall equivalent piping length] = [equivalent piping length to main pipe] X [correction factor (β)] + [equivalent length after branching]

Model	Liquid standard	Liquid increased	Correction factor (β) (heating)	Correction factor (β) (cooling)
REYAQ14P	12.7 Ø	15.9 Ø	0.3	0.5

[EXAMPLE]



A. Overall equivalent piping length = 60m X 0.3 + 30 = 48m (heating; β=0.3)

B. Overall equivalent piping length = 60m X 0.5 + 30 = 60m (cooling; β=0.5)

C. The correction factor for capacity when H=0m: α = 1 (heating)

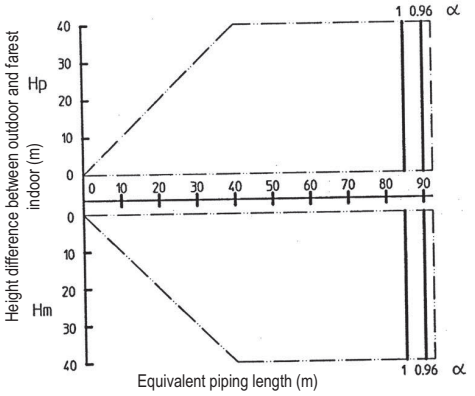
D. The correction factor for capacity when H=0m: α = 0.99 (cooling)

2 Capacity correction ratio

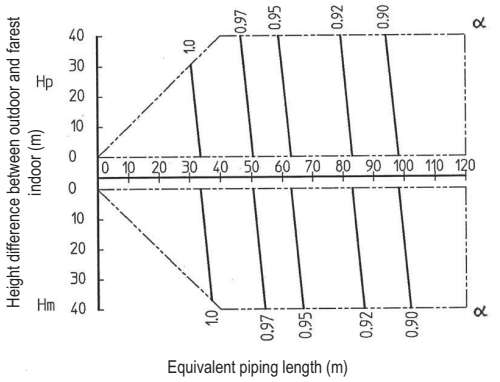
2 - 1 VRV®III heat recovery with connection to heating only hydrobox

REYAQ16P

1. Rate of change in heating capacity



2. Rate of change in cooling capacity



[Explanation of symbols]
Hp: Level difference (m) between indoor and outdoor unit (outdoor unit is on highest location)
Hm: Level difference (m) between indoor and outdoor unit (outdoor unit is on lowest location)

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NOTES

[Capacity correction]

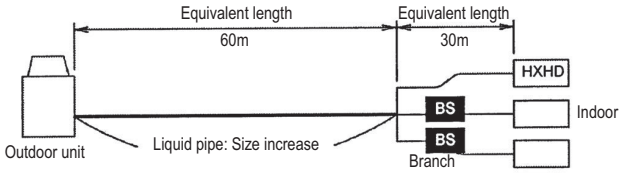
1. These figures illustrate the rate of change in capacity (α) of a standard indoor unit system at maximum load under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the figures above.
2. With this outdoor unit, constant evaporating pressure control during cooling and constant condensing pressure control during heating is carried out.
3. Method of calculating capacity (connection ratio ≤ 100%)
   [Capacity] = [Capacity under 100% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]
   Method of calculating capacity (connection ratio > 100%)
   [Capacity] = [Capacity under xxx% connection ratio (capacity table)] X (correction factor for capacity (α) due to piping length to farest indoor unit]

[Equivalent piping length correction]

4. When overall equivalent piping length is 90m or more, the diameter of the main liquid pipes must be increased.
5. [Overall equivalent piping length] = [equivalent piping length to main pipe] X [correction factor (β)] + [equivalent length after branching]

Model	Liquid standard	Liquid increased	Correction factor (β) (heating)	Correction factor (β) (cooling)
REYAQ16P	12.7 Ø	15.9 Ø	0.3	0.5

[EXAMPLE]



A. Overall equivalent piping length = 60m X 0.3 + 30 = 48m (heating; β=0.3)

B. Overall equivalent piping length = 60m X 0.5 + 30 = 60m (cooling; β=0.5)

C. The correction factor for capacity when H=0m: α = 1 (heating)

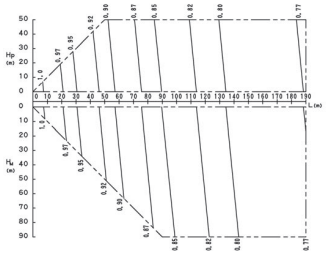
D. The correction factor for capacity when H=0m: α = 0.955 (cooling)

2 Capacity correction ratio

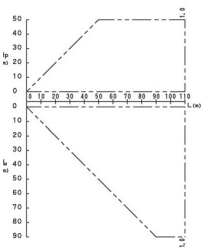
2 - 2 VRV®III heat recovery small footprint combination

REYQ8P9, REYQ22P8

- Rate of change in cooling capacity



- Rate of change in heating capacity



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NOTES

1 These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3 Method of calculating A/C (cooling / heating) capacity:
The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
Calculating A/C capacity of outdoor units
- Condition: Indoor unit combination ratio does not exceed 100%
Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristics table at the 100% combination x capacity change rate due to piping length to the farthest indoor unit
Condition: Indoor unit combination ratio exceeds 100%
Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristics table at the combination x capacity change rate due to piping length to the farthest indoor unit

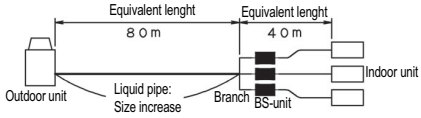
4 When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
[Diameter of above case]

Model	Liquid
REYQ8P9Y1B	Ø12.7
REYQ22P8Y1B	Ø19.1

5 When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
Overall equivalent length = Equivalent length to main pipe x Correction factor + Equivalent length after branching
Choose a correction factor from the following table.

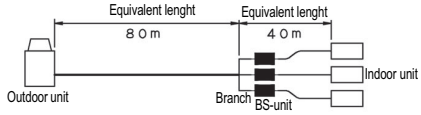
Model	Correction factor
REYQ8P9Y1B	0.2
REYQ22P8Y1B	0.4

Example in case of REYQ22PY1



In the above case (Heating)
Overall equivalent length = 80m x 0.4 + 40m = 72m
The correction factor in capacity when Hp=0m is thus approximately 1.0

6 In combination wich does not include cooling only indoor unit.
Calculate the equivalent length pipe by the following when you calculate cooling capacity
Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching
Example



In the above case (Cooling)
Overall equivalent length = 80m x 0.5 + 40m = 80m
The correction factor in capacity when Hp=0m is thus approximately 0.86

EXPLANATION OF SYMBOLS

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position
L : Equivalent pipe length (m)
α : Rate of change in cooling / heating capacity
[Diameter of pipe (standard size)]

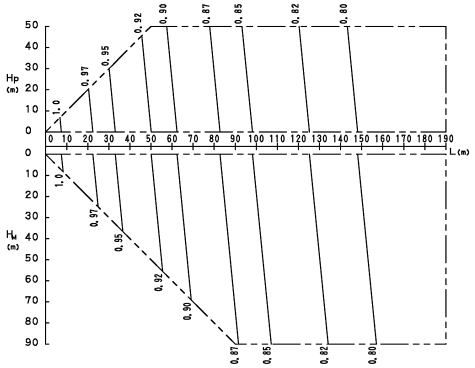
Model	Liquid
REYQ8P9Y1B	Ø9.5
REYQ22P8Y1B	Ø15.9

2 Capacity correction ratio

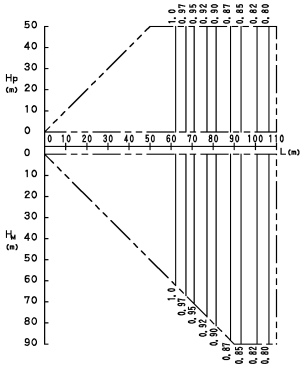
2 - 2 VRV®III heat recovery small footprint combination

REYQ10P8

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



[Diameter of pipe (standard size)]

Model	Liquid
REYQ10P8Y1B	ø 9,5

[Explanation of symbols]
Hp: Level difference (m) between indoor and outdoor units where indoor unit in inferior position
Hm: Level difference (m) between indoor and outdoor units where indoor unit in superior position
L: Equivalent pipe length (m)
α: Capacity correction factor

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NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
   Calculating A/C capacity of outdoor units.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
   x Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

   Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
   x Capacity change rate due to piping length to the farthest indoor unit

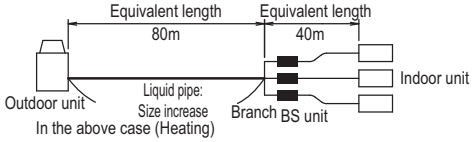
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When the level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ10P8Y1B	ø 12.7

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent lenght should be calculated as follows. (Heating only)

   Overall equivalent length =Equivalent length to main pipe x 0.2 + Equivalent length after branching

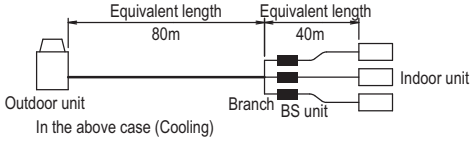
   (example)



   In the above case (Heating)
   Overall equivalent length = 80m x 0.2 + 40m = 56m
   The correction factor in capacity when Hp = 0m is thus approximately 1.0.
6. In combination which does not include cooling only indoor unit, calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length =Equivalent length to main pipe x 0.5 + Equivalent length after branching

   (example)



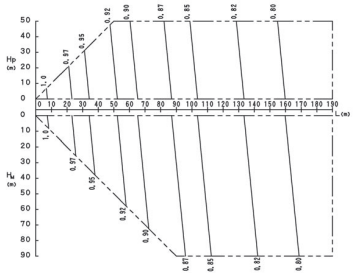
   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp = 0m is thus approximately 0.88

2 Capacity correction ratio

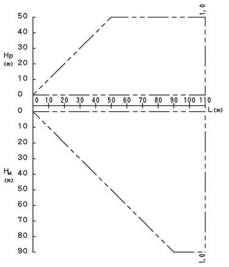
2 - 2 VRV®III heat recovery small footprint combination

REYQ26,28,30,38,40,42,44P8
REYQ12,18P9

- Rate of change in cooling capacity



- Rate of change in heating capacity



3D057935B

NOTES

1 These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.

2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.

3 Method of calculating A/C (cooling / heating) capacity:
The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
Calculating A/C capacity of outdoor units
- Condition: Indoor unit combination ratio does not exceed 100%
  Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination x capacity change rate due to piping length to the farthest indoor unit
  Condition: Indoor unit combination ratio exceeds 100%
  Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination x capacity change rate due to piping length to the farthest indoor unit

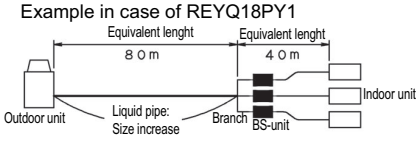
4 When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
[Diameter of above case]

Model	Liquid	Model	Liquid
REYQ12PY1(B)	Ø15.9	REYQ30P8Y1B	Ø22.2
REYQ12P8Y1B		REYQ38P8Y1B	
REYQ18P8Y1B	Ø19.1	REYQ40P8Y1B	
REYQ26P8Y1B	Ø22.2	REYQ42P8Y1B	
REYQ28P8Y1B		REYQ44P8Y1B	

5 When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
Overall equivalent length = Equivalent length to main pipe x Correction factor + Equivalent length after branching
Choose a correction factor from the following table.

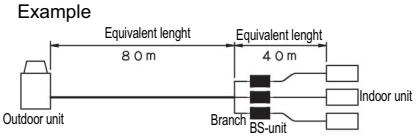
Model	Correction factor	Model	Correction factor
REYQ12PY1(B)	0.3	REYQ38P8Y1B	0.4
REYQ12P8Y1B		REYQ40P8Y1B	
REYQ18P8Y1B	0.4	REYQ42P8Y1B	
REYQ26P8Y1B		REYQ44P8Y1B	
REYQ28P8Y1B			
REYQ30P8Y1B			

Example in case of REYQ18PY1



In the above case (Heating)
Overall equivalent length = 80m x 0.4 + 40m = 72m
The correction factor in capacity when Hp=0m is thus approximately 1.0

6 In combination which does not include cooling only indoor unit.
Calculate the equivalent length pipe by the following when you calculate cooling capacity
Overall equivalent length =
Equivalent length to main pipe x 0.5 + Equivalent length after branching
Example



In the above case (Cooling)
Overall equivalent length = 80m x 0.5 + 40m = 80m
The correction factor in capacity when Hp=0m is thus approximately 0.88

EXPLANATION OF SYMBOLS

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

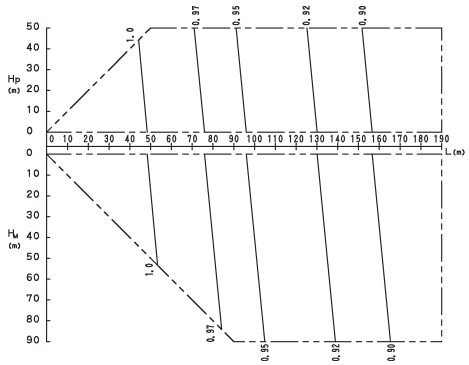
Model	liquid	Model	liquid
REYQ12PY1(B)	Ø12.7	REYQ38P8Y1B	Ø19.1
REYQ12P8Y1(B)		REYQ40P8Y1B	
REYQ18P8Y1B	Ø15.9	REYQ42P8Y1B	
REYQ26P8Y1B	Ø19.1	REYQ44P8Y1B	
REYQ28P8Y1B			
REYQ30P8Y1B			

2 Capacity correction ratio

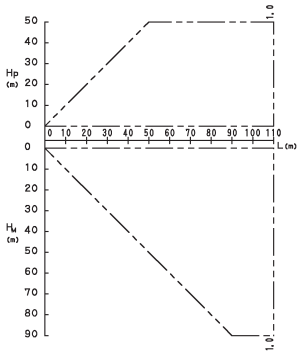
2 - 2 VRV®III heat recovery small footprint combination

REYQ14P8

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



[Diameter of pipe (standard size)]

Model	Liquid
REYQ14P8Y1B	ø 12,7

[Explanation of symbols]
Hp: Level difference (m) between indoor and outdoor units where indoor unit in inferior position
Hm: Level difference (m) between indoor and outdoor units where indoor unit in superior position
L: Equivalent pipe length (m)
α: Capacity correction factor

3D058182A

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
   Calculating A/C capacity of outdoor units.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
   x Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

   Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
   x Capacity change rate due to piping length to the farthest indoor unit

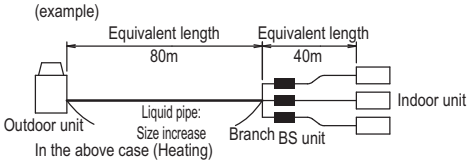
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When the level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ14P8Y1B	ø 15.9

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent lenght should be calculated as follows. (Heating only)

   Overall equivalent length =Equivalent length to main pipe x 0.3 + Equivalent length after branching

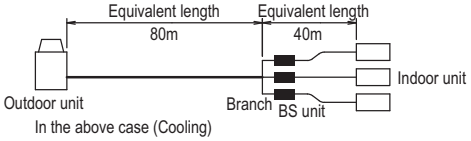
   (example)



   In the above case (Heating)
   Overall equivalent length = 80m x 0.3 + 40m = 64m
   The correction factor in capacity when Hp = 0m is thus approximately 1.0.
6. In combination which does not include cooling only indoor unit, calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length =Equivalent length to main pipe x 0.5 + Equivalent length after branching

   (example)



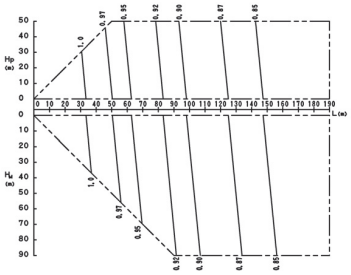
   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp = 0m is thus approximately 0.96

2 Capacity correction ratio

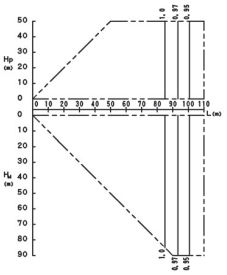
2 - 2 VRV®III heat recovery small footprint combination

REYQ16P8

- Rate of change in cooling capacity



- Rate of change in heating capacity



3D058183A

NOTES

1 These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.

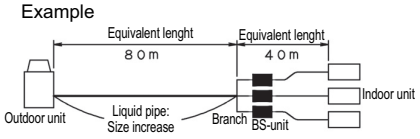
2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.

3 Method of calculating A/C (cooling / heating) capacity:
The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
Calculating A/C capacity of outdoor units
- Condition: Indoor unit combination ratio does not exceed 100%
  Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristics table at the 100% combination x capacity change rate due to piping length to the farthest indoor unit
  Condition: Indoor unit combination ratio exceeds 100%
  Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristics table at the combination x capacity change rate due to piping length to the farthest indoor unit

4 When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
When level difference is 50m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
[Diameter of above case]

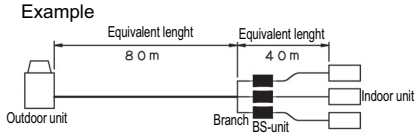
Model	Liquid
REYQ16P9Y1B	Ø15.9

5 When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
Overall equivalent length = Equivalent length to main pipe x 0.3 + Equivalent length after branching
Choose a correction factor from the following table.
Example



In the above case (Heating)
Overall equivalent length = 80m x 0.3 + 40m = 64m
The correction factor in capacity when Hp=0m is thus approximately 1.0

6 In combination wich does not include cooling only indoor unit.
Calculate the equivalent length pipe by the following when you calculate cooling capacity
Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching
Example



In the above case (Cooling)
Overall equivalent length = 80m x 0.5 + 40m = 80m
The correction factor in capacity when Hp=0m is thus approximately 0.93

EXPLANATION OF SYMBOLS

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position
L : Equivalent pipe length (m)
α : Rate of change in cooling / heating capacity

[Diameter of pipe (standard size)]

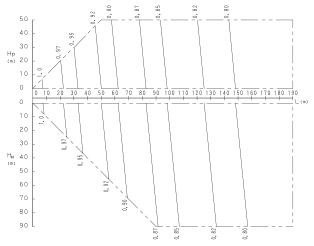
Model	Liquid
REYQ16P9Y1B	Ø12.7

2 Capacity correction ratio

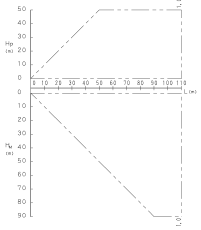
2 - 2 VRV®III heat recovery small footprint combination

REYQ20,32,34P8

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D057933

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

   Calculating A/C capacity of outdoor units

   - Condition: Indoor unit combination ratio does not exceed 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit

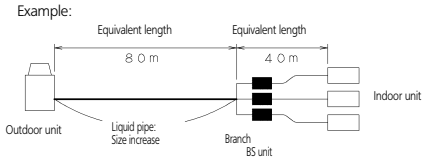
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ20P8Y1B	Φ 19.1
REYQ32P8Y1B	Φ 22.2
REYQ34P8Y1B	

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching

   Example:

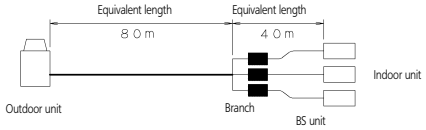


   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.

6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.88.

Explanation of symbols

H_P : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

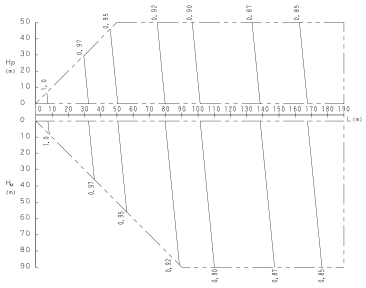
Model	Liquid
REYQ20P8Y1B	Φ 15.9
REYQ32P8Y1B	Φ 19.1
REYQ34P8Y1B	

2 Capacity correction ratio

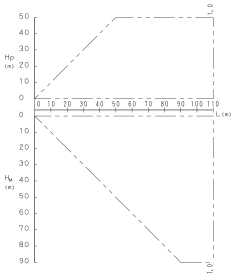
2 - 2 VRV®III heat recovery small footprint combination

REYQ24P8

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D057932

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

   Calculating A/C capacity of outdoor units

   - Condition: Indoor unit combination ratio does not exceed 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination X Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

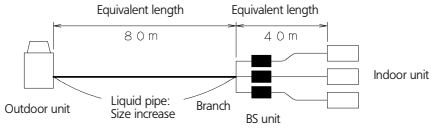
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ24P8Y1B	Φ19.1

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching

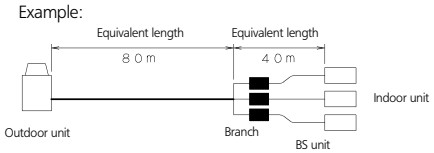
   Example:



   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.
6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.91.

Explanation of symbols

H_P : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

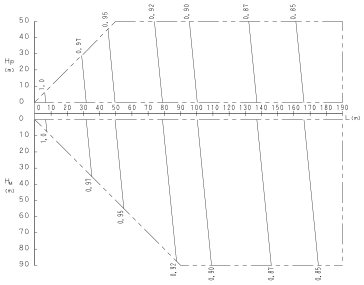
Model	Liquid
REYQ24P8Y1B	Φ15.9

2 Capacity correction ratio

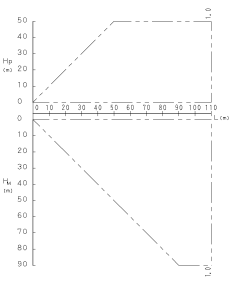
2 - 2 VRV®III heat recovery small footprint combination

REYQ36P9

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D057934

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

   Calculating A/C capacity of outdoor units

   - Condition: Indoor unit combination ratio does not exceed 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit

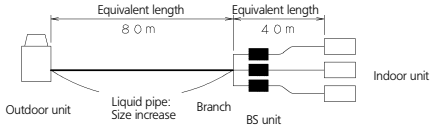
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ36P9Y1B	Φ 22.2

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching

   Example:

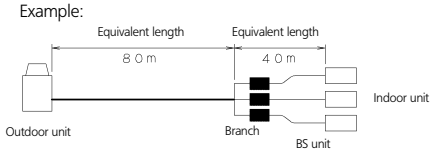


   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.

6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.92.

Explanation of symbols

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

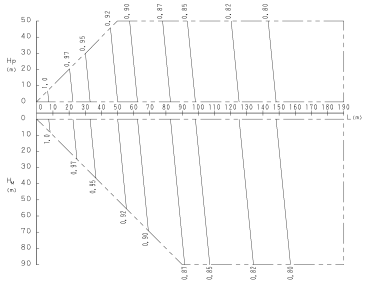
Model	Liquid
REYQ36P9Y1B	Φ19.1

2 Capacity correction ratio

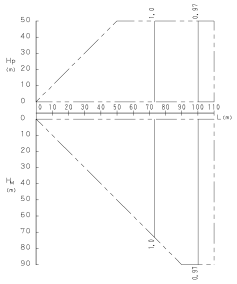
2 - 2 VRV®III heat recovery small footprint combination

REYQ46P8

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D057936

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

   Calculating A/C capacity of outdoor units
   - Condition: Indoor unit combination ratio does not exceed 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit
   - Condition: Indoor unit combination ratio exceeds 100%.

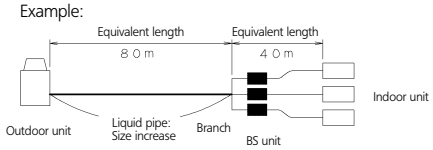
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ46P8Y1B	Φ 22.2

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching

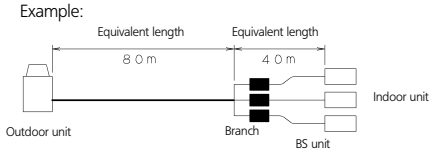
   Example:



   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 0.98.
6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.88.

Explanation of symbols

H_P : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

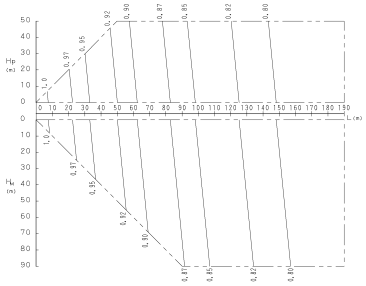
Model	Liquid
REYQ46P8Y1B	Φ19.1

2 Capacity correction ratio

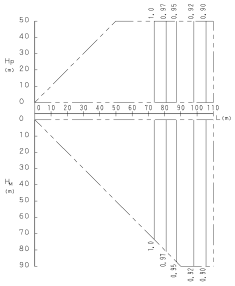
2 - 2 VRV®III heat recovery small footprint combination

REYQ48P8

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



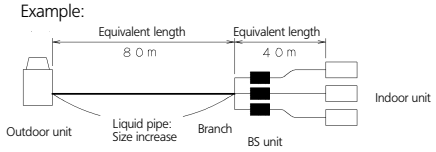
3D057937

NOTES

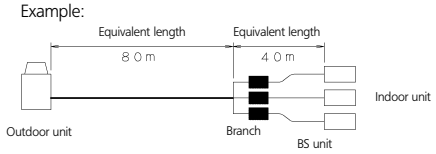
1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
   Calculating A/C capacity of outdoor units
   - Condition: Indoor unit combination ratio does not exceed 100%.
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit
   - Condition: Indoor unit combination ratio exceeds 100%.
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ48P8Y1B	Φ22.2

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching
   Example:



   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 0.97.
6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.
   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching
   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.88.

Explanation of symbols

H_P : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

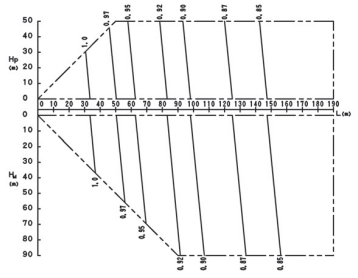
Model	Liquid
REYQ48P8Y1B	Φ19.1

2 Capacity correction ratio

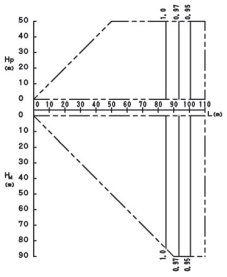
2 - 3 VRV®III heat recovery high COP combination

REYHQ16P

- Rate of change in cooling capacity



- Rate of change in heating capacity



3D058183A

NOTES

1 These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.

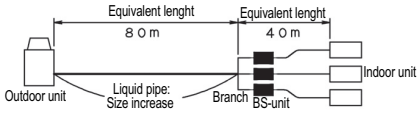
2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.

3 Method of calculating A/C (cooling / heating) capacity:
The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
Calculating A/C capacity of outdoor units
- Condition: Indoor unit combination ratio does not exceed 100%
  Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristics table at the 100% combination x capacity change rate due to piping length to the farthest indoor unit
  Condition: Indoor unit combination ratio exceeds 100%
  Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristics table at the combination x capacity change rate due to piping length to the farthest indoor unit

4 When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
When level difference is 50m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
[Diameter of above case]

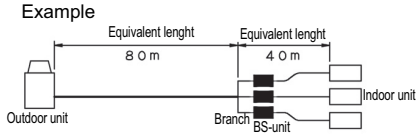
Model	Liquid
REYQ16P9Y1B	Ø15.9

5 When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
Overall equivalent length = Equivalent length to main pipe x 0.3 + Equivalent length after branching
Example



In the above case (Heating)
Overall equivalent length = 80m x 0.3 + 40m = 64m
The correction factor in capacity when Hp=0m is thus approximately 1.0

6 In combination wich does not include cooling onlyindoor unit.
Calculate the equivalent length pipe by the following when you calculate cooling capacity
Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching
Example



In the above case (Cooling)
Overall equivalent length = 80m x 0.5 + 40m = 80m
The correction factor in capacity when Hp=0m is thus approximately 0.93

EXPLANATION OF SYMBOLS

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position
L : Equivalent pipe length (m)
α : Rate of change in cooling / heating capacity

[Diameter of pipe (standard size)]

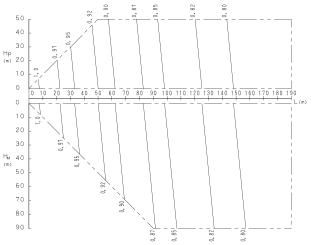
Model	Liquid
REYQ16P9Y1B	Ø12.7

2 Capacity correction ratio

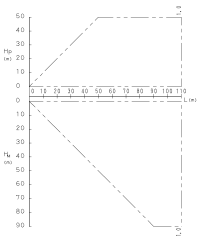
2 - 3 VRV®III heat recovery high COP combination

REYHQ20P

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D057933

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
   Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

   Calculating A/C capacity of outdoor units

   - Condition: Indoor unit combination ratio does not exceed 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit

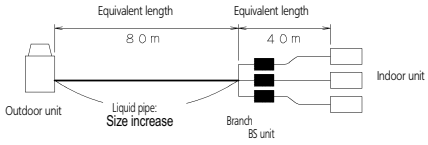
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYHQ20PY1B	Φ 19.1

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching

   Example:

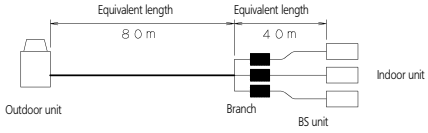


   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.

6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.88.

Explanation of symbols

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

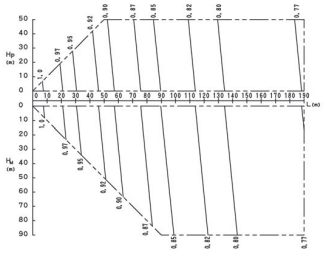
Model	Liquid
REYHQ20PY1B	Φ 15.9

2 Capacity correction ratio

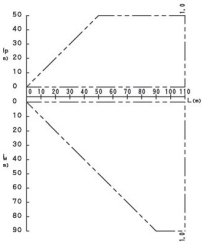
2 - 3 VRV®III heat recovery high COP combination

REYHQ22P

- Rate of change in cooling capacity



- Rate of change in heating capacity



3D057931B

NOTES

1 These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions.
Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3 Method of calculating A/C (cooling / heating) capacity:
The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.
Calculating A/C capacity of outdoor units
- Condition: Indoor unit combination ratio does not exceed 100%
Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination x capacity change rate due to piping length to the farthest indoor unit
Condition: Indoor unit combination ratio exceeds 100%
Maximum A./C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination x capacity change rate due to piping length to the farthest indoor unit

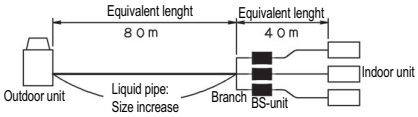
4 When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
[Diameter of above case]

Model	Liquid
REYHQ22P8Y1B	Ø19.1

5 When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
Overall equivalent length = Equivalent length to main pipe x Correction factor + Equivalent length after branching
Choose a correction factor from the following table.

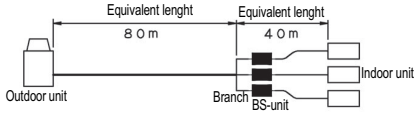
Model	Correction factor
REYHQ22P8Y1B	0.4

Example in case of REYHQ22PY1



In the above case (Heating)
Overall equivalent length = 80m x 0.4 + 40m = 72m
The correction factor in capacity when Hp=0m is thus approximately 1.0

6 In combination wich does not include cooling only indoor unit.
Calculate the equivalent length pipe by the following when you calculate cooling capacity
Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching
Example



In the above case (Cooling)
Overall equivalent length = 80m x 0.5 + 40m = 80m
The correction factor in capacity when Hp=0m is thus approximately 0.86

EXPLANATION OF SYMBOLS

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position
L : Equivalent pipe length (m)
α : Capacity correction factor
[Diameter of pipe (standard size)]

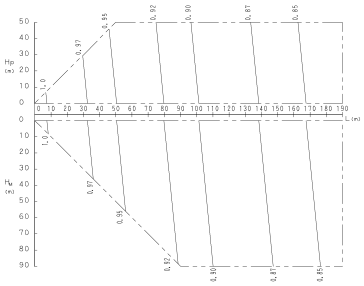
Model	Liquid
REYHQ22P8Y1B	Ø15.9

2 Capacity correction ratio

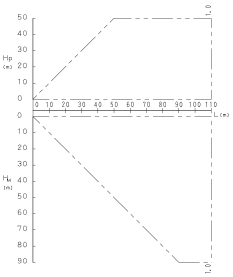
2 - 3 VRV®III heat recovery high COP combination

REYHQ24P

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D057932

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating A/C (cooling/heating) capacity:
   The maximum A/C capacity of the system will be either the total A/C capacity of the indoor units obtained from capacity characteristic table or the maximum A/C capacity of outdoor units as mentioned below, whichever smaller.

   Calculating A/C capacity of outdoor units

   - Condition: Indoor unit combination ratio does not exceed 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit

   - Condition: Indoor unit combination ratio exceeds 100%.

     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit

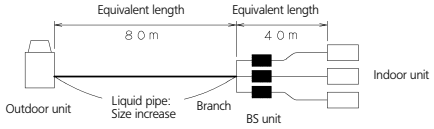
4. When overall equivalent pipe length is 90m or more, the diameter of the main liquid pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYHQ24PY1B	Φ19.1

5. When the main sections of the interunit liquid pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   Overall equivalent length = Equivalent length to main pipe x 0.4 + Equivalent length after branching

   Example:

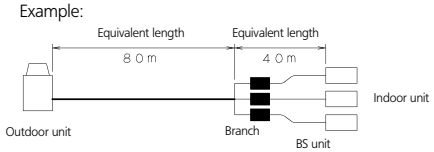


   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.

6. In the combination which does not include cooling only indoor unit, Calculate the equivalent length pipe by the following when you calculate cooling capacity.

   Overall equivalent length = Equivalent length to main pipe x 0.5 + Equivalent length after branching

   Example:



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp=0m is thus approximately 0.91.

Explanation of symbols

H_p : Level difference (m) between indoor and outdoor units where indoor unit in inferior position.
H_M : Level difference (m) between indoor and outdoor units where indoor unit in superior position.
L : Equivalent pipe length (m)
α : Capacity correction factor

[Diameter of pipe (standard size)]

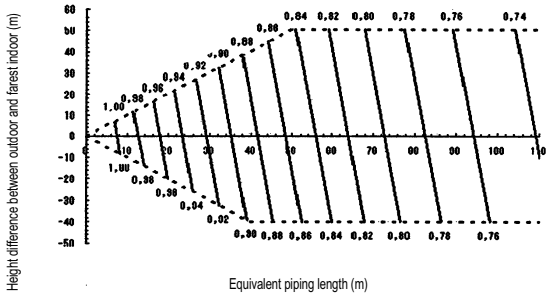
Model	Liquid
REYHQ24PY1B	Φ15.9

2 Capacity correction ratio

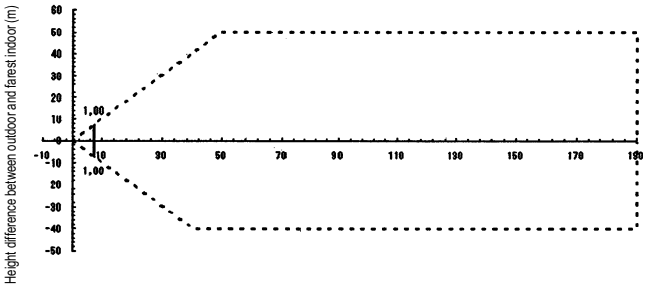
2 - 4 VRV®III heat pump small footprint combination

RXYQ5P

Correction ratio for cooling capacity



Correction ratio for heating capacity



3TW31472-1A

NOTES

1 These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.

3 Method of calculating the capacity of the outdoor units.
The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
Condition: Indoor connection ratio does not exceed 100%
Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio X Correction ratio of piping to farest indoor
Condition: Indoor connection ratio exceeds 100%
Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio X Correction ratio of piping to farest indoor

4 When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	gas	liquid
RXYQ5P	19.1	9.5

5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

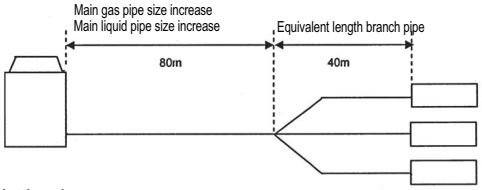
Model	gas	liquid
RXYQ5P	15.9	9.5

6 Equivalent length used in the above figures is based upon the following equivalent length
equivalent piping length = equivalent length of main pipe X correction factor + equivalent length of branch pipes
Choose the correction factor from the following table.

When cooling capacity is calculated: gas pipe size
When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	

Example



In the above case:
(Cooling) Overall equivalent length= 80m x 0.5 + 40m = 80m
(Heating) Overall equivalent length= 80m x 1.0 + 40m = 120m

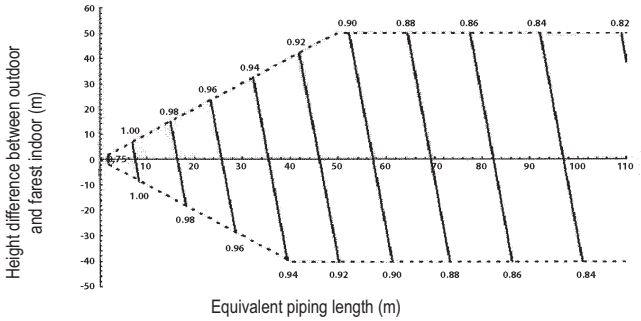
The rate of change in:
Cooling capacity when height difference = 0 is thus approximately 0.78
Heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

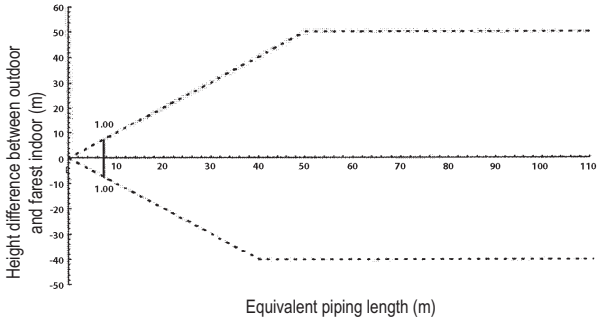
2 - 4 VRV®III heat pump small footprint combination

RXYQ8P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ8P9	19.1	9.5

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ8P9	22.2	12.7

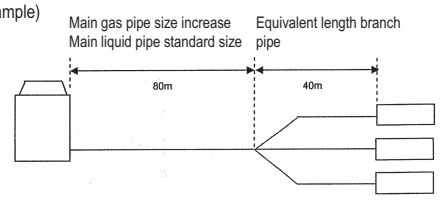
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

(example)



In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

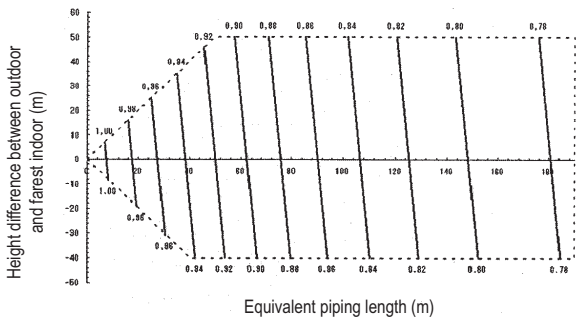
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.86
heating capacity when height difference = 0 is thus approximately 1.00

2 Capacity correction ratio

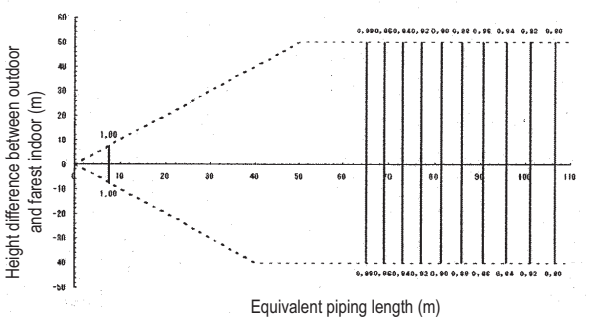
2 - 4 VRV®III heat pump small footprint combination

RXYQ10P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ10P9	22.2	9.5

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ10P9	25.4 *	12.7

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

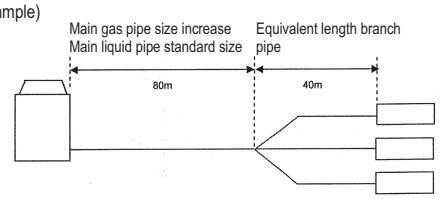
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.[When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   (example)



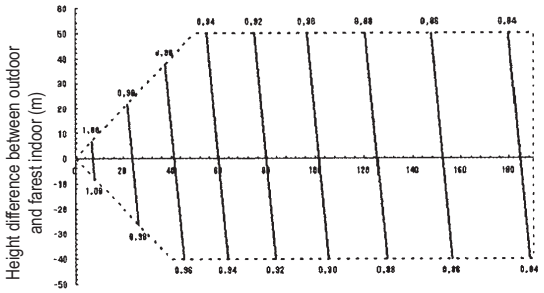
   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.87
   heating capacity when height difference = 0 is thus approximately 0.90

2 Capacity correction ratio

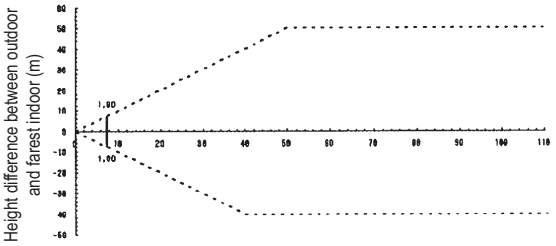
2 - 4 VRV®III heat pump small footprint combination

RXYQ12,14,24,36P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ12P9	28.6	12.7
RXYQ14P9	28.6	12.7
RXYQ24P9	34.9	15.9
RXYQ36P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ12P9	28.6	15.9
RXYQ14P9	28.6	15.9
RXYQ24P9	34.9	15.9
RXYQ36P9	41.3	19.1

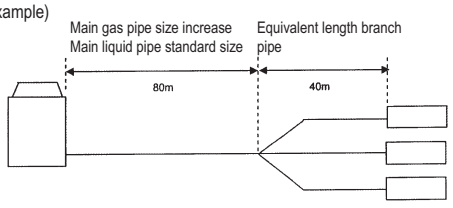
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   [When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

(example)



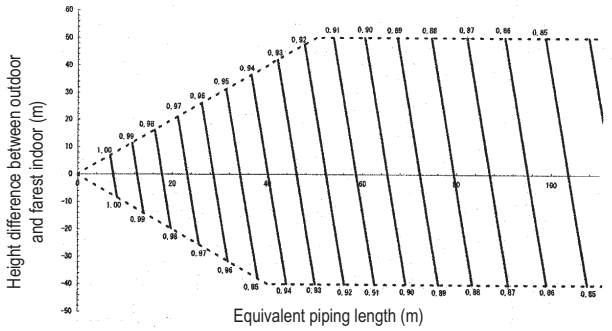
In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.89
heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

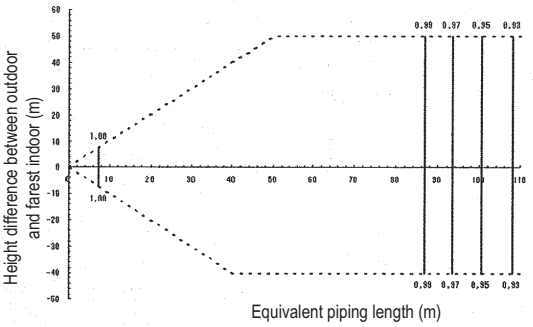
2 - 4 VRV®III heat pump small footprint combination

RXYQ16P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ16P9	28.6	12.7

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ16P9	31.8*	15.9

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

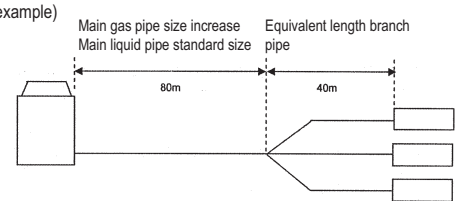
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   [When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   (example)



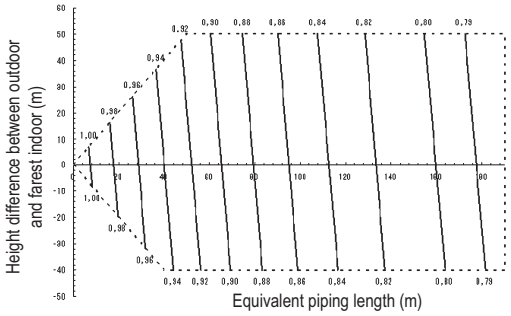
   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 0.99

2 Capacity correction ratio

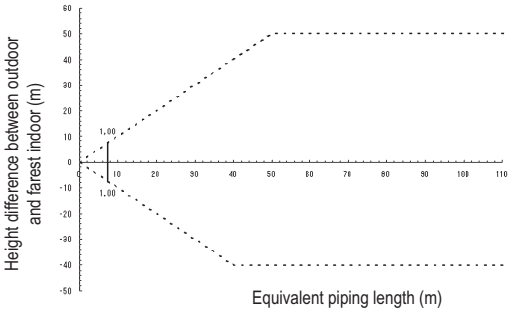
2 - 4 VRV®III heat pump small footprint combination

RXYQ18,36-30,38-44P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ18P9	28.6	15.9
RXYQ26-30P9	34.9	19.1
RXYQ38-44P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ18P9	31.8*	19.1
RXYQ26-30P9	38.1*	22.2
RXYQ38-44P9	41.3	22.2

* If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

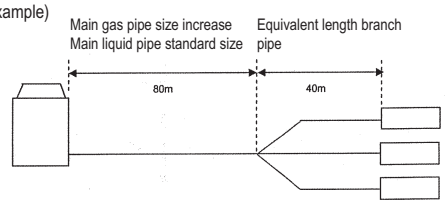
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

(example)



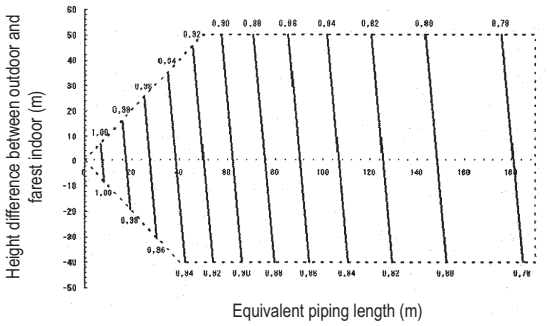
In the above case (for RXYQ38-44) (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

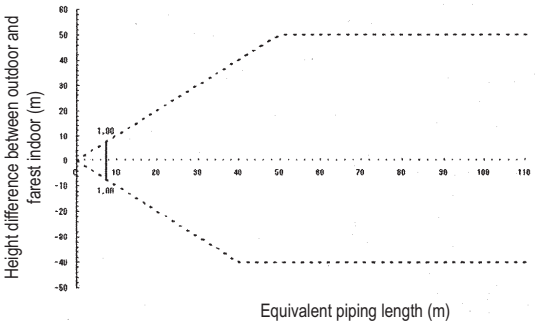
2 - 4 VRV®III heat pump small footprint combination

RXYQ20,32-34P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ20P9	28.6	15.9
RXYQ32-34P9	34.9	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ20P9	31.8*	19.1
RXYQ32-34P9	38.1*	22.2

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

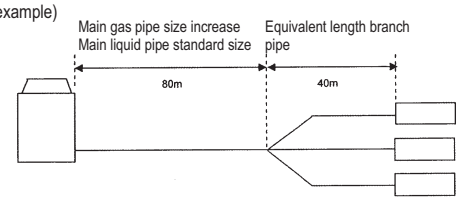
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.[When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   (example)



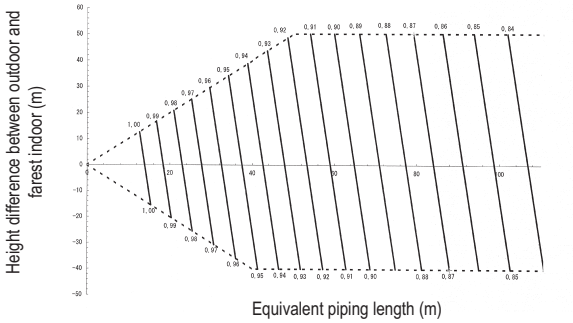
   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

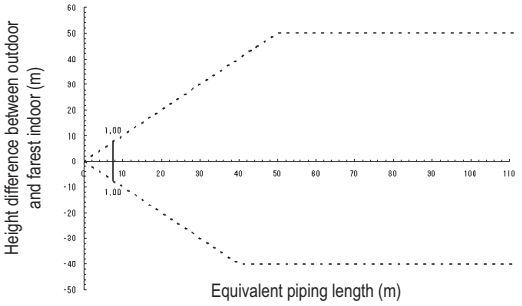
2 - 4 VRV®III heat pump small footprint combination

RXYQ22P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ22P9	28.6	15.9

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ22P9	31.8*	19.1

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

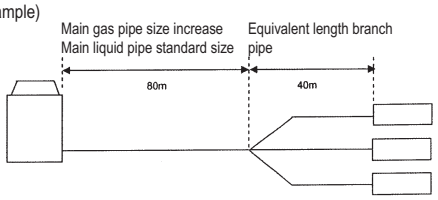
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   (example)



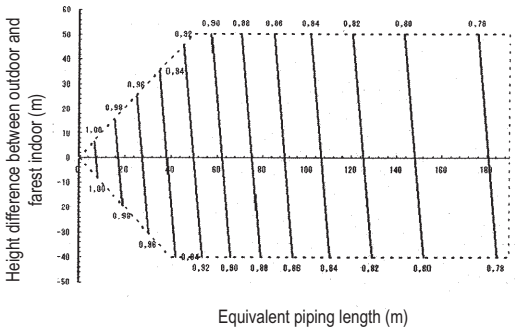
   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
   The rate of change in cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

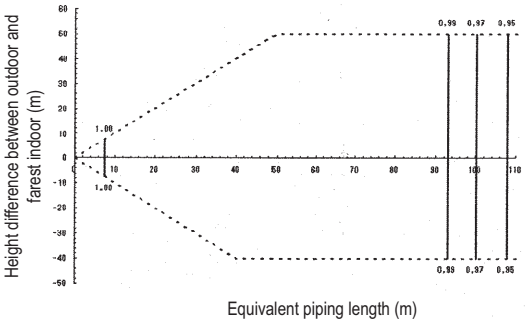
2 - 4 VRV®III heat pump small footprint combination

RXYQ46P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ46P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ46P9	41.3	22.2

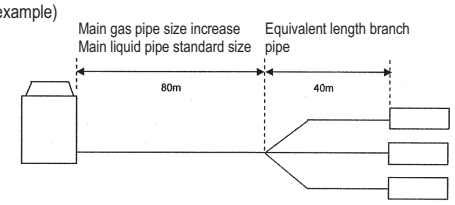
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

Choose the correction factor from the following table.
- When cooling capacity is calculated: gas pipe size
- When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

(example)



In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

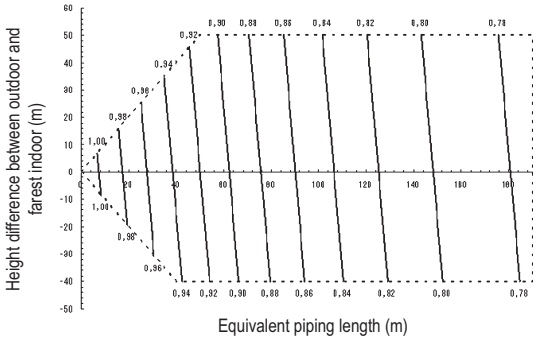
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

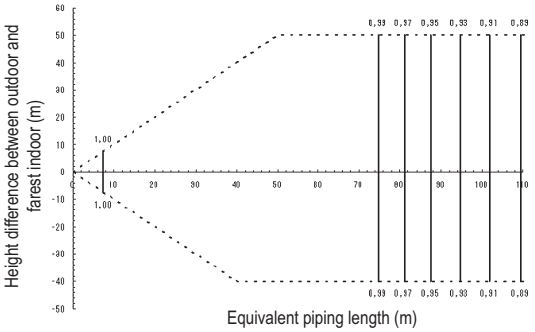
2 - 4 VRV®III heat pump small footprint combination

RXYQ48P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ48P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ48P9	41.3	22.2

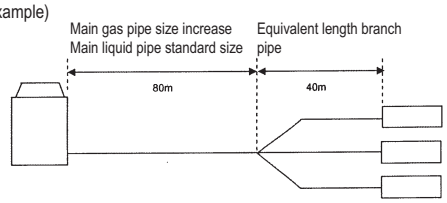
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.[When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

(example)



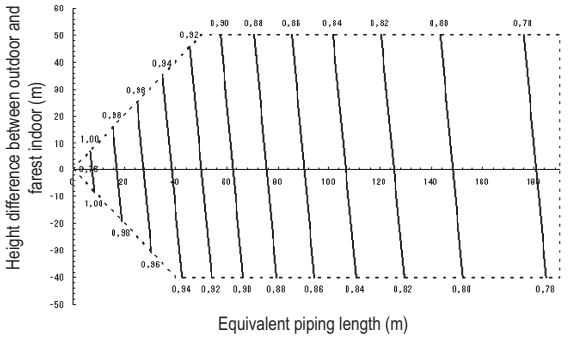
In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately 0.97

2 Capacity correction ratio

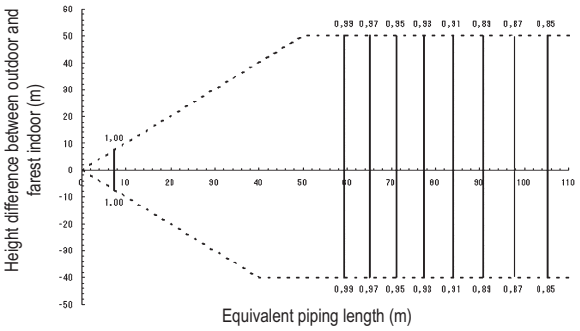
2 - 4 VRV®III heat pump small footprint combination

RXYQ50P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ50P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ50P9	41.3	22.2

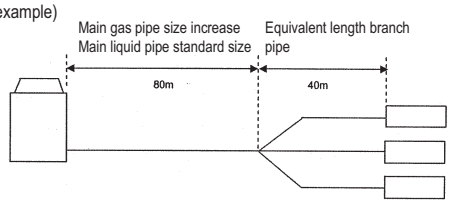
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

(example)



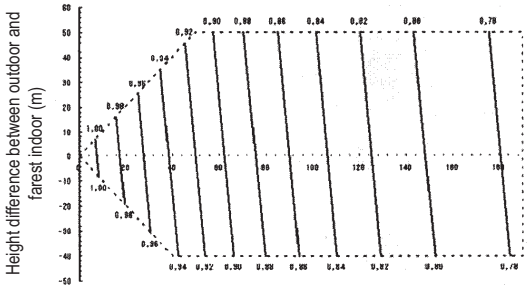
In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately 0.92

2 Capacity correction ratio

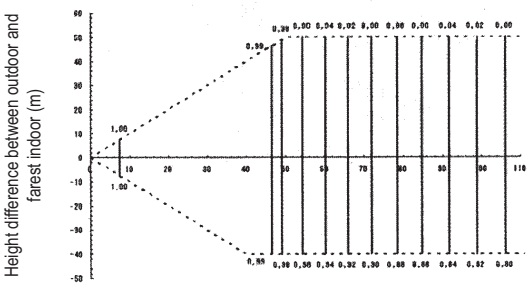
2 - 4 VRV®III heat pump small footprint combination

RXYQ52P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ52P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ52P9	41.3	22.2

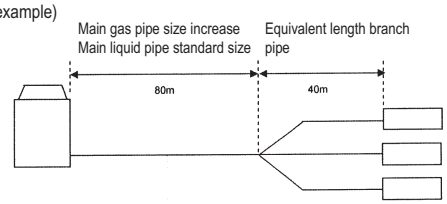
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.[When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

(example)



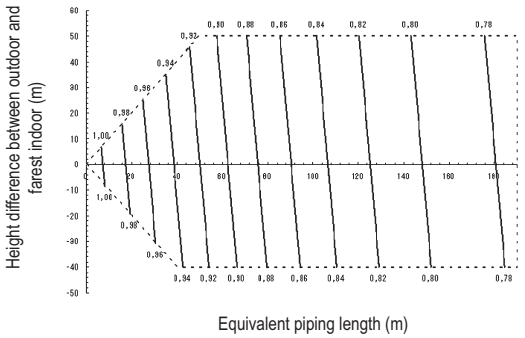
In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately 0.88

2 Capacity correction ratio

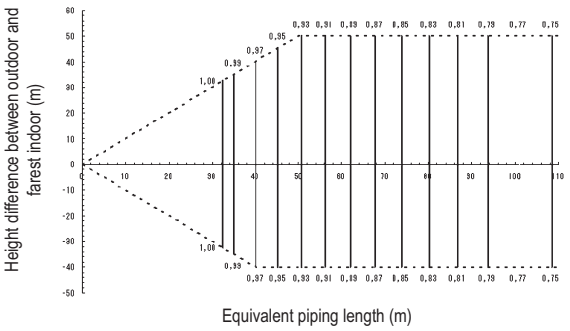
2 - 4 VRV®III heat pump small footprint combination

RXYQ54P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXYQ54P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diamters, see below.

Model	Gas pipe	Liquid pipe
RXYQ54P9	41.3	22.2

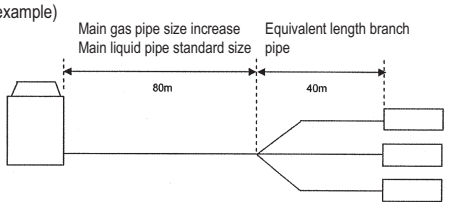
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length =(Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.[When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

(example)



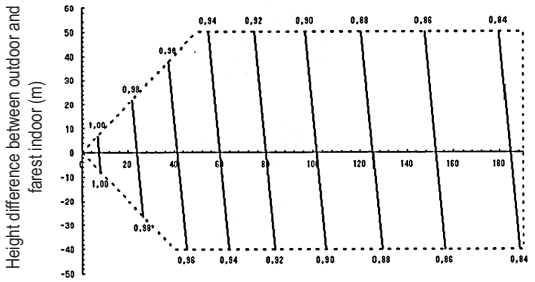
In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m
The rate of change in cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately 0.83

2 Capacity correction ratio

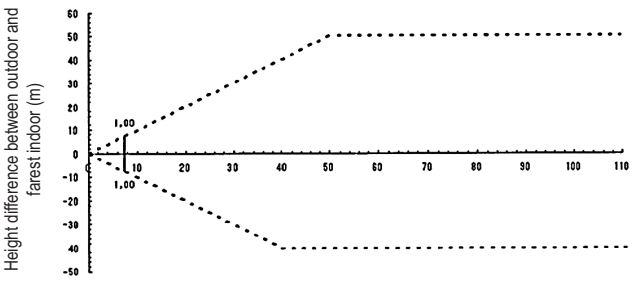
2 - 5 VRV®III heat pump high COP combination

RXYHQ12,24,36P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



Diameter of the main pipes (standard size)

Model	Gas pipe	Liquid pipe
RXYHQ12P9	28.6	12.7
RXYHQ24P9	34.9	15.9
RXYHQ36P9	41.3	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXYHQ12P9	28.6	15.9
RXYHQ24P9	34.9	19.1
RXYHQ36P9	41.3	22.2

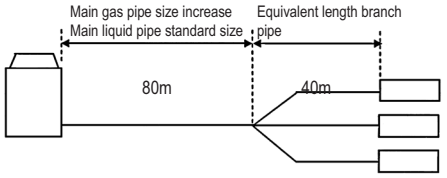
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length:

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	
Heating (liquid pipe)	1.0	0.5

   Example



   In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

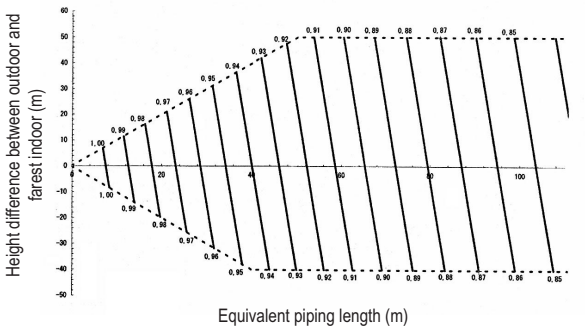
   The rate of change in: cooling capacity when height difference = 0 is thus approximately 0.89
   heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

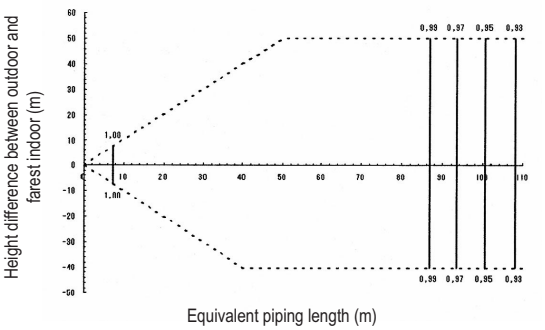
2 - 5 VRV®III heat pump high COP combination

RXYHQ16P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



Diameter of the main pipes (standard size)

Model	Gas pipe	Liquid pipe
RXYHQ16P9	28.6	12.7

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXYHQ16P9	31.8*	15.9

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

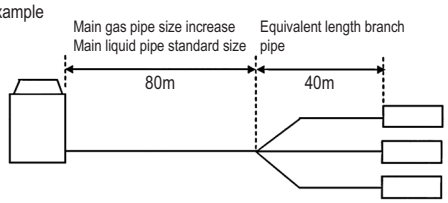
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length:

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   [When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

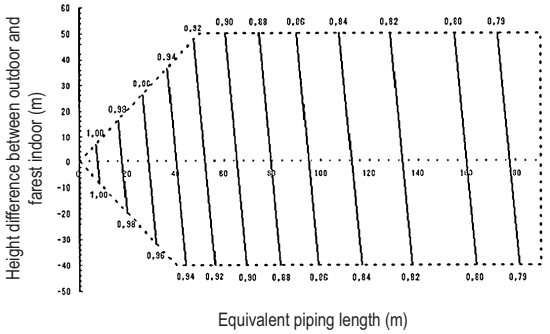
   The rate of change in: cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 0.99

2 Capacity correction ratio

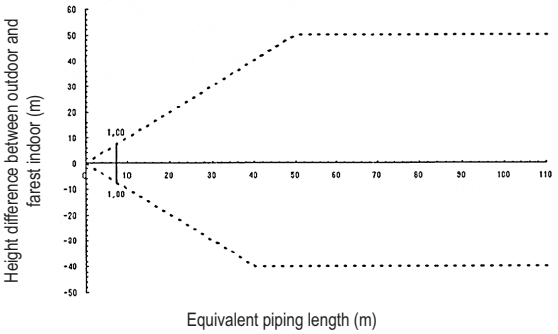
2 - 5 VRV®III heat pump high COP combination

RXYHQ18,26-30P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



Diameter of the main pipes (standard size)

Model	Gas pipe	Liquid pipe
RXYHQ18P9	28.6	15.9
RXYHQ26-30P9	34.9	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXYHQ18P9	31.8*	19.1
RXYHQ26-30P9	38.1*	22.2

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

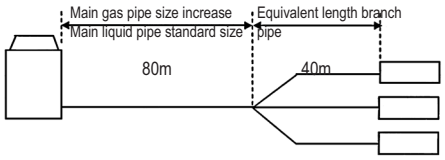
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length:

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



   In the above case (Cooling) Overall equivalent length = 80m x 1.0 + 40m = 120m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

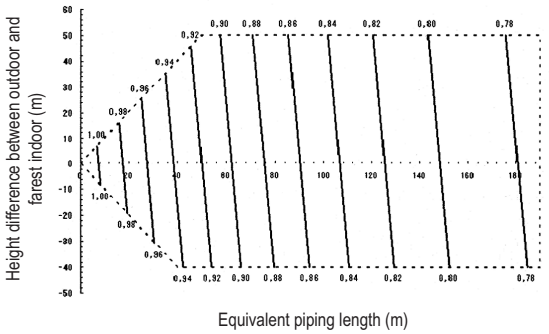
   The rate of change in: cooling capacity when height difference = 0 is thus approximately 0.83
   heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

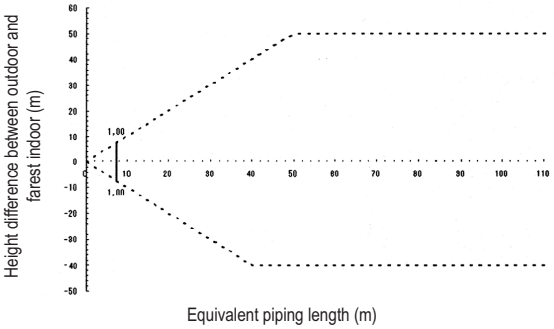
2 - 5 VRV®III heat pump high COP combination

RXYHQ20,32,34P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



Diameter of the main pipes (standard size)

Model	Gas pipe	Liquid pipe
RXYHQ20P9	28.6	15.9
RXYHQ32-34P9	34.9	19.1

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXYHQ20P9	31.8*	19.1
RXYHQ32-34P9	38.1*	22.2

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

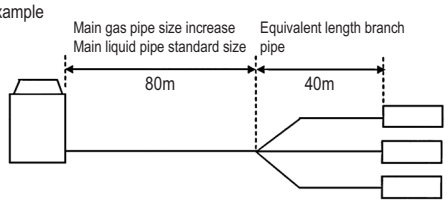
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length:

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. When cooling capacity is calculated: gas pipe size / When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

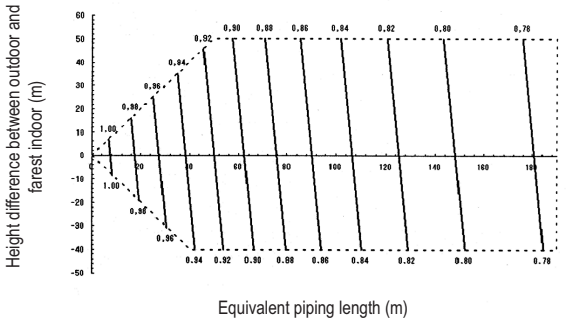
   The rate of change in: cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

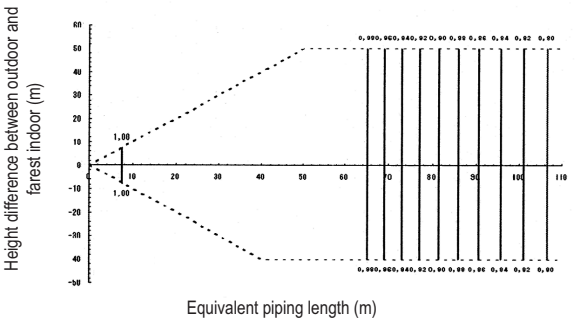
2 - 5 VRV®III heat pump high COP combination

RXYHQ22P9

Correction ratio for cooling capacity



Correction ratio for heating capacity



Diameter of the main pipes (standard size)

Model	Gas pipe	Liquid pipe
RXYHQ22P9	28.6	15.9

3TW31472-1A

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXYHQ22P9	31.8*	19.1

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

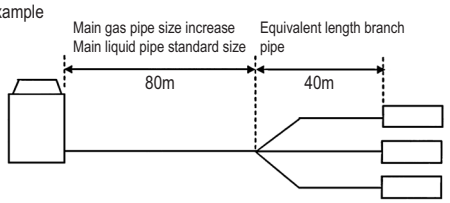
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length:

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table. [When cooling capacity is calculated: gas pipe size
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Cooling (gas pipe)	1.0	0.5
Heating (liquid pipe)	1.0	0.5

   Example



   In the above case (Cooling) Overall equivalent length = 80m x 0.5 + 40m = 80m
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

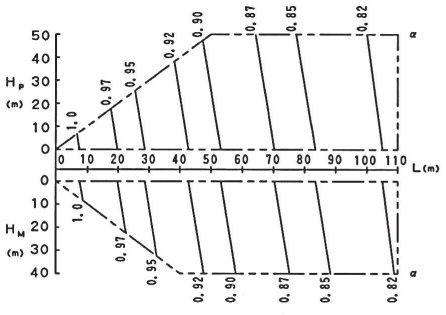
   The rate of change in: cooling capacity when height difference = 0 is thus approximately 0.88
   heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

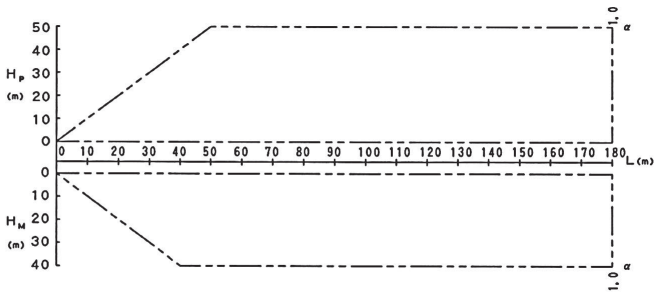
2 - 6 VRV®III-S

RXYSQ6P8V1

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



[Explanation of symbols]

Hp: Level difference (m) between indoor and outdoor units where indoor unit in inferior position
Hm: Level difference (m) between indoor and outdoor units where indoor unit in superior position
L: Equivalent pipe length (m)
α: Capacity correction factor

[Diameter of pipes]

Model	Gas	Liquid
RXYSQ6P8V1	ø 19.1	ø 9.5

3TW33642-4

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating cooling/heating capacity (max. capacity for combination with standard indoor unit)

   cooling / heating capacity = cooling / heating capacity obtained from performance characteristics table x each capacity rate of change

   In the case lenght of piping differs depending on the indoor unit, maximum capacity of aech unit during simultaneous operation is:

   cooling / heating capacity = cooling / heating capacity of each unit x capacity rate of change for each piping length

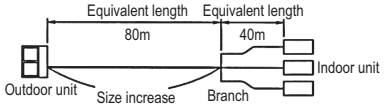
   <As for RXYMQ6MV4A - RXYSQ6M7V3B - RXYMQ6MVLT - RXYMQ6PV4A - RXYMQ6PVE - RXMQ6PVE - RXYSQ6P7V3B - RXYSQ6P7Y1B - RXYSQ6PA7V1B - RXYSQ6PA7Y1B - RXYSQ6P8V1B - RXYSQ6P8Y1B>
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Gas	Liquid
RXYSQ6P8V1B	ø 22.2	Not increased

5. When the main sections of the interunit gas pip diameters are increased the overall equivalent length should be calculated as follows.

   Overall equivalent length = Equivalent length to main pipe x 0,5 + Equivalent length after branching

   Example: RXYSQ6P8V1B



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp = 0m is thus approximately 0.86

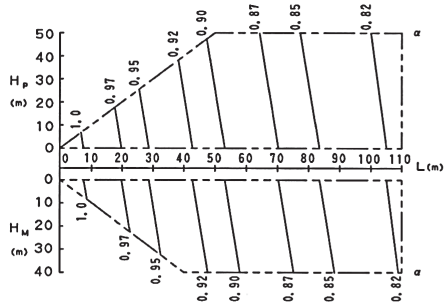
6. For RXYSQ: use these correction factors in case of VRV indoor unit.

2 Capacity correction ratio

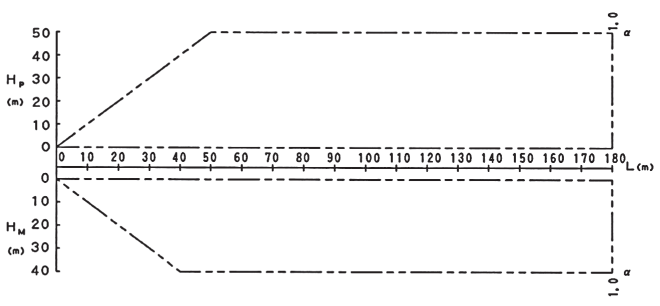
2 - 6 VRV®III-S

RXYSQ6P8Y1

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



[Explanation of symbols]

Hp: Level difference (m) between indoor and outdoor units where indoor unit in inferior position
Hm: Level difference (m) between indoor and outdoor units where indoor unit in superior position
L: Equivalent pipe length (m)
α: Capacity correction factor

[Diameter of pipes]

Model	Gas	Liquid
RXYSQ6P8Y1	ø 19.1	ø 9.5

3TW33642-4

NOTES

1. These figures illustrate the rate of change in capacity of a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.
2. With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.
3. Method of calculating cooling/heating capacity (max. capacity for combination with standard indoor unit)

   cooling / heating capacity = cooling / heating capacity obtained from performance characteristics table x each capacity rate of change

   In the case lenght of piping differs depending on the indoor unit, maximum capacity of aech unit during simultaneous operation is:

   cooling / heating capacity = cooling / heating capacity of each unit x capacity rate of change for each piping length

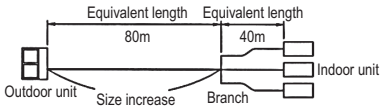
   <As for RXYMQ6MV4A - RXYSQ6M7V3B - RXYMQ6MVLT - RXYMQ6PV4A, RXMQ6PVE - RXMQ6VPE - RXYSQ6P7V3B - RXYSQ6P7Y1B - RXYSQ6PA7V1B - RXYSQPA7Y1B - RXYSQ6P8V1B - RXYSQ6P8Y1B>
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Gas	Liquid
RXYSQ6P8Y1B	ø 22.2	Not increased

5. When the main sections of the interunit gas pip diameters are increased the overall equivalent length should be calculated as follows.

   Overall equivalent length = Equivalent length to main pipe x 0,5 + Equivalent length after branching

   Example: RXYSQ6P8Y1B



   In the above case (Cooling)
   Overall equivalent length = 80m x 0.5 + 40m = 80m
   The correction factor in capacity when Hp = 0m is thus approximately 0.86

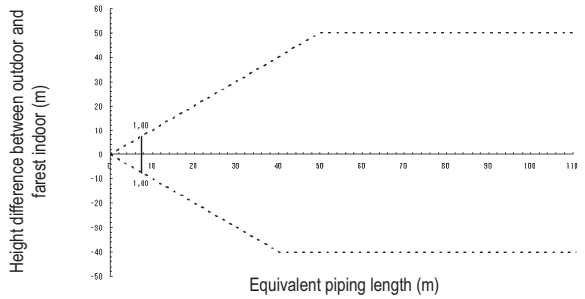
6. For RXYSQ: use these correction factors in case of vrv indoor unit.

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ8P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ8P9	19.1	9.5

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ8P9	22.2	12.7

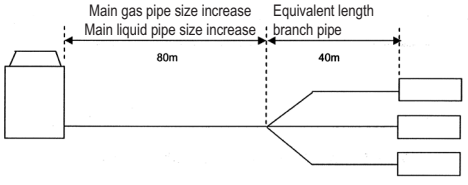
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

Choose the correction factor from the following table.
When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

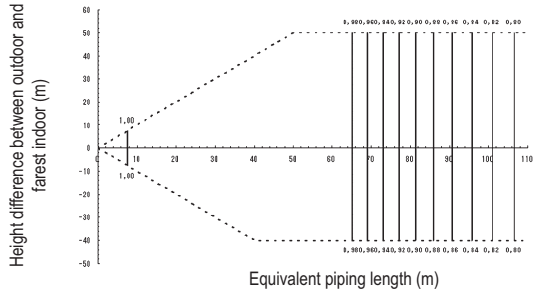
The rate of change in heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ10P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ10P9	22.2	9.5

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ10P9	25.4*	12.7

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

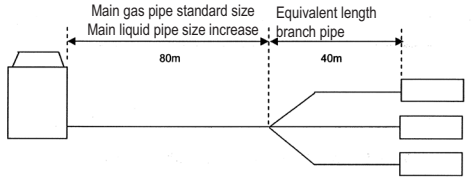
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

   (example)



   In the above case
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

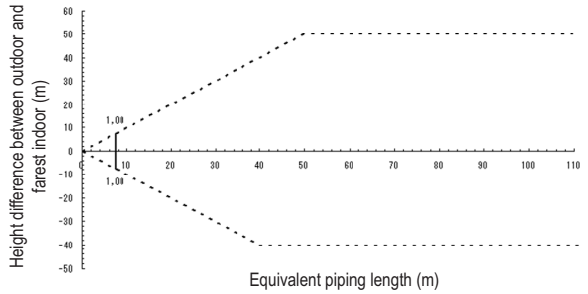
   The rate of change in heating capacity when height difference = 0 is thus approximately 0.90

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ12,14,24,36P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ12P9	28.6	12.7
RXHQ14P9	28.6	12.7
RXHQ24P9	34.9	15.9
RXHQ36P9	41.3	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ12P9	28.6	15.9
RXHQ14P9	28.6	15.9
RXHQ24P9	34.9	19.1
RXHQ36P9	41.3	22.2

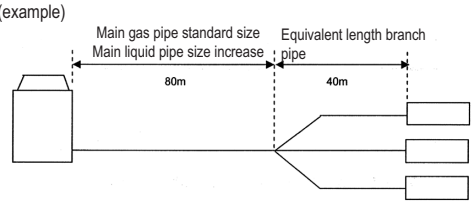
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Overall Equivalent length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

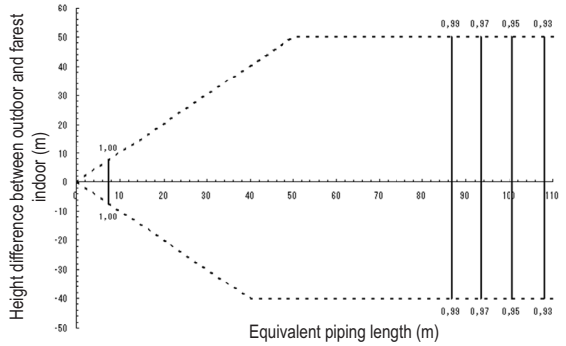
The rate of change in heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ16P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ16P9	28.6	12.7

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ16P9	31.8*	15.9

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

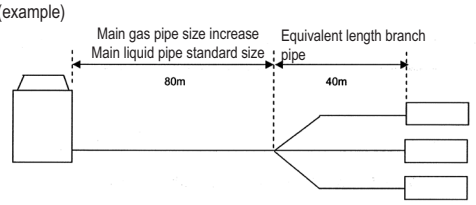
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

   (example)



   In the above case
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

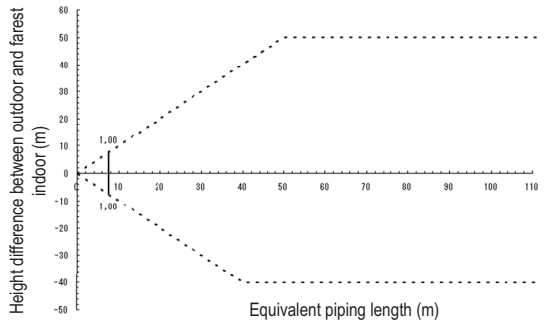
   The rate of change in heating capacity when height difference = 0 is thus approximately 0.99

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ20,32,34P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ20P9	28.6	15.9
RXHQ32-34P9	34.9	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ20P9	31.8*	19.1
RXHQ32-34P9	38.1*	22.2

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

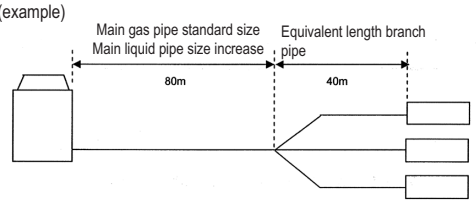
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

   (example)



   In the above case
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

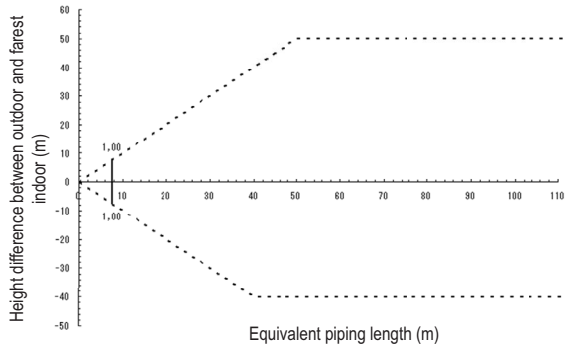
   The rate of change in heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ22P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ22P9	28.6	15.9

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ22P9	31.8*	19.1

   * If not available on site, do not increase. If not increased, no correction factor should be applied to the equivalent length (see note 6).

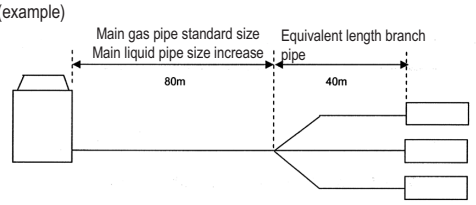
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Overall Equivalent length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

   (example)



   In the above case
   (Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

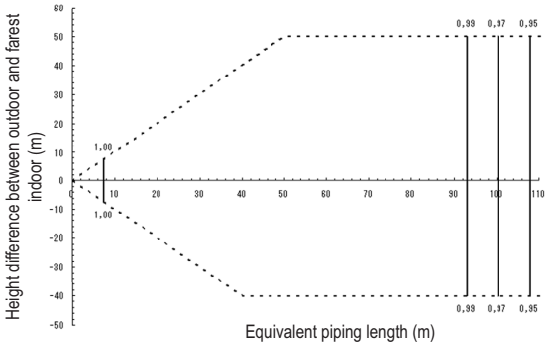
   The rate of change in heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ46P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ46P9	41.3	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ46P9	41.3	22.2

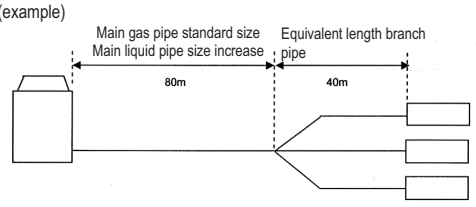
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

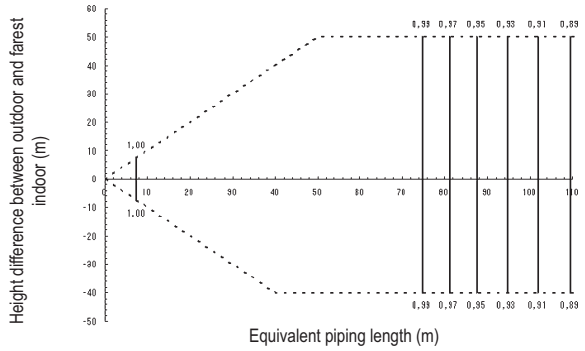
The rate of change in heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ48P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ48P9	41.3	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at 100% connection ratio
	x	Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

Maximum capacity of outdoor units	=	Capacity of outdoor units from capacity table at installed connection ratio
	x	Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ48P9	41.3	22.2

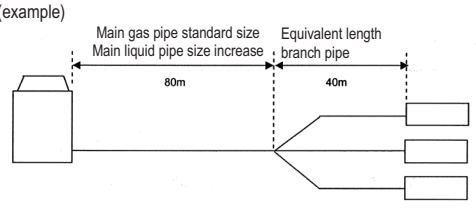
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

Choose the correction factor from the following table.
When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

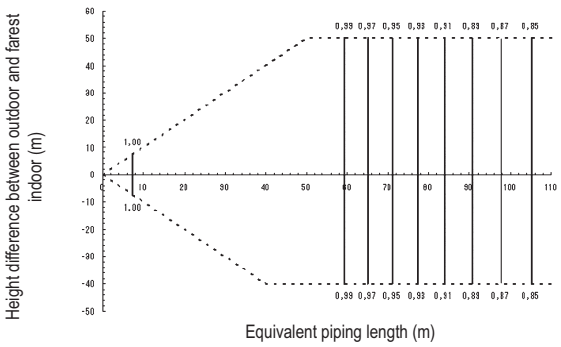
The rate of change in heating capacity when height difference = 0 is thus approximately 0.97

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ50P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ50P9	41.3	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ50P9	41.3	22.2

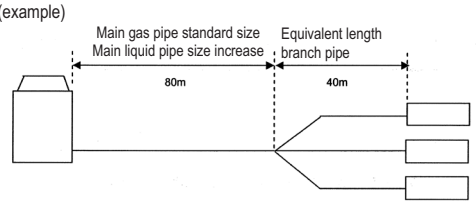
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

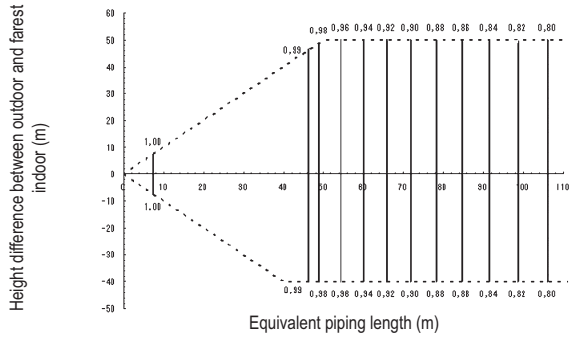
The rate of change in heating capacity when height difference = 0 is thus approximately 0.92

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ52P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ52P9	41.3	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor connection ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ52P9	41.3	22.2

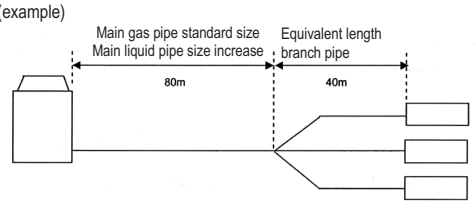
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = Equivalent length of main pipe x Correction factor + Equivalent length of branch pipes

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

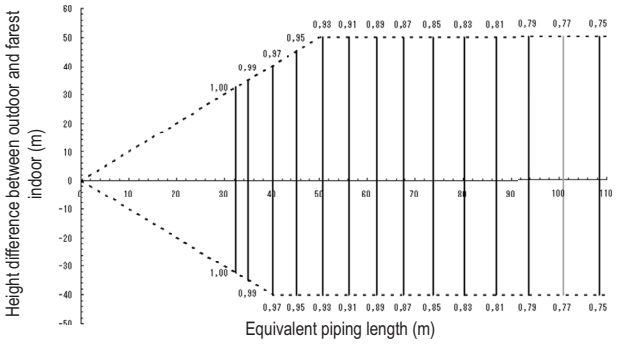
The rate of change in heating capacity when height difference = 0 is thus approximately 0.88

2 Capacity correction ratio

2 - 7 VRV®III heating only

RXHQ54P9

Correction ratio for heating capacity



[Diameter of the main pipes (standard size)]

Model	Gas pipe	Liquid pipe
RXHQ54P9	41.3	19.1

3TW33762-3

NOTES

1. These figures illustrate the correction ratio for piping length in capacity for a standard indoor unit system at maximum load (with the thermostat set to maximum) under standard conditions. Moreover, under partial load conditions, there is only a minor deviation for the capacity correction ratio, shown in the above figures.
2. With this outdoor unit, constant evaporating pressure control when cooling and constant condensing pressure control when heating is carried out.
3. Method of calculating the capacity of the outdoor units:
   The maximum capacity of the system will be either the total capacity of the indoor units or the maximum capacity of the outdoor units as mentioned below, whichever is smaller.
   - Condition: Indoor unit combination ratio does not exceed 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at 100% connection ratio
   x Correction ratio of piping to farest indoor

   - Condition: Indoor unit connection ratio exceeds 100%.

   Maximum capacity of outdoor units = Capacity of outdoor units from capacity table at installed connection ratio
   x Correction ratio of piping to farest indoor

4. When level difference is 50m or more and equivalent pipe length is 90m or more, the diameter of the main gas and liquid pipes (outdoor unit - branch sections) must be increased. For new diameters, see below.

Model	Gas pipe	Liquid pipe
RXHQ54P9	41.3	22.2

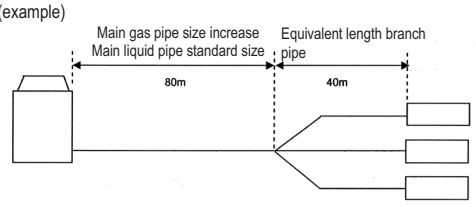
5. When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
6. Equivalent length used in the above figures is based upon the following equivalent length.

   Equivalent piping length = (Equivalent length of main pipe) x Correction factor + (Equivalent length of branch pipes)

   Choose the correction factor from the following table.
   When heating capacity is calculated: liquid pipe size

	Correction factor	
	Standard size	Size increase
Heating (liquid pipe)	1.0	0.5

(example)



In the above case
(Heating) Overall equivalent length = 80m x 0.5 + 40m = 80m

The rate of change in heating capacity when height difference = 0 is thus approximately 0.83

3 Integrated heating capacity coefficient

REYQ-P8/P9

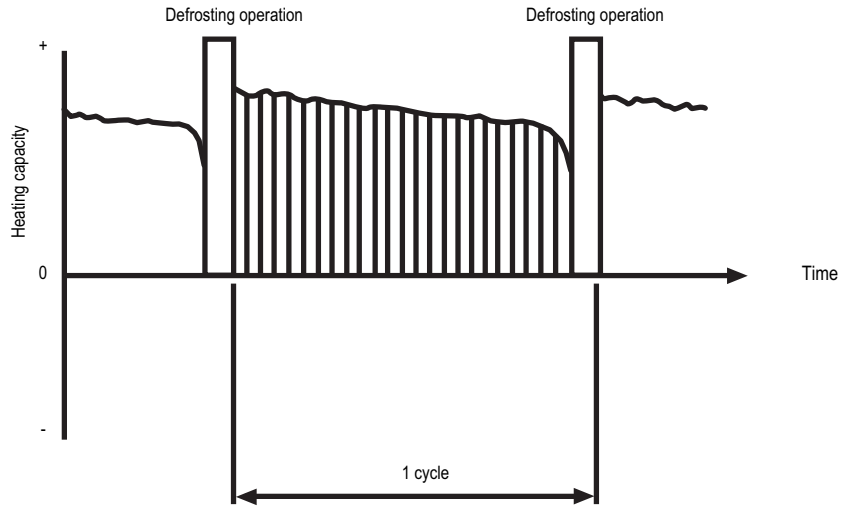
INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress. The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:
Integrated heating capacity = A
Value given in table of capacity characteristics = B
Integrated correction factor for frost accumulation (kW) = C
A = B x C

Correction factor for finding integrated heating capacity

Inlet port temperature of heat exchanger (°C/RH 85%)		-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	REYQ8,10,12P	0.97	0.95	0.90	0.86	0.87	0.92	1.0
	REYQ14,16P	0.96	0.94	0.89	0.85	0.86	0.91	1.0
	REYQ18-32P	0.99	0.97	0.92	0.88	0.89	0.94	1.0
	REYQ34-48P	0.98	0.96	0.91	0.87	0.88	0.93	1.0



3TW30322-3A

NOTE

1 The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.

Please note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative humidity (RH) and the amount of frosting which occurs.

3 Integrated heating capacity coefficient

REYHQ-P

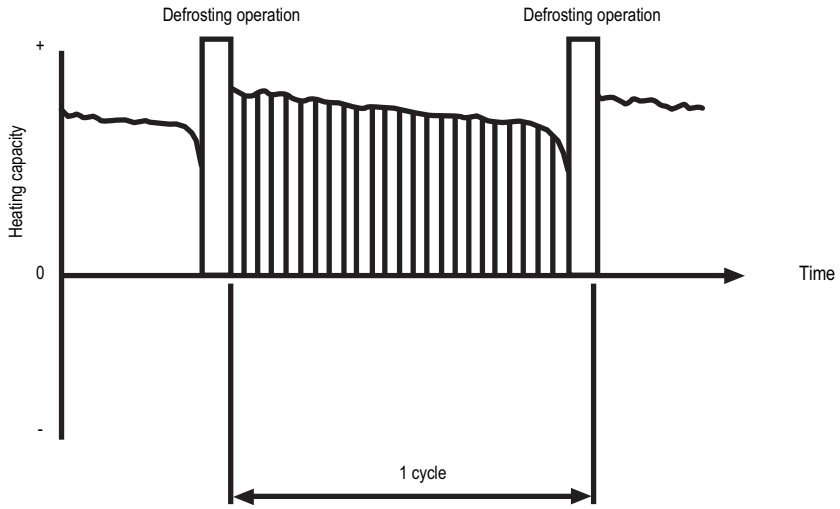
INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress. The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:
Integrated heating capacity = A
Value given in table of capacity characteristics = B
Integrated correction factor for frost accumulation (kW) = C
A = B x C

Correction factor for finding integrated heating capacity

Inlet port temperature of heat exchanger (°C/RH 85%)		-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	REYHQ16,20-24P	0.99	0.97	0.92	0.88	0.89	0.94	1.0



3TW30322-3A

NOTE

1 The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.

Please note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative humidity (RH) and the amount of frosting which occurs.

3 Integrated heating capacity coefficient

RXYQ5-54P(8)

INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress. The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:

Integrated heating capacity = A

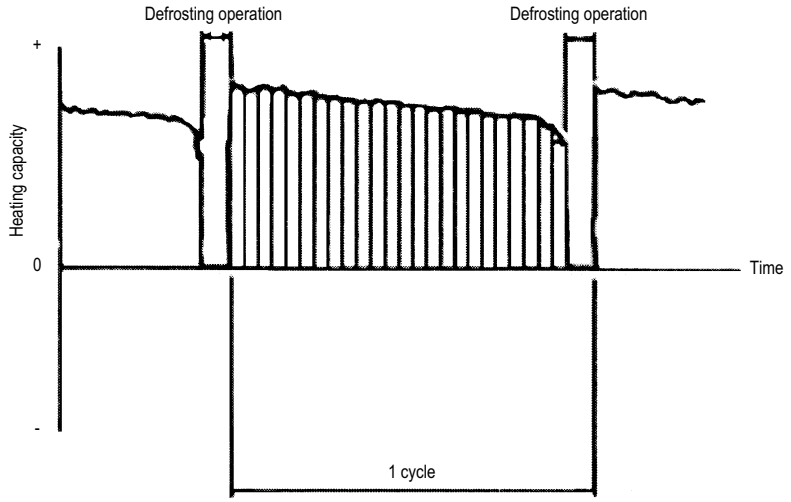
Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

A = B x C

Correction factor for finding integrated heating capacity

Inlet port temperature of heat exchanger (°C/RH 85%)	-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	0.96	0.93	0.87	0.81	0.83	0.89	1.0



3TW27232-7

NOTE

1 The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.

Please note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative humidity (RH) and the amount of frosting which occurs.

3 Integrated heating capacity coefficient

RXYHQ12-36P8

INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress. The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:

Integrated heating capacity = A

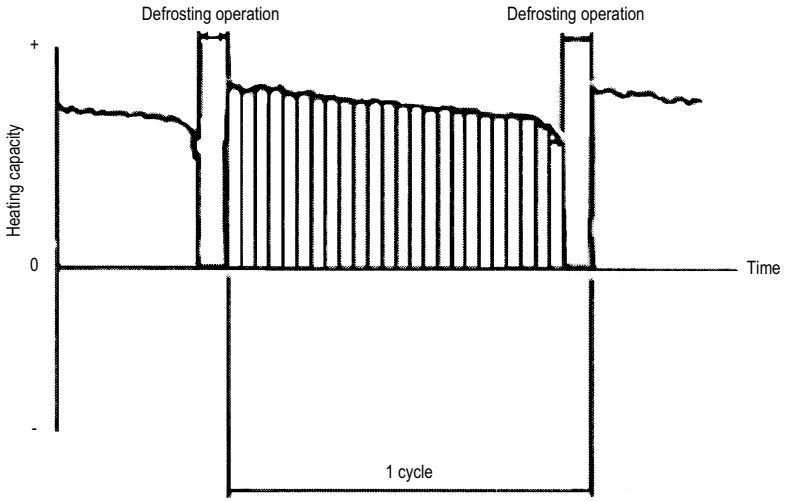
Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

A = B x C

Correction factor for finding integrated heating capacity

Inlet port temperature of heat exchanger (°C/RH 85%)	-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	0.96	0.93	0.87	0.81	0.83	0.89	1.0



3TW27232-7

NOTE

1 The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.

Please note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative humidity (RH) and the amount of frosting which occurs.

3 Integrated heating capacity coefficient

RXYSQ4,5,6PAV/PAY

INTEGRATED HEATING CAPACITY COEFFICIENT

The heating capacity tables do not take account of the reduction in capacity, when frost has accumulated or while the defrosting operation is in progress. The capacity values, which take these factors into account, in other words, the integrated heating capacity values, can be calculated as follows:

Formula:

Integrated heating capacity = A

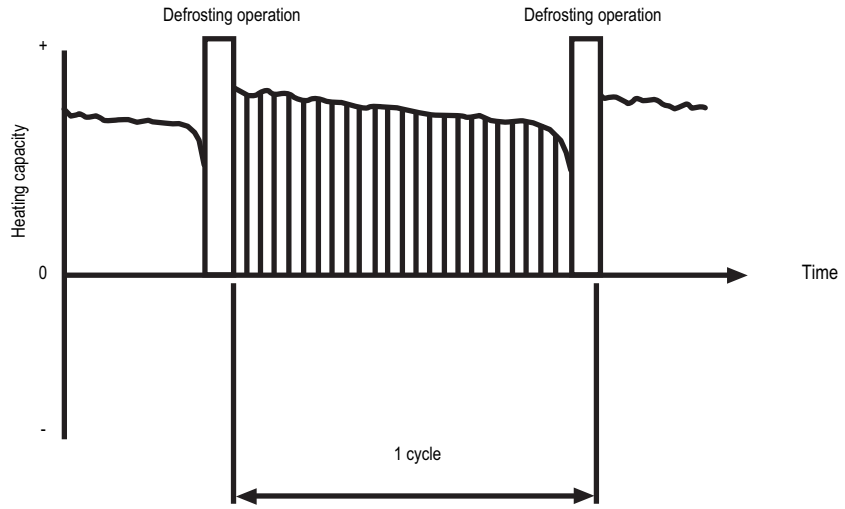
Value given in table of capacity characteristics = B

Integrated correction factor for frost accumulation (kW) = C

A = B x C

Correction factor for finding integrated heating capacity

Inlet port temperature of heat exchanger (°C/RH 85%)	-7	-5	-3	0	3	5	7
Integrating correction factor for frost accumulation	0.88	0.86	0.8	0.75	0.76	0.82	1.0



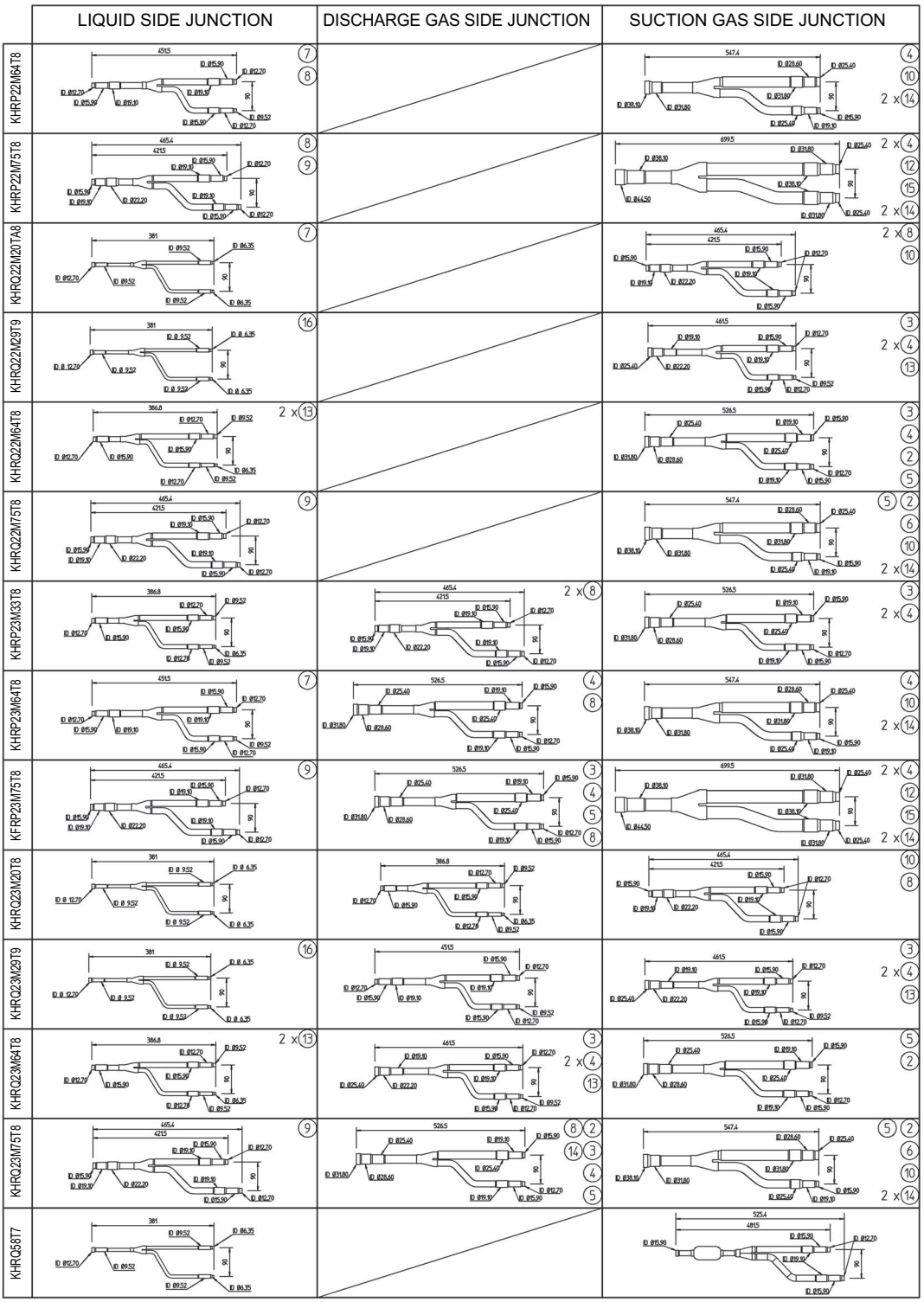
3TW30402-1

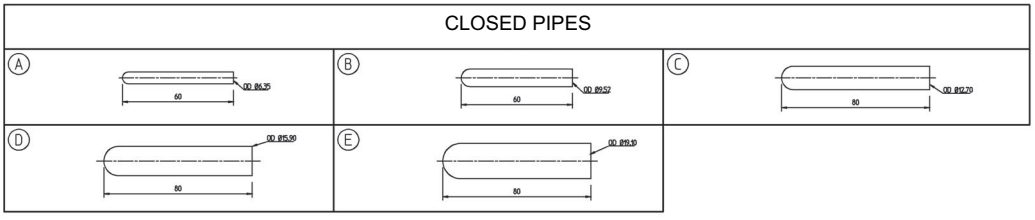
NOTE

1 The figure shows that the integrated heating capacity expresses the integrated capacity for a single cycle (from defrost operation to defrost operation) in terms or time.

Please note that, when there is an accumulation of snow against the outside surface of the outdoor unit heat exchanger, there will always be a temporary reduction in capacity, although this will of course vary in degree in accordance with a number of other factors, such as the outdoor temperature (°CDB), relative humidity (RH) and the amount of frosting which occurs.

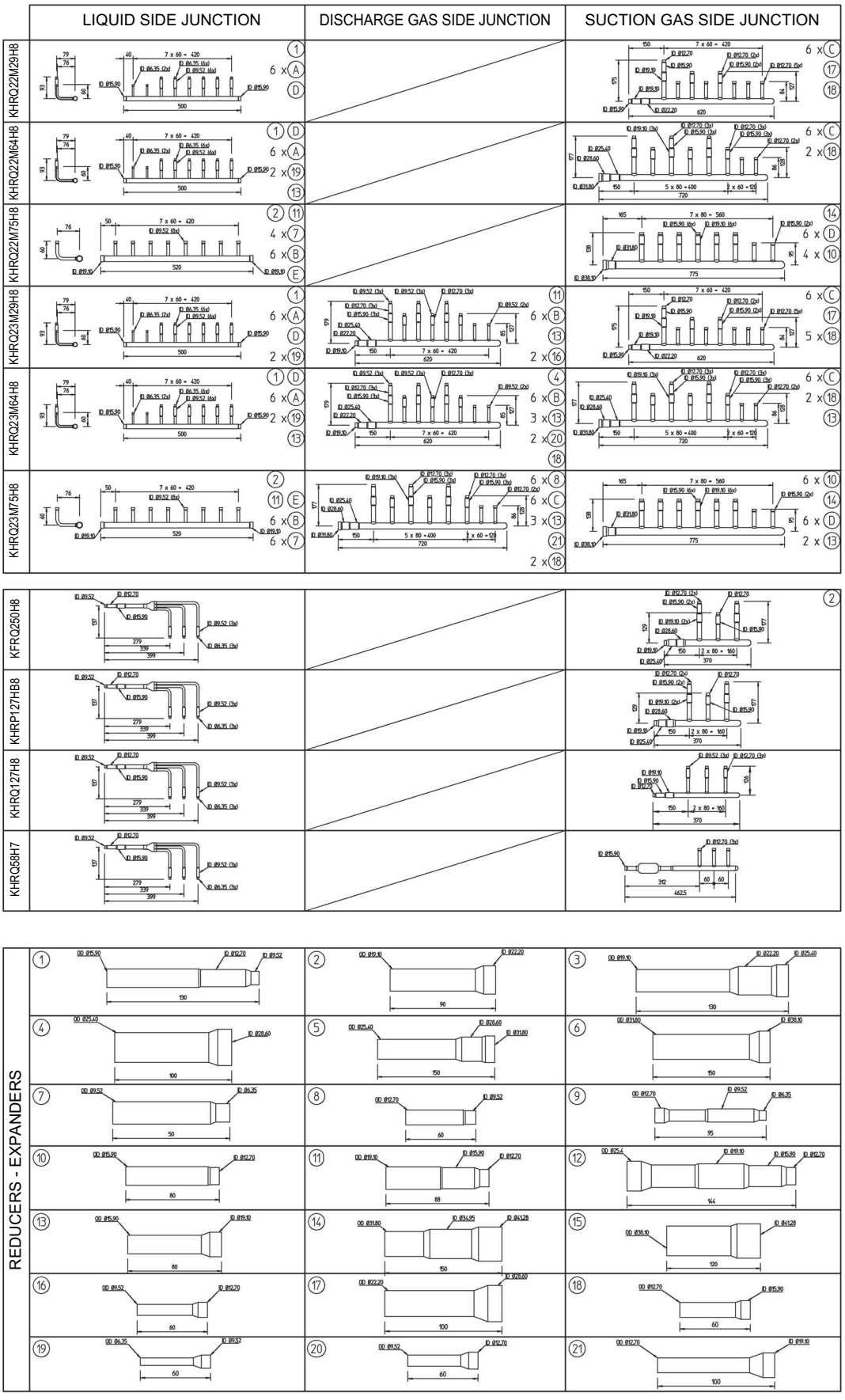
4 Refnet pipe systems





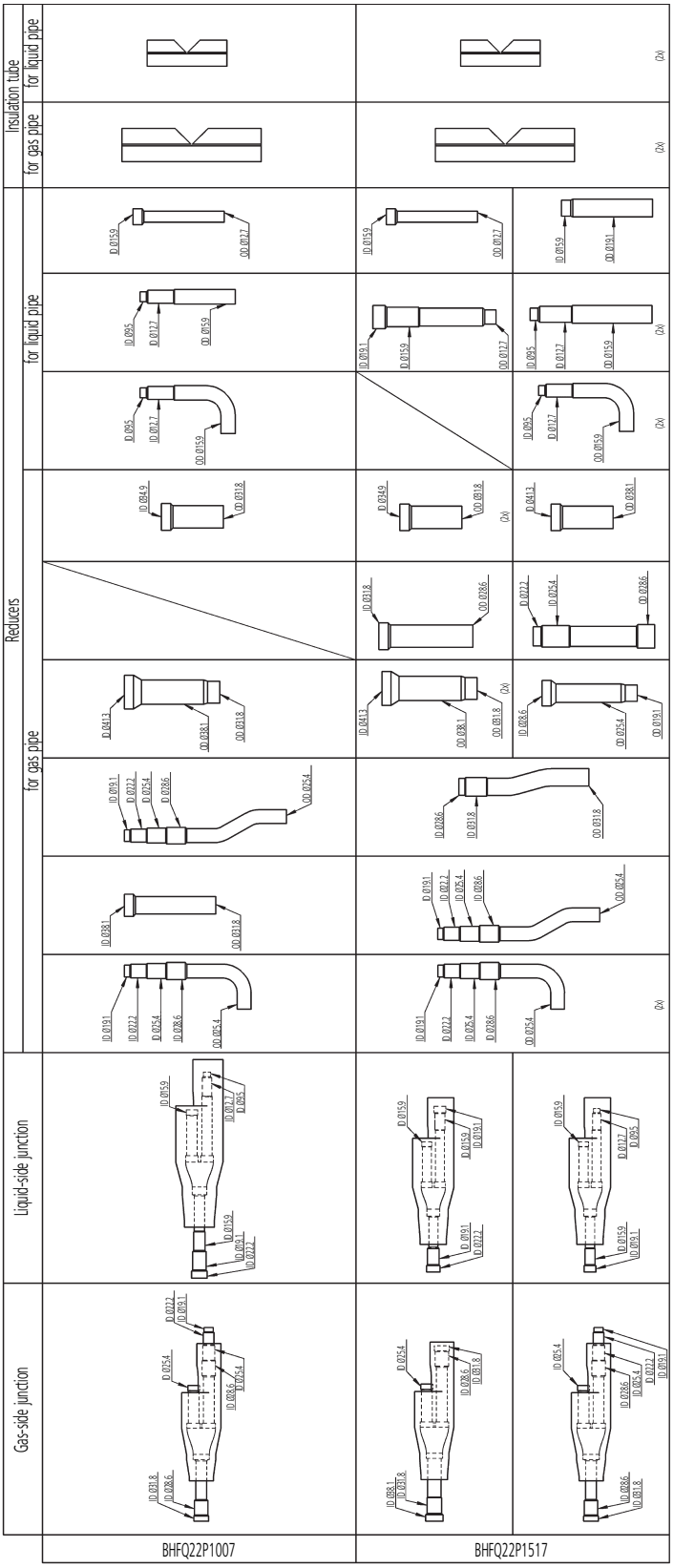
1TW25799-4D

4 Refnet pipe systems



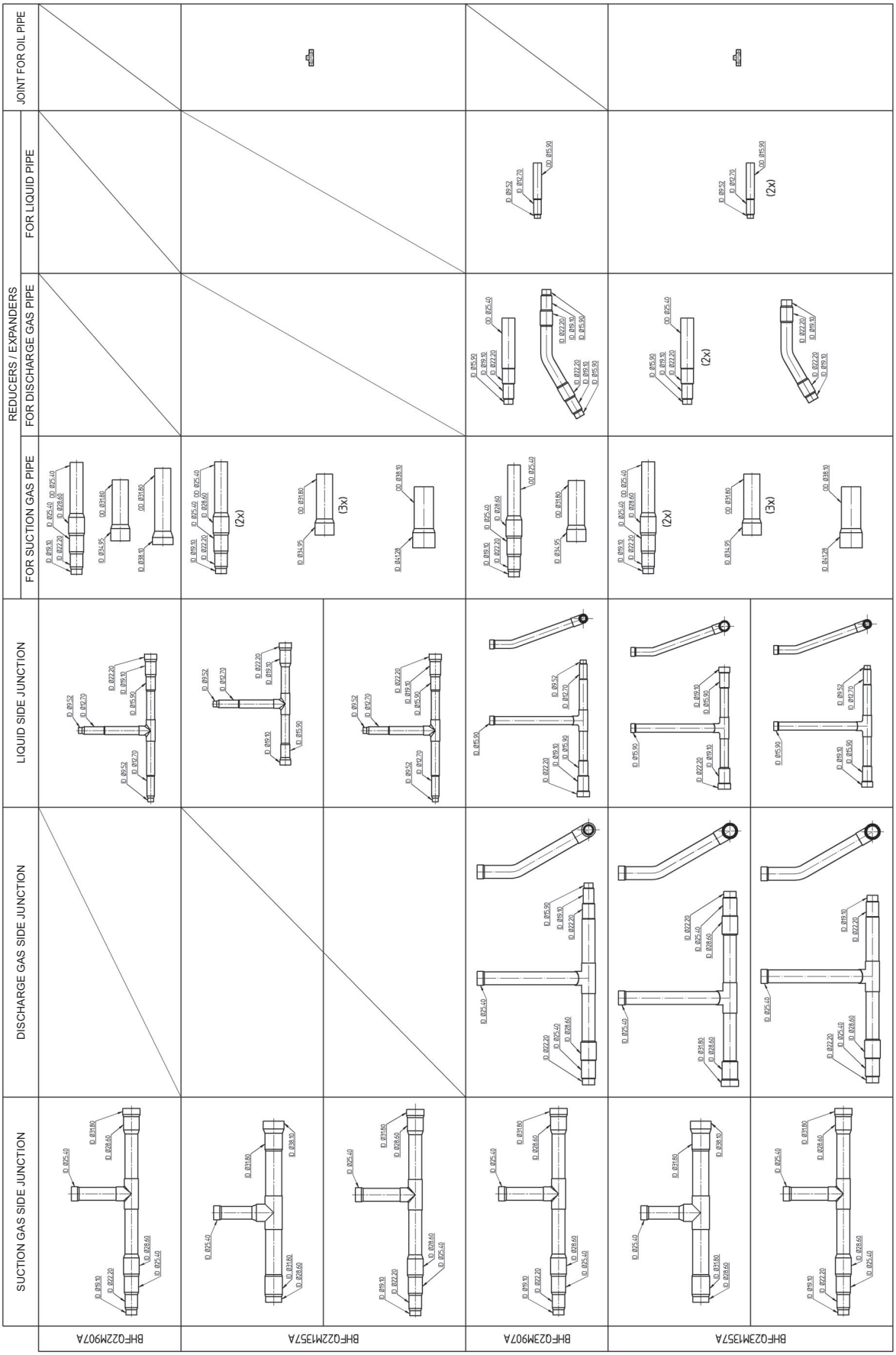
1TW25799-4D

4 Refnet pipe systems



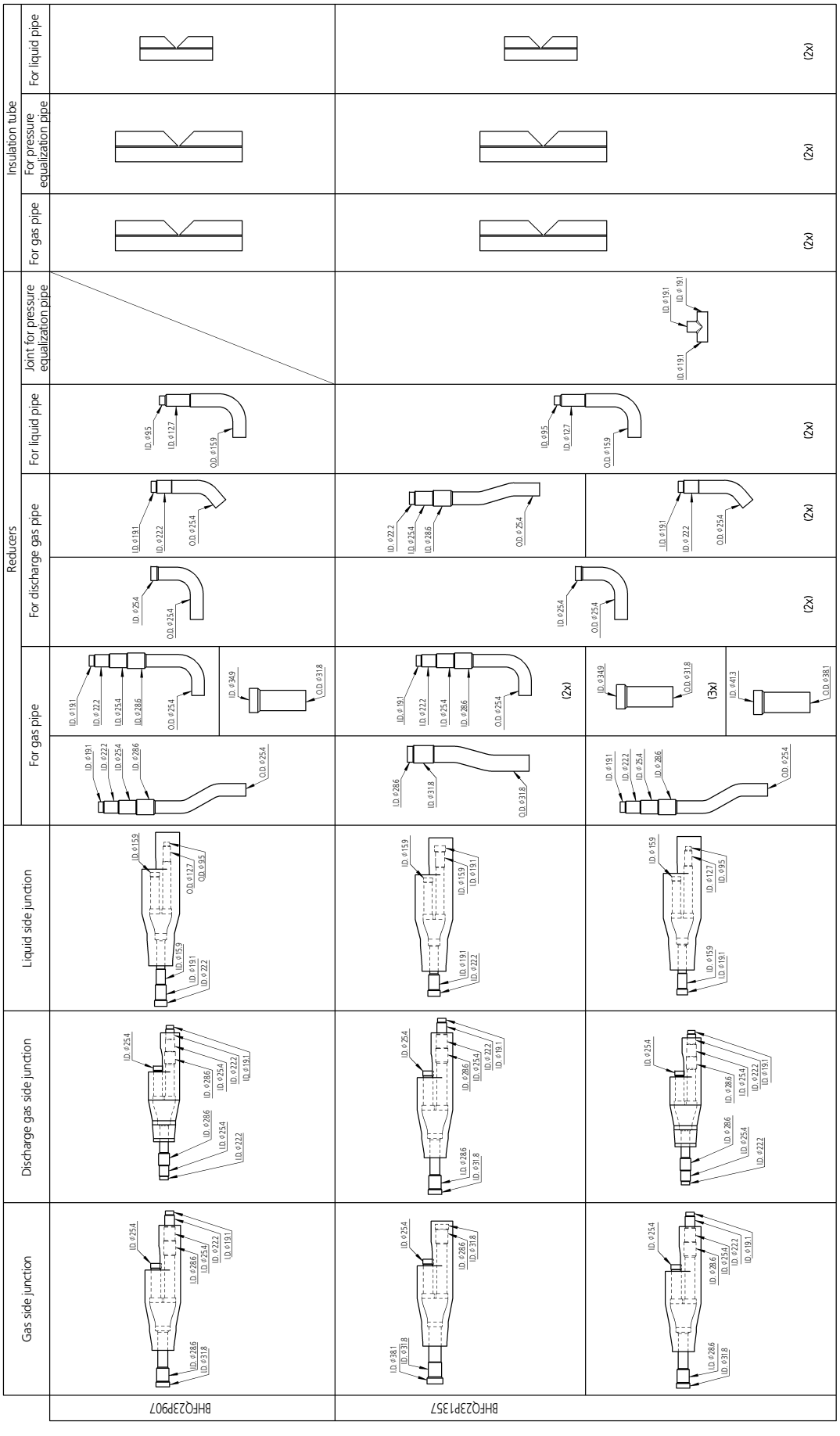
2TW27239-1

4 Refnet pipe systems

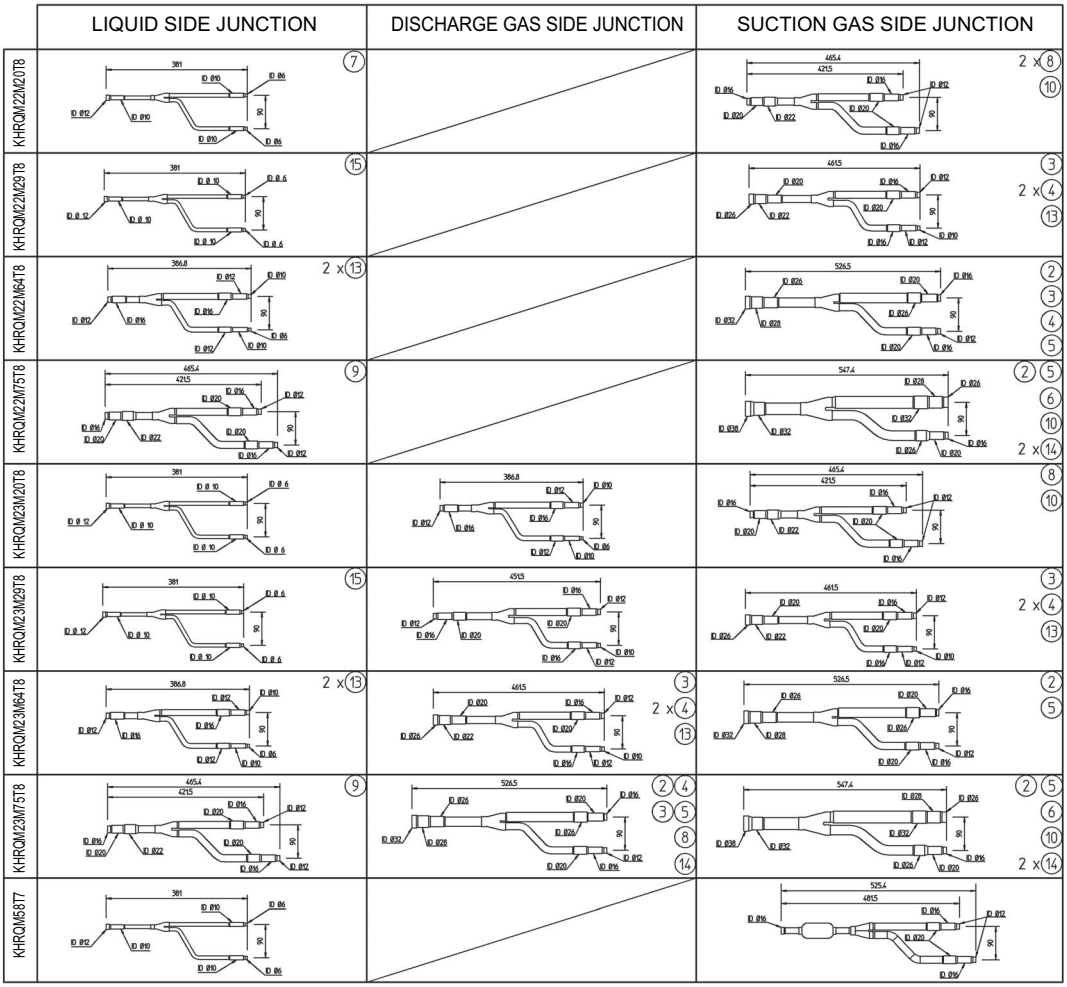


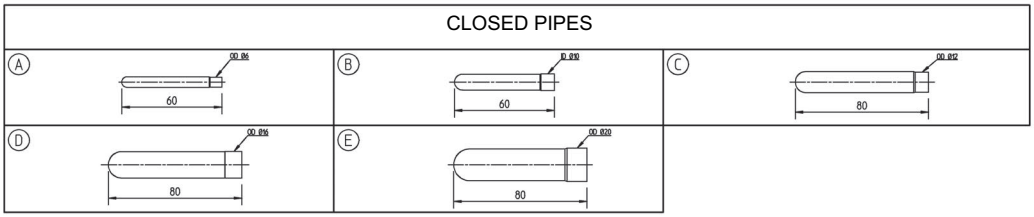
2TW25799-6

4 Refnet pipe systems



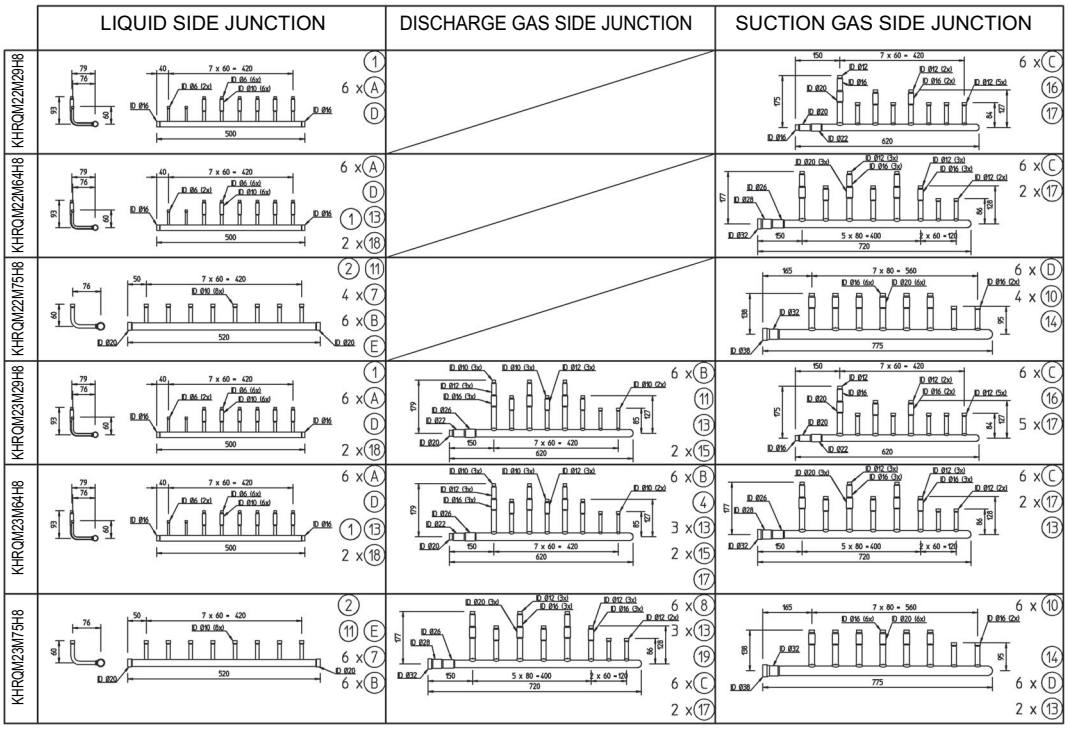
4 Refnet pipe systems

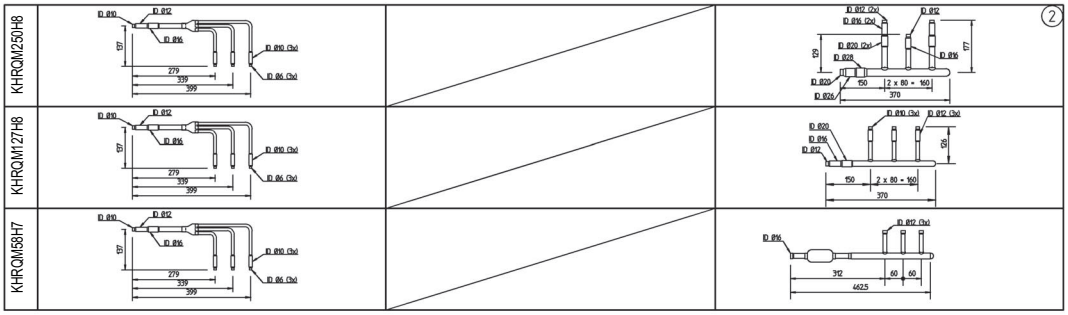


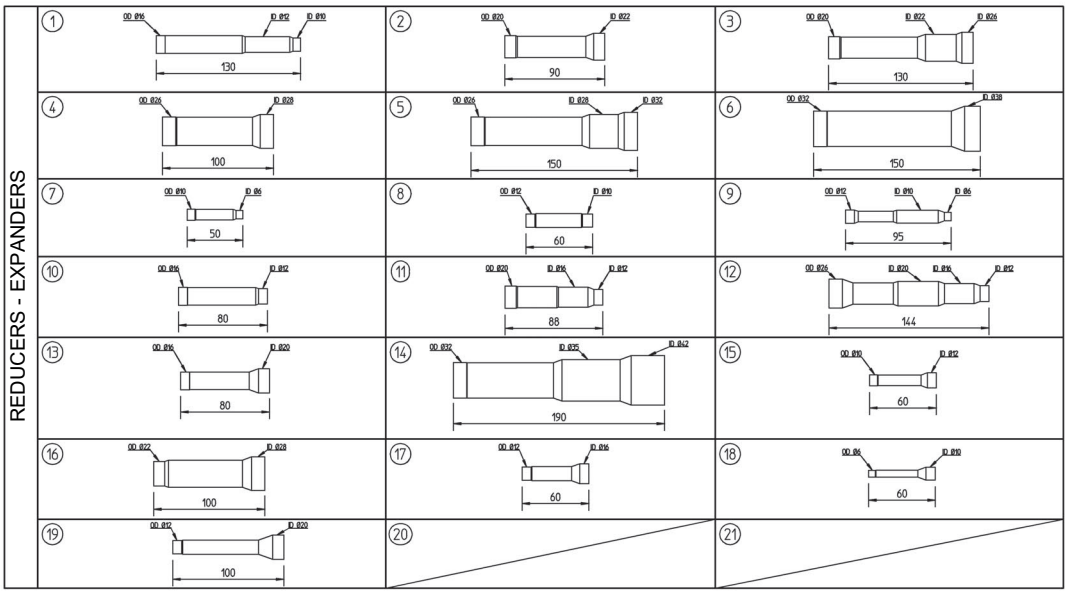


1TW29479-1A

4 Refnet pipe systems

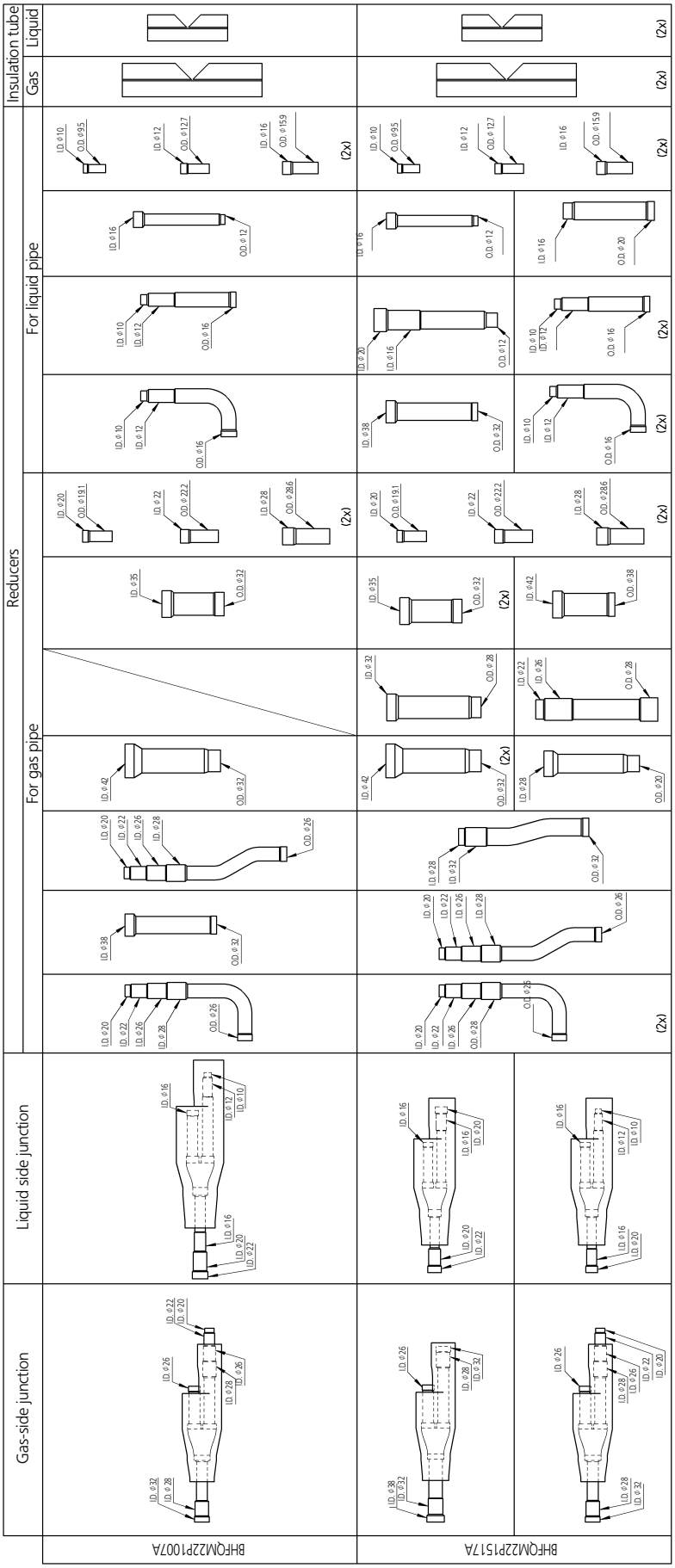






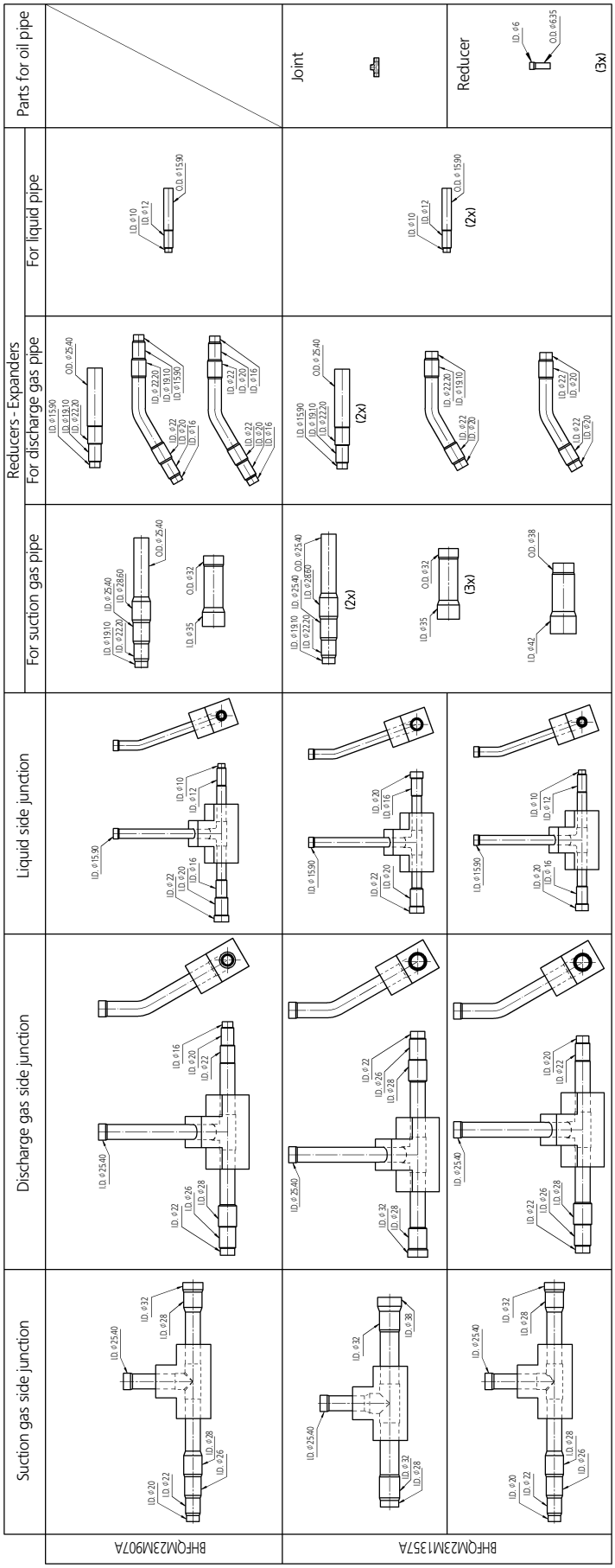
1TW29479-1A

4 Refnet pipe systems



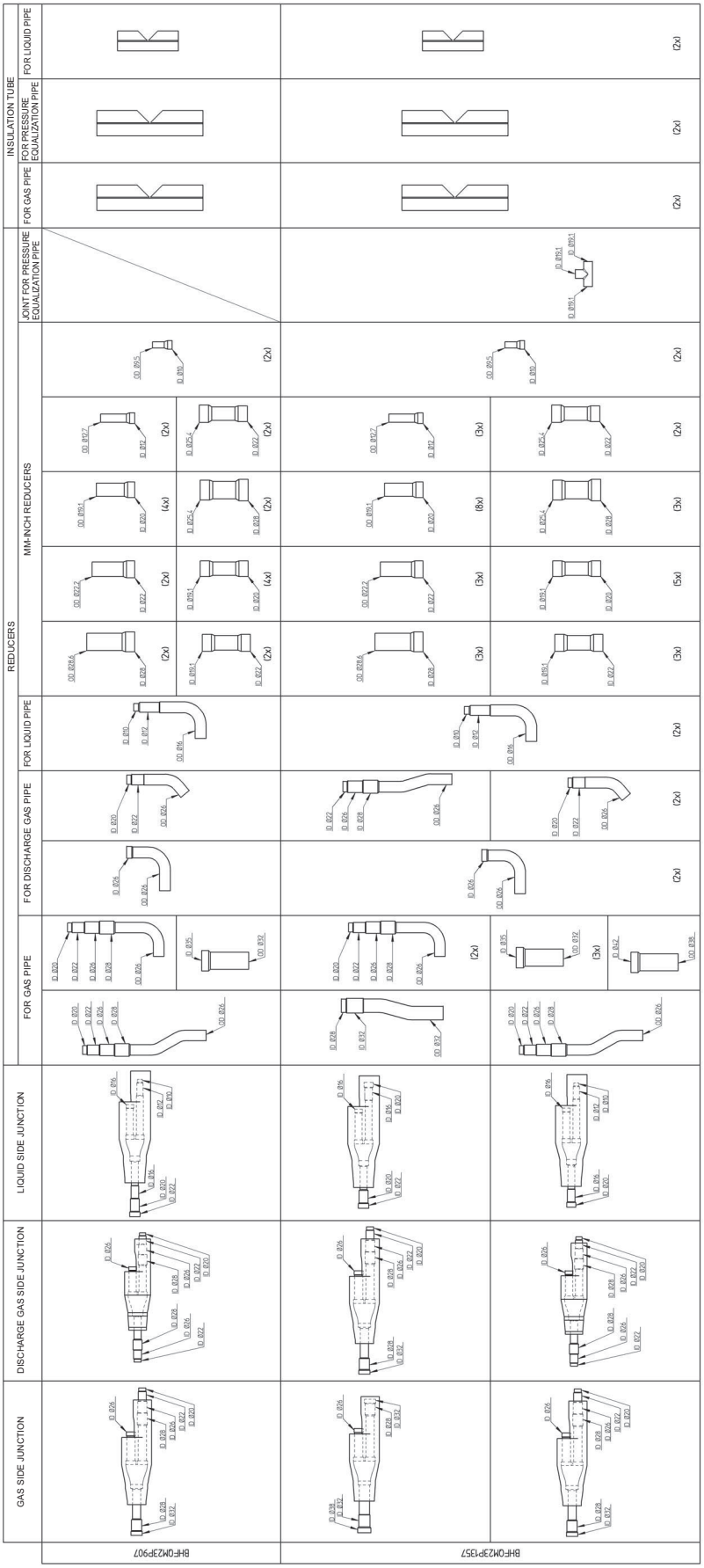
2TW29659-1

4 Refnet pipe systems



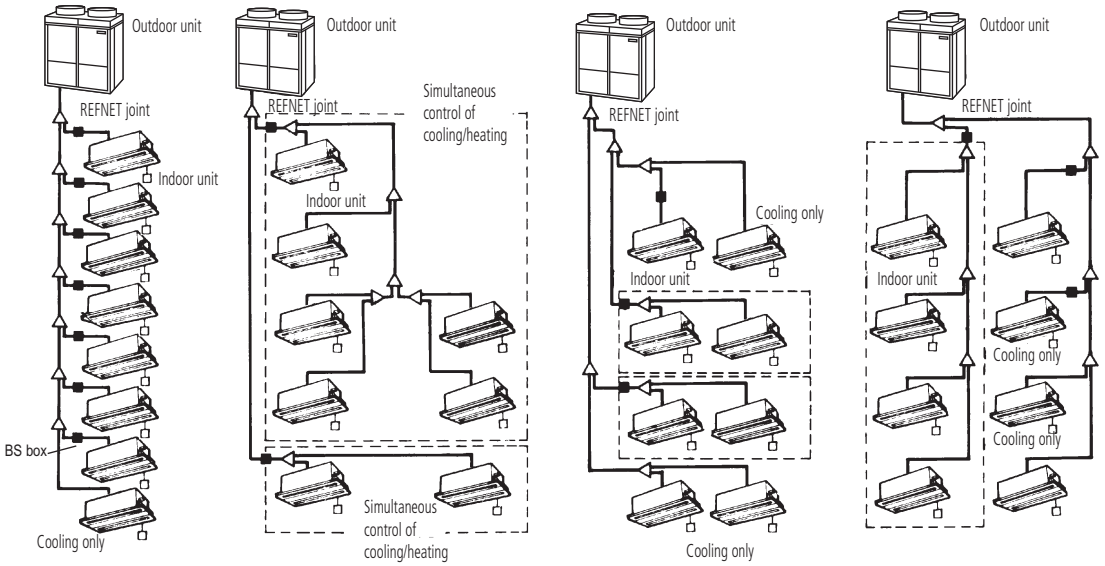
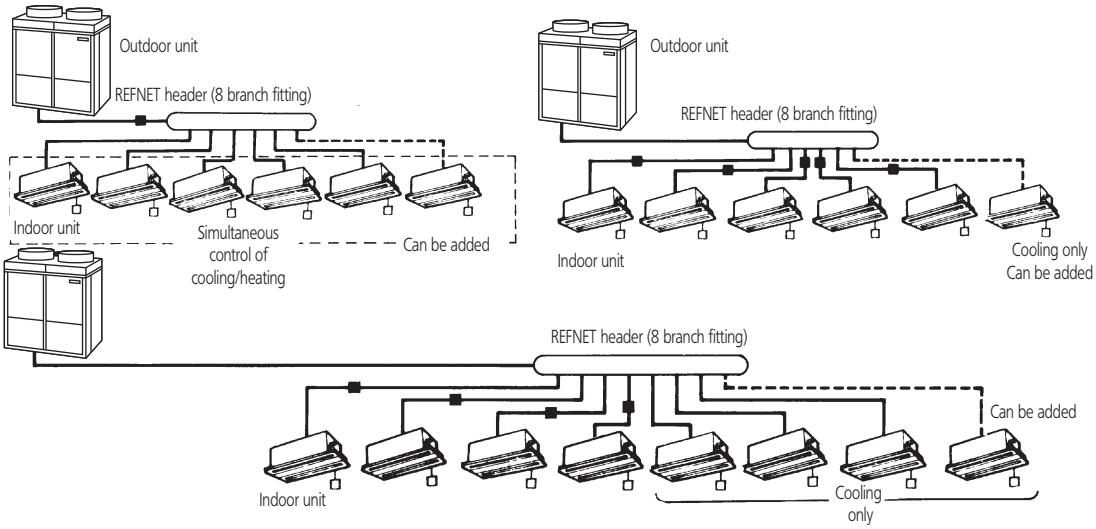
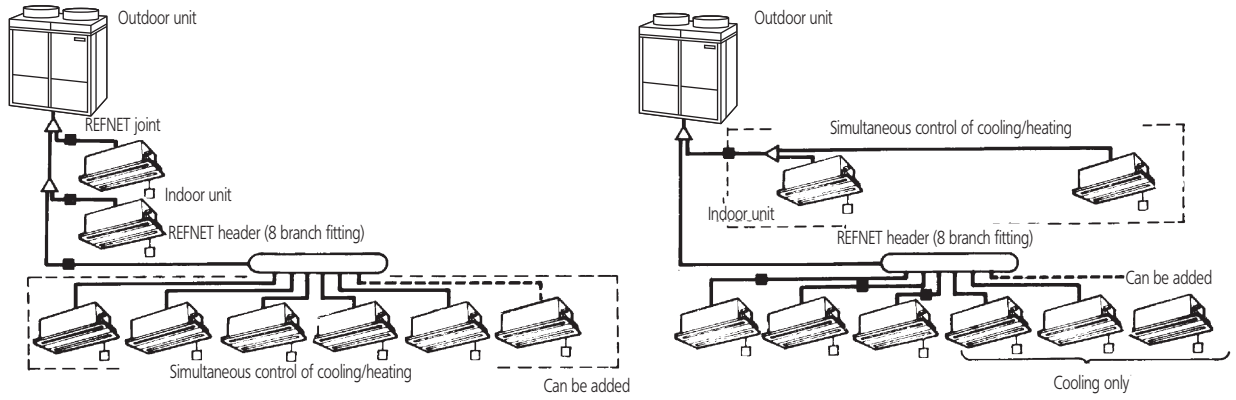
2TW29679-1

4 Refnet pipe systems



1TW29119-2

5 Example of Refnet piping layouts

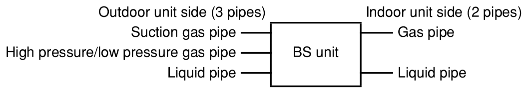
Type of fitting	Sample systems
Distribution by REFNET joints	
Distribution by REFNET header	
Distribution by REFNET joints and headers	

6 Refrigerant pipe selection

6 - 1 VRV®III heat recovery small footprint combination

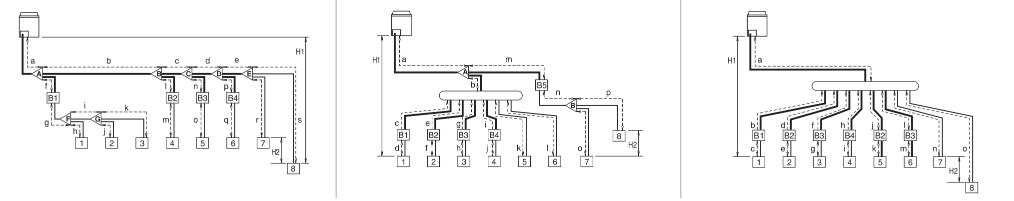
REYQ8,12P9, REYQ10,14,16P8

Example of connection
(Connection of 8 indoor units)



Single outdoor unit system (REYQ8~16)

Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header



1 indoor unit — A refnet joint — refnet header — Outdoor unit side (3 pipes) — Indoor unit side (2 pipes)

			Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
Maximum allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor and indoor units ≤165 m		
			[Example] unit 8: a+b+c+d+e+s≤165 m	[Example] unit 6: a+b+l≤165 m, unit 8: a+m+n+p≤165 m	[Example] unit 8: a+o≤165 m
		Equivalent length	Equivalent pipe length between outdoor and indoor units ≤190 m (Assume equivalent pipe length of the refnet joint to be 0.5 m, of the refnet header to be 1.0 m, of the BSVQ100 and BSVQ160 to be 4 m and of the BSVQ250 to be 6 m (for calculation purposes)) (See note 1 on next page)		
		Total extension length	Total piping length from outdoor to all indoor units ≤1000 m		
Allowable height difference	Between outdoor and indoor units		Difference in height between outdoor and indoor units (H1)≤50 m (≤40 m if outdoor unit is located in a lower position).		
	Between indoor and indoor units		Difference in height between adjacent indoor units (H2)≤15 m		
Allowable length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤40 m (See note 2 on next page)		
			[Example] unit 8: b+c+d+e+s≤40 m	[Example] unit 6: b+l≤40 m, unit 8: m+n+p≤40 m	[Example] unit 8: o≤40 m

Refrigerant branch kit selection

⚠ Refrigerant branch kits can only be used with R410A.

How to select the refnet joint
When using refnet joints at the first branch counted from the outdoor unit side, choose from the following table in accordance with the capacity of the outdoor unit (example: refnet joint A).

Outdoor unit capacity type (Hp)	Refrigerant branch kit name
8+10	KHRQ23M29T9
12~16	KHRQ23M64T

For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index of all indoor units connected after the refrigerant branch.

Indoor capacity type	Refrigerant branch kit name	
	3 pipes	2 pipes
<200	KHRQ23M20T	KHRQ22M20T
200≤x<290	KHRQ23M29T9	KHRQ22M29T
290≤x<640	KHRQ23M64T	KHRQ22M64T
≥640	KHRQ23M75T	KHRQ22M75T

How to select the refnet header
Choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.
Note: 250 type indoor unit can not be connected lower than the refnet header.

Indoor capacity type	Refrigerant branch kit name	
	3 pipes	2 pipes
<200	KHRQ23M29H	KHRQ22M29H
200≤x<290	KHRQ23M29H	KHRQ22M29H
290≤x<640	KHRQ23M64H	KHRQ22M64H
≥640	KHRQ23M75H	KHRQ22M75H

Example of downstream indoor units	Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
	[Example] in case of refnet joint C: indoor units 5+6+7+8	[Example] in case of refnet joint G: indoor units 7+8, in case of refnet header: indoor units 1+2+3+4+5+6	[Example] in case of refnet header: indoor units 1+2+3+4+5+6+7+8

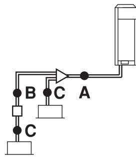
4PW48462-1A

6 Refrigerant pipe selection

6 - 1 VRV®III heat recovery small footprint combination

REYQ8,12P9, REYQ10,14,16P8

Pipe size selection
For an outdoor unit, select the pipe size in accordance with the following figure.



A. Piping between outdoor unit and refrigerant branch kit
Choose from the following table in accordance with the outdoor unit total capacity type, connected downstream.

Outdoor unit capacity type (Hp)	Piping outer diameter size (mm)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
8	19.1	15.9	9.5
10	22.2	19.1	9.5
12	28.6	19.1	12.7
14+16	28.6	22.2	12.7

B. Piping between refrigerant branch kit and BS unit
Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.
Choose from the following table in accordance with the indoor unit total capacity type, connected downstream.

Indoor unit capacity type	Piping outer diameter size (mm)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
<150	15.9	12.7	9.5
150≤x<200	19.1	15.9	9.5
200≤x<290	22.2	19.1	9.5
290≤x<420	28.6	19.1	12.7
420≤x<640	28.6	28.6	15.9
640≤x<920	34.9	28.6	19.1
≥920	41.3	28.6	19.1

C. Piping between refrigerant branch kit or BS unit and indoor unit
Choose from the following table in accordance with the capacity type of the connected indoor unit.

Indoor unit capacity type	Piping outer diameter size (mm)	
	Suction gas pipe	Liquid pipe
20, 25, 32, 40, 50	12.7	6.4
63, 80, 100, 125	15.9	9.5
200	19.1	9.5
250	22.2	9.5

How to calculate the additional refrigerant to be charged
Additional refrigerant to be charged R (kg)
R should be rounded off in units of 0.1 kg

$$\mathbf{R} = \left[\begin{array}{l}(X_1 \times \mathbf{Ø22.2}) \times 0.37] + [(X_2 \times \mathbf{Ø19.1}) \times 0.26] + [(X_3 \times \mathbf{Ø15.9}) \times 0.18] + \\ [(X_4 \times \mathbf{Ø12.7}) \times 0.12] + [(X_5 \times \mathbf{Ø9.5}) \times 0.059] + [(X_6 \times \mathbf{Ø6.4}) \times 0.022]\end{array}\right] \times 1.02 + 3.6 + \mathbf{A}$$

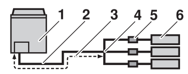
A	
>100% ≤130%	0.5 kg

$\mathbf{X}_{1...6}$ = Total length (m) of liquid piping size at **Øa**
A = Weight according to table A in function of indoor unit connection ratio

Note 1

When the equivalent pipe length between outdoor and indoor units is 90 m or more, the size of the main liquid pipe must be increased. Never increase suction gas pipe and HP/LP gas pipe sizes.
Depending on the length of the piping, the capacity may drop, but even in such a case it is possible to increase the size of the main liquid pipe.

Hp	Ø
8+10	9.5 → 12.7
12~16	12.7 → 15.9



1 Outdoor unit
2 Main pipes
3 Increase only liquid pipe size
4 First refrigerant branch kit
5 BS unit
6 Indoor unit

Note 2

Allowable length after the first refrigerant branch kit to indoor units is 40 m or less, however it can be extended up to 90 m if all the following conditions are fulfilled.

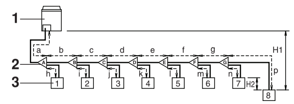
Required conditions	Example drawings	
It is necessary to increase the pipe size of the liquid and suction gas pipe if the pipe length between the first and the final branch kit is over 40 m (reducers must be procured on site). Increasing the HP/LP gas pipe size is not allowed. ■ If the increased liquid pipe size is larger than the pipe size of the main liquid pipe, then the pipe size of the main liquid pipe needs to be increased as well. ■ If the increased suction gas pipe size is larger than the pipe size of the main suction gas pipe, then the allowable length after the first refrigerant branch kit may not be increased to 90 m. Size-up of the main suction gas pipe may affect a good oil return to the outdoor unit due to influence of the HP/LP gas pipe.	indoor unit **8**: b+c+d+e+f+g+p≤90 m increase the pipe size of b, c, d, e, f, g	Increase the pipe size as follows (see tables below)
For calculation of total extension length, the actual length of above pipes must be doubled (except length of main pipes and of pipes which do not have an increased pipe size).	a+b*2+c*2+d*2+e*2+f*2+g*2 +h+i+j+k+l+m+n+p≤1000 m	(see drawing below)
Indoor unit to the nearest branch kit ≤40 m	h, i, j....... p≤40 m	
The difference between the distance of the outdoor unit to the farthest indoor unit and the distance of the outdoor unit to the nearest indoor unit ≤40 m	The most remote indoor unit **8** The nearest indoor unit **1** (a+b+c+d+e+f+g+p)–(a+h)≤40 m	

	Gas side	
REYQ8	Ø19.1 →	Ø22.2
REYQ10	Ø22.2	Ø25.4[(a)]
REYQ12+14	Ø28.6	—
REYQ16	Ø28.6 →	Ø31.8[(a)]

Liquid side
Ø9.5 → Ø12.7
Ø12.7 → Ø15.9
Ø15.9 → Ø19.1
Ø19.1 → Ø22.2

— Increase is not allowed

(a) If not available, increase is not allowed



1 Outdoor unit
2 Refnet joints (a~g)
3 Indoor units (1~8)

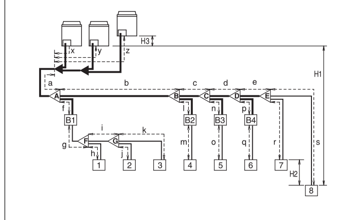
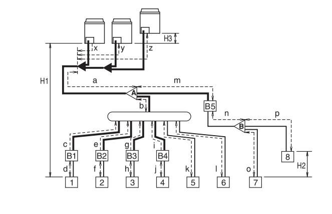
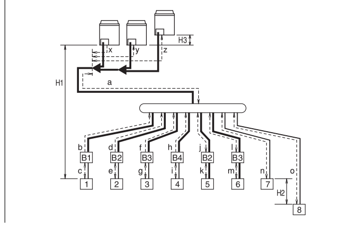
4PW48462-1A

6 Refrigerant pipe selection

6 - 2 VRV®III heat recovery small fooprint combination/high COP combination

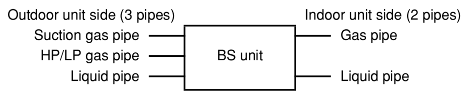
REYQ18-48P8/9, REYHQ-P

Example of connection
(Connection of 8 indoor units)

Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
		

1 indoor unit — refnet joint — refnet header — ◄ outdoor multi connection piping kit — Outdoor unit side (3 pipes) (thick line) — Indoor unit side (2 pipes) (thin line)

⚠ Use the outdoor unit multi connection piping kit that is sold separately as an option (BHFQ23P907+1357) for the multi installation of outdoor units. Selection method is as shown in the right table.



Outdoor units installed in a multiple outdoor unit system (REYQ18~48 + REYHQ16 + REYHQ20~24)

Install the joint part (◄ part in the figure) of the outdoor unit multi connection piping kit horizontally with attention to the installation restrictions described in "connecting the refrigerant piping".
(*) In case of multi combination, interprete the word "outdoor" as "first outdoor branch".

			Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
Maximum allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor(*) and indoor units ≤165 m		
			[Example] unit 8: a+b+c+d+e+s≤165 m	[Example] unit 6: a+b+l≤165 m, unit 8: a+m+n+p≤165 m	[Example] unit 8: a+o≤165 m
		Equivalent length	Equivalent pipe length between outdoor(*) and indoor units ≤190 m (Assume equivalent pipe length of the refnet joint to be 0.5 m, of the refnet header to be 1.0 m, of the BSVQ100 and BSVQ160 to be 4 m and of the BSVQ250 to be 6 m (for calculation purposes)) (See note 1)		
		Total extension length	Total piping length from outdoor(*) to all indoor units ≤1000 m		
	Between the first outdoor unit multi connection piping kit and outdoor unit (in case of a multiple outdoor unit system)	Actual and equivalent pipe length	The actual pipe length from the first outdoor unit multi connection piping kit to the outdoor unit ≤10 m. (x≤10 m, y≤10 m, z≤10 m) The equivalent pipe length from the first outdoor unit multi connection piping kit to the outdoor unit ≤13 m. (x≤13 m, y≤13 m, z≤13 m)		
Allowable height difference	Between outdoor and indoor units		Difference in height between outdoor and indoor units (H1)≤50 m (≤40 m if outdoor unit is located in a lower position).		
	Between indoor and indoor units		Difference in height between adjacent indoor units (H2)≤15 m		
	Between outdoor and outdoor units		Difference in height between adjacent outdoor units (H3)≤5 m		
Allowable length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤40 m (See note 2)		
			[Example] unit 8: b+c+d+e+s≤40 m	[Example] unit 6: b+l≤40 m, unit 8: m+n+p≤40 m	[Example] unit 8: o≤40 m

Outdoor unit multi connection piping kit and refrigerant branch kit selection

⚠ Refrigerant branch kits can only be used with R410A.

How to select the refnet joint
When using refnet joints at the first branch counted from the outdoor unit side, choose from the following table in accordance with the capacity of the outdoor unit (example: refnet joint A).

Outdoor unit capacity type (Hp)	Refrigerant branch kit name
8+10	KHRQ23M29T
12~22	KHRQ23M64T
≥24	KHRQ23M75T

For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index of all indoor units connected after the refrigerant branch.

Indoor capacity type	Refrigerant branch kit name	
	3 pipes	2 pipes
<200	KHRQ23M20T	KHRQ22M20T
200≤x<290	KHRQ23M29T9	KHRQ22M29T
290≤x<640	KHRQ23M64T	KHRQ22M64T
≥640	KHRQ23M75T	KHRQ22M75T

How to select the refnet header
Choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.
Note: 250 type indoor unit can not be connected lower than the refnet header.

Indoor capacity type	Refrigerant branch kit name	
	3 pipes	2 pipes
<200	KHRQ23M29H	KHRQ22M29H
200≤x<290	KHRQ23M29H	KHRQ22M29H
290≤x<640	KHRQ23M64H	KHRQ22M64H
≥640	KHRQ23M75H	KHRQ22M75H

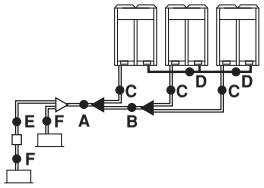
How to choose an outdoor multi connection piping kit (this is required when the system is a multiple outdoor unit system)
Choose from the following table in accordance with the number of outdoor units

Number of outdoor units	Branch kit name
2	BHFQ23P907
3	BHFQ23P1357

Example of downstream indoor units	Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
	[Example] in case of refnet joint C: indoor units 5+6+7+8	[Example] in case of refnet joint G: indoor units 7+8, in case of refnet header: indoor units 1+2+3+4+5+6	[Example] in case of refnet header: indoor units 1+2+3+4+5+6+7+8

4PW48463-1A

Pipe size selection
For an outdoor unit multi installation (REYQ18~48P + REYHQ16~24), select the pipe size in accordance with the following figure.



A. Piping between outdoor unit and refrigerant branch kit
B. Piping between outdoor unit multi connection piping units
Choose from the following table in accordance with the outdoor unit total capacity type, connected downstream.

Outdoor unit capacity type (Hp)	Piping outer diameter size (mm)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
8	19.1	15.9	9.5
10	22.2	19.1	9.5
12	28.6	19.1	12.7
14+16	28.6	22.2	12.7
18	28.6	22.2	15.9
20+22	28.6	28.6	15.9
24	34.9	28.6	15.9
26~34	34.9	28.6	19.1
36	41.3	28.6	19.1
38~48	41.3	34.9	19.1

C. Piping between outdoor unit multi connection piping kit and outdoor unit
Choose from the following table in accordance with the capacity type of the connected outdoor unit.

Outdoor unit capacity type (Hp)	Piping outer diameter size (mm)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
8+10	22.2	19.1	9.5
12	28.6	19.1	12.7
14+16	28.6	22.2	12.7

E. Piping between refrigerant branch kit and BS unit
Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.
Choose from the following table in accordance with the indoor unit total capacity type, connected downstream.

Indoor unit capacity type	Piping outer diameter size (mm)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
<150	15.9	12.7	9.5
150≤x<200	19.1	15.9	9.5
200≤x<290	22.2	19.1	9.5
290≤x<420	28.6	19.1	12.7
420≤x<640	28.6	28.6	15.9
640≤x<920	34.9	28.6	19.1
≥920	41.3	28.6	19.1

F. Piping between refrigerant branch kit or BS unit and indoor unit
Choose from the following table in accordance with the capacity type of the connected indoor unit.

Indoor unit capacity type	Piping outer diameter size (mm)	
	Suction gas pipe	Liquid pipe
20, 25, 32, 40, 50	12.7	6.4
63, 80, 100, 125	15.9	9.5
200	19.1	9.5
250	22.2	9.5

D. Equalizer piping (outdoor units only)

Piping outer diameter size (mm)	19.1

How to calculate the additional refrigerant to be charged
Additional refrigerant to be charged R (kg)
R should be rounded off in units of 0.1 kg

⚠ The refrigerant charge of the system must be less than 100 kg. This means that in case the calculated refrigerant charge is equal to or more than 95 kg you must divide your multiple outdoor system into smaller independent systems, each containing less than 95 kg refrigerant charge.
For factory charge, refer to the unit name plate.

$$R = \left[\begin{array}{l}[(X_1 \times \mathbf{Ø22.2}) \times 0.37] + [(X_2 \times \mathbf{Ø19.1}) \times 0.26] + \\ [(X_3 \times \mathbf{Ø15.9}) \times 0.18] + [(X_4 \times \mathbf{Ø12.7}) \times 0.12] + \\ [(X_5 \times \mathbf{Ø9.5}) \times 0.059] + [(X_6 \times \mathbf{Ø6.4}) \times 0.022]\end{array}\right] \times 1.02 + \mathbf{A} + \mathbf{B}$$

$X_{1...6}$ = Total length (m) of liquid piping size at **Øa**
A = Weight according to table A
B = Weight according to table B in function of indoor unit connection ratio

REYQ	A
18+20 Hp	**1.0** kg
22+24 Hp	**1.5** kg
26 Hp	**2.0** kg
28+30 Hp	**2.5** kg
32~40 Hp	**3.0** kg
42 Hp	**3.5** kg
44+46 Hp	**4.0** kg
48 Hp	**4.5** kg

REYHQ	A
16 Hp	**1.0** kg
20 Hp	**1.5** kg
22+24 Hp	**2.0** kg

REY(H)Q		B
16~32 Hp	>100% ≤130%	**0.5** kg
34~48 Hp	>100% ≤120%	**0.5** kg
	>120% ≤130%	**1.0** kg

Example for refrigerant branch using refnet joint and refnet header for REYQ34. REYQ34 = REMQ8+REMQ10+REMQ16, the indoor unit connection ratio = 120% and the piping lengths are as below.

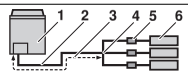
a : Ø19.1x30 m	f : Ø9.5x10 m	k : Ø9.5x20 m	p : Ø6.4x10 m
b : Ø19.1x20 m	g : Ø9.5x10 m	l : Ø9.5x20 m	r : 12.7x3 m
c : Ø9.5x10 m	h : Ø9.5x10 m	m: Ø9.5x20 m	s : Ø9.5x3 m
d : Ø9.5x10 m	i : Ø9.5x10 m	n : Ø9.5x10 m	t : Ø9.5x3 m
e : Ø9.5x10 m	j : Ø9.5x10 m	o : Ø6.4x10 m	u : Ø15.9x1 m

R = [[50x0.26]+[1x0.18]+[3x0.12]+[156x0.059]+[20x0.022]]x1.02+**3.0+0.5**
= 27.148 ⇒ **R = 27.1 kg**

Note 1

When the equivalent pipe length between outdoor and indoor units is 90 m or more, the size of the main liquid pipe must be increased. Never increase suction gas pipe and HP/LP gas pipe sizes.
Depending on the length of the piping, the capacity may drop, but even in such a case it is possible to increase the size of the main liquid pipe.

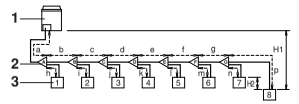
REY(H)Q	Ø	REY(H)Q	Ø
8+10	9.5 → 12.7	18~24	15.9 → 19.1
12~16	12.7 → 15.9	26~48	19.1 → 22.2



1 Outdoor unit
2 Main pipes
3 Increase only liquid pipe size
4 First refrigerant branch kit
5 BS unit
6 Indoor unit

Note 2

Allowable length after the first refrigerant branch kit to indoor units is 40 m or less, however it can be extended up to 90 m if all the following conditions are fulfilled.

Required conditions	Example drawings	
It is necessary to increase the pipe size of the liquid and suction gas pipe if the pipe length between the first and the final branch kit is over 40 m (reducers must be procured on site). Increasing the HP/LP gas pipe size is not allowed. ■ If the increased liquid pipe size is larger than the pipe size of the main liquid pipe, then the pipe size of the main liquid pipe needs to be increased as well. ■ If the increased suction gas pipe size is larger than the pipe size of the main suction gas pipe, then the allowable length after the first refrigerant branch kit may not be increased to 90 m. Size-up of the main suction gas pipe may affect a good oil return to the outdoor unit due to influence of the HP/LP gas pipe.	indoor unit **8**: b+c+d+e+f+g+p≤90 m increase the pipe size of b, c, d, e, f, g	Increase the pipe size as follows Gas side: REYQ18~22 Ø28.6 → Ø31.8(a); REYQ24 Ø34.9 —; REYQ26~34 Ø34.9 → Ø38.1(a); REYQ36~48 Ø41.3 —; REYHQ16+20+22 Ø28.6 → Ø31.8(a); REYHQ24 Ø34.9 — Liquid side: Ø9.5 → Ø12.7; Ø12.7 → Ø15.9; Ø15.9 → Ø19.1; Ø19.1 → Ø22.2 — Increase is not allowed (a) If not available, increase is not allowed
For calculation of total extension length, the actual length of above pipes must be doubled (except length of main pipes and of pipes which do not have an increased pipe size).	a+b*2+c*2+d*2+e*2+f*2+g*2 +h+i+j+k+l+m+n+p≤1000 m	 **1** Outdoor unit **2** Refnet joints (a~g) **3** Indoor units (1~8)
Indoor unit to the nearest branch kit ≤40 m	h, i, j..... p≤40 m	
The difference between the distance of the outdoor unit to the farthest indoor unit and the distance of the outdoor unit to the nearest indoor unit ≤40 m	The most remote indoor unit **8** The nearest indoor unit **1** (a+b+c+d+e+f+g+p)−(a+h)≤40 m	

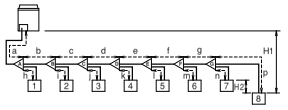
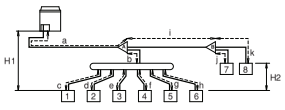
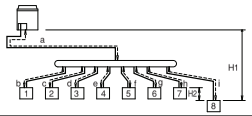
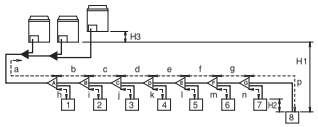
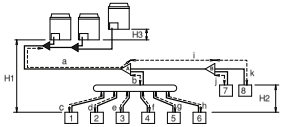
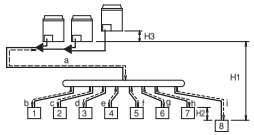
RXYQ-P9, RXYHQ-P9, RXHQ-P9

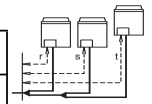
e of connection
ion of 8 indoor units Heat pump system)

Use the outdoor unit multi connection piping kit that is sold separately as an option (BHFQ22P1007+1517) for the multi installation of outdoor units. Selection method is as shown in the right table.
Do not use the outdoor unit multi connection piping kit (BHFQ22M909+1359) that are sold separately as an option of the M-type series and do not use T-joints.

indoor unit
refnet joint
refnet header
outdoor multi connection piping kit

e joint part (◄ part in the figure) of the outdoor unit multi connection piping kit lly with attention to the installation restrictions described in "connecting the t piping".
system capacity is 20 or more, re-read to the first outdoor branch as seen from r unit.

			Branch with refnet joint	Branch with refnet joint and refnet header	Branch with refnet header
		One outdoor unit installed (RXYQ5~18 + RXHQ8~18 + RXYHQ12)			
		Outdoor units installed in a multiple outdoor unit system (RX(Y/H)Q20~54 + RXYHQ16~36)			
m allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor(*) and indoor units ≤165 m		
			[Example] unit 8: a+b+c+d+e+f+g+p≤165 m	[Example] unit 6: a+b+h≤165 m, unit 8: a+i+k≤165 m	[Example] unit 8: a+i≤165 m
		Equivalent length	Equivalent pipe length between outdoor(*) and indoor units ≤190 m (Assume equivalent pipe length of refnet joint to be 0.5 m and of the refnet header to be 1.0 m. (for calculation purposes))		
		Total extension length	Total piping length from outdoor unit* to all indoor units ≤1000 m		
	Between outdoor branch and outdoor unit (Only for RX(Y/H)Q20 and RXYHQ20 or more)	Actual pipe length	Piping length from outdoor branch to outdoor unit ≤10 m. Approximate length: max. 13 m		
e height	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1)≤50 m (≤40 m if outdoor unit is located in a lower position).		
	Between indoor and indoor units	Difference in height	Difference in height between adjacent indoor units (H2)≤15 m		
	Between outdoor and outdoor units	Difference in height	Difference in height between outdoor unit (main) and outdoor unit (sub) (H3)≤5 m		
e length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤40 m (See note 1 on next page)		
			[Example] unit 8: b+c+d+e+f+g+p≤40 m	[Example] unit 6: b+h≤40 m, unit 8: i+k≤40 m	[Example] unit 8: i≤40 m



r≤10 m (Approximate length: max. 13 m)
s≤10 m (Approximate length: max: 13 m)
t≤10 m (Approximate length: max: 13 m)

ant branch kit selection

nt branch kits can only be used with R410A.

How to select the refnet joint
- When using refnet joints at the first branch counted from the outdoor unit side. Choose from the following table in accordance with the capacity of the outdoor unit.

Outdoor unit capacity type	Refrigerant branch kit name
RXYQ5	KHRQ22M20T
RX(Y/H)Q8~10	KHRQ22M29T9
RX(Y/H)Q12~22 + RXYHQ12 + RXYHQ16~22	KHRQ22M64T
RX(Y/H)Q24~54	KHRQ22M75T

- For refnet joints other than the first branch, select the proper branch kit model based on the total capacity index.

Indoor capacity type	Refrigerant branch kit name
<200	KHRQ22M20T
200≤x<290	KHRQ22M29T9
290≤x<640	KHRQ22M64T
≥640	KHRQ22M75T

How to select the refnet header
- Choose from the following table in accordance with the total capacity of all the indoor units connected below the refnet header.
- Note: 250 type cannot be connected below the refnet header.

Indoor capacity type	Refrigerant branch kit name
<290	KHRQ22M29H (Max. 8 branch)
290≤x<640	KHRQ22M64H (Max. 8 branch)(a)
≥640	KHRQ22M75H (Max. 8 branch)

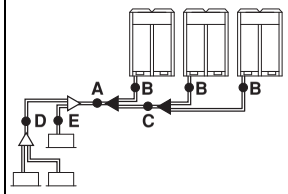
(a) See note 2 on next page

How to choose an outdoor multi connection piping kit (needed if the outdoor unit capacity type is RX(Y/H)Q20 or RXYHQ20 or more.)
- Choose from the following table in accordance with the number of outdoor units.

Number of outdoor units	Branch kit name
2	BHFQ22P1007
3	BHFQ22P1517

Example of downstream indoor units	[Example] in case of refnet joint C; indoor units 3+4+5+6+7+8	[Example] in case of refnet joint B; indoor units 7+8, in case of refnet header; indoor units 1+2+3+4+5+6	[Example] in case of refnet header; indoor units 1+2+3+4+5+6+7+8

ize selection
outdoor unit multi installation (RX(Y/H)Q20~54P + Q16~36), select the pipe size in accordance with the ng figure.



A,B,C. Piping between outdoor unit and refrigerant branch kit
- Choose from the following table in accordance with the outdoor unit total capacity type, connected downstream.

Outdoor unit connection piping size

Outdoor unit capacity type	Piping size (outer diameter) (mm)	
	Gas pipe	Liquid pipe
RXYQ5	Ø15.9	Ø9.5
RX(Y/H)Q8	Ø19.1	
RX(Y/H)Q10	Ø22.2	
RX(Y/H)Q12~16 + RXYHQ12+16	Ø28.6	Ø12.7
RX(Y/H)Q1~22 + RXYHQ18~22		Ø15.9
RX(Y/H)Q24 + RXYHQ24	Ø34.9	
RX(Y/H)Q26~34 + RXYHQ26~34		Ø19.1
RX(Y/H)Q36~54 + RXYHQ36	Ø41.3	

D. Piping between refrigerant branch kits
- Choose from the following table in accordance with the total capacity of all the indoor units connected below this.
- Do not let the connection piping exceed the refrigerant piping size chosen by general system model name.

Indoor or outdoor unit total capacity	Piping size (outer diameter) (mm)	
	Gas pipe	Liquid pipe
<150	Ø15.9	Ø9.5
150≤x<200	Ø19.1	
200≤x<290	Ø22.2	
290≤x<420	Ø28.6	Ø12.7
420≤x<640		Ø15.9
640≤x<920	Ø34.9	Ø19.1
≥920	Ø41.3	

E. Piping between refrigerant branch kit and indoor unit
- Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.

Indoor capacity type	Piping size (outer diameter) (mm)	
	Gas pipe	Liquid pipe
20~50	Ø12.7	Ø6.4
63~125	Ø15.9	Ø9.5
200	Ø19.1	
250	Ø22.2	

When the equivalent pipe length between outdoor and indoor units is 90 m or more, the size of the main pipes (both gas side and liquid side) must be increased.
Depending on the length of the piping, the capacity may drop, but even in such a case it is possible to increase the size of the main pipes.

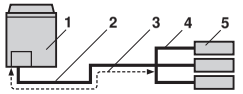
	Gas side
RXYQ5	Ø15.9 → Ø19.1
RX(Y/H)Q8	Ø19.1 → Ø22.2
RX(Y/H)Q10	Ø22.2 → Ø25.4(a)
RX(Y/H)Q12~14 + RXYHQ12	Ø28.6 —
RX(Y/H)Q16~22 + RXYHQ16~22	Ø28.6 → Ø31.8(a)
RX(Y/H)Q24 + RXYHQ24	Ø34.9 —
RX(Y/H)Q26~34 + RXYHQ26~34	Ø34.9 → Ø38.1(a)
RX(Y/H)Q36~54 + RXYHQ36	Ø41.3 —

— Increase is not allowed

(a) If not available, increase is not allowed

	Liquid side
RXYQ5	Ø9.5 —
RX(Y/H)Q8~10	Ø9.5 → Ø12.7
RX(Y/H)Q12~16 + RXYHQ12+16	Ø12.7 → Ø15.9
RX(Y/H)Q18~24 + RXYHQ18~24	Ø15.9 → Ø19.1
RXYQ26~54 + RXYHQ26~36	Ø19.1 → Ø22.2

— Increase is not allowed



1 Outdoor unit
2 Main pipes
3 Increase
4 First refrigerant branch kit
5 Indoor unit

o calculate the additional refrigerant to be charged
nal refrigerant to be charged R (kg)
ld be rounded off in units of 0.1 kg

The refrigerant charge of the system must be less than 100 kg. This means that in case the calculated refrigerant charge is equal to or more than 100 kg you must divide your multiple outdoor system into smaller independent systems, each containing less than 100 kg refrigerant charge.
For factory charge, refer to the unit name plate.

$$R = [(X_1 \times \mathbf{Ø22.2}) \times 0.37] + [(X_2 \times \mathbf{Ø19.1}) \times 0.26] + [(X_3 \times \mathbf{Ø15.9}) \times 0.18] + [(X_4 \times \mathbf{Ø12.7}) \times 0.12] + [(X_5 \times \mathbf{Ø9.5}) \times 0.059] + [(X_6 \times \mathbf{Ø6.4}) \times 0.022] + \mathbf{A}$$

$X_{1...6}$ = Total length (m) of liquid piping size at **Øa**
A = Weight according to table

		A
1x	5~12	**0** kg
	14~18	**1** kg
2x	2x (8~12)	**0** kg
	(8~12) + (14~18)	**1** kg
	(14~18) + (14~18)	**2** kg
3x	3x (8~12)	**0** kg
	[2x (8~12)] + (14~18)	**1** kg
	(8~12) + [2x (14~18)]	**2** kg
	3x (14~18)	**3** kg

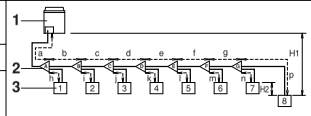
Example for refrigerant branch using refnet joint and refnet header for RXYQ34P ((1x 16) + (1x 18))
If the outdoor unit is RXYQ34P and the piping lengths are as below

a : Ø19.1x30 m	d : Ø9.5x10 m	g : Ø6.4x10 m	j : Ø6.4x10 m
b : Ø15.9x10 m	e : Ø9.5x10 m	h : Ø6.4x20 m	k : Ø6.4x9 m
c : Ø9.5x10 m	f : Ø9.5x10 m	i : Ø12.7x10 m	

R = [30x0.26]+[10x0.18]+[10x0.12]+[40x0.059]+[49x0.022]**+2** = 16.238
⇒ **R = 16.2 kg**

ote 1

Allowable length after the first refrigerant branch kit to indoor units is 40 m or less, however it can be extended up to 90 m if all the following conditions are fulfilled.

Required conditions	Example drawings	
It is necessary to increase the pipe size of the liquid and the gas pipe if the pipe length between the first and the final branch kit is over 40 m (reducers must be procured on site). If the increased pipe size is larger than the pipe size of the main pipe, then the pipe size of the main pipe needs to be increased as well.	indoor unit **8**: b+c+d+e+f+g+p≤90 m increase the pipe size of b, c, d, e, f, g	Increase the pipe size as follows Ø9.5 → Ø12.7 Ø15.9 → Ø19.1 Ø22.2 → Ø25.4* Ø12.7 → Ø15.9 Ø19.1 → Ø22.2 Ø28.6 → Ø31.8* Ø34.9 → Ø38.1* * If available on the site. Otherwise it can not be increased.
For calculation of total extension length, the actual length of above pipes must be doubled. (except main pipe and the pipes that not increase the pipe size)	a+b*2+c*2+d*2+e*2+f*2+g*2+h+i+j+k+l+m+n+p≤1000 m	 1 Outdoor unit 2 Refnet joints (a~g) 3 Indoor units (1~8)
Indoor unit to the nearest branch kit ≤40 m	h, i, j..... p≤40 m	
The difference between the distance of the outdoor unit to the farthest indoor unit and the distance of the outdoor unit to the nearest indoor unit ≤40 m	The farthest indoor unit **8** The nearest indoor unit **1** (a+b+c+d+e+f+g+p)–(a+h)≤40 m	

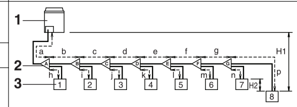
ote 2

If the pipe size above the refnet header is Ø34.9 or more, KHRQ22M75H is required.

6 Refrigerant pipe selection

6 - 3 VRV®III heat pump small footprint combination / high COP combination

RXYQ-P9, RXYHQ-P9, RXHQ-P9

Note 1	Allowable length after the first refrigerant branch kit to indoor units is 40 m or less, however it can be extended up to 90 m if all the following conditions are fulfilled.		
	Required conditions	**Example drawings**	
	It is necessary to increase the pipe size of the liquid and the gas pipe if the pipe length between the first and the final branch kit is over 40 m (reducers must be procured on site). If the increased pipe size is larger than the pipe size of the main pipe, then the pipe size of the main pipe needs to be increased as well.	indoor unit **8**: b+c+d+e+f+g+pð90 m increase the pipe size of b, c, d, e, f, g	Increase the pipe size as follows Ø9.5 → Ø12.7 Ø15.9 → Ø19.1 Ø22.2 → Ø25.4* Ø12.7 → Ø15.9 Ø19.1 → Ø22.2 Ø28.6 → Ø31.8* Ø34.9 → Ø38.1* * If available on the site. Otherwise it can not be increased.
	For calculation of total extension length, the actual length of above pipes must be doubled. (except main pipe and the pipes that not increase the pipe size)	a+b*2+c*2+d*2+e*2+f*2+g*2 +h+i+j+k+l+m+n+pð1000 m	 **1** Outdoor unit **2** Refnet joints (a~g) **3** Indoor units (1~8)
	Indoor unit to the nearest branch kit ð40 m	h, i, j....... pð40 m	
	The difference between the distance of the outdoor unit to the farthest indoor unit and the distance of the outdoor unit to the nearest indoor unit ð40 m	The farthest indoor unit **8** The nearest indoor unit **1** (a+b+c+d+e+f+g+p)–(a+h)ð40 m	

Note 2	If the pipe size above the refnet header is Ø34.9 or more, KHRQ22M75H is required.

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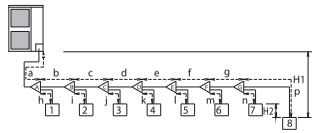
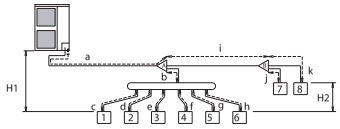
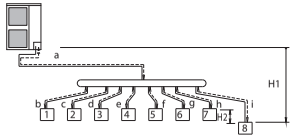
RXYSQ-P8Y1

Example of connection (Connection of 8 indoor units Heat pump system) 1 indoor unit refnet joint refnet header			**Branch with refnet joint** 	**Branch with refnet joint and refnet header** 	**Branch with refnet header** 
Maximum allowable length	Between outdoor and indoor units	Actual pipe length	Pipe length between outdoor and indoor units ≤150 m		
			[Example] unit 8: a+b+c+d+e+f+g+p ≤150 m	[Example] unit 6: a+b+h ≤ 150m, unit 8: a+i+k ≤150 m	[Example] unit 8: a+i ≤150 m
		Equivalent length	Equivalent pipe length between outdoor and indoor units ≤175 m (Assume equivalent pipe length of refnet joint to be 0.5 m and of the refnet header to be 1.0 m. (for calculation purposes))		
		Total extension length	Total piping length from outdoor unit to all indoor units between 10 m and 300 m		
Allowable height	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1) ≤50 m (≤40 m if outdoor unit is located in a lower position).		
	Between indoor and indoor units	Difference in height	Difference in height between adjacent indoor units (H2) ≤15 m		
Allowable length after the branch		Actual pipe length	Pipe length from first refrigerant branch kit (either refnet joint or refnet header) to indoor unit ≤40 m		
			[Example] unit 8: b+c+d+e+f+g+p ≤40 m	[Example] unit 6: b+h40 m, unit 8: i+k ≤40 m	[Example] unit 8: i ≤40 m

Refrigerant branch kit selection

Refrigerant branch kits can only be used with R410A.

Use the following refnet joint

Outdoor unit capacity type	Refrigerant branch kit name
RXYSQ4~6	KHRQ22M20T

Use the following refnet header

Outdoor unit capacity type	Refrigerant branch kit name
RXYSQ4~6	KHRQ22M29H

Pipe size selection

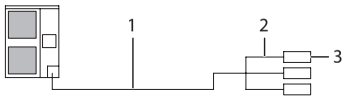
Caution on selecting connection pipes

If the overall equivalent piping length is ≥90 m, be sure to enlarge the pipe diameter of the gas-side main piping. If the recommended pipe size is not available, stick to the original pipe diameter (which may result in a small capacity decrease).

[Gas side]

RXYSQ4+5: → Ø15.9 Ø19.1

RXYSQ6: → Ø19.1 Ø22.2



1 Main pipe (enlarge)
2 First refrigerant branch kit
3 Indoor unit

A. Piping between outdoor unit and refrigerant branch kit

• Match to the size of the connection piping on the outdoor unit.

Outdoor unit connection piping size

Outdoor unit capacity type	Piping size (outer diameter x minimum thickness)	
	Gas pipe	Liquid pipe
RXYSQ4+5	Ø15.9x1.0 (Ø19.1x1.0)	Ø9.5x0.8
RXYSQ6	Ø19.1x1.0 (Ø22.2x1.0)	

B. Piping between refrigerant branch kits

• Use the pipe size from the following table.

Piping size (outer diameter x minimum thickness)	
Gas pipe	Liquid pipe
Ø15.9x1.0	Ø9.5x0.8

C. Piping between refrigerant branch kit and indoor unit

• Pipe size for direct connection to indoor unit must be the same as the connection size of indoor unit.

Indoor capacity index	Piping size (outer diameter x minimum thickness)	
	Gas pipe	Liquid pipe
20+25+32+40+50	Ø12.7x08	Ø6.4x0.8
63+80+100+125	Ø15.9x1.0	Ø9.5x0.8

How to calculate the additional refrigerant to be charged

Additional refrigerant to be charged R (kg)

R should be rounded o in units of 0.1 kg

$$R = \left(\text{Total length (m) of liquid piping size at Ø9.5}\right) \times 0.054 + \left(\text{Total length (m) of liquid piping size at Ø6.4}\right) \times 0.022$$

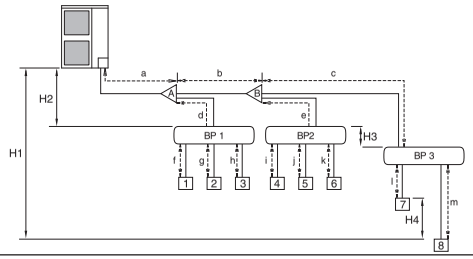
Example for refrigerant branch using refnet joint and refnet header

a: Ø9.5x3 m	d: Ø9.5x13 m	g: Ø6.4x10 m	j: Ø6.4x10 m
b: Ø9.5x10 m	e: Ø6.4x10 m	h: Ø6.4x20 m	k: Ø6.4x9 m
c: Ø9.5x10 m	f: Ø6.4x10 m	i: Ø9.5x10 m	

R=[73 x 0.054] + [69 x 0.022] = 5.46 ⇒ 5.5 kg

4PW66304-1

RXYSQ-P8Y1

Example of connection (Connection of 8 units heat pump system) 1 indoor unit A refrigerant branch kit (refnet joint) BP 1 BP unit **NOTE** The refrigerant branch kits must be positioned as close to the BP units as possible (c, d, e must be as short as possible).			**Branch with refnet joint** 
Maximum allowable length	Between outdoor and BP units	Total pipe length	Pipe length between outdoor and BP units ≤55 m [Example] 3 BP units: a+b+c+d+e≤55 m
	Between BP and indoor units	Total pipe length	Piping length between BP and indoor units: RXYSQ4≤60 m, RXYSQ5≤80 m, RXYSQ6≤90 m [Example] RXYSQ5: f+g+h+i+j+k+l+m≤80 m
	Between BP and an indoor unit	1 room length	Pipe length between BP and an indoor unit: ≤15 m [Example] f, g, h, i, j, k, l, m≤15 m
Minimum allowable length(*)	Between outdoor unit and the first refrigerant branch kit	Pipe length	Pipe length between outdoor unit and first refrigerant branch kit: ≥5 m [Example] a≥5 m
Allowable height	Between outdoor and indoor units	Difference in height	Difference in height between outdoor and indoor units (H1)≤30 m
	Between outdoor and BP units	Difference in height	Difference in height between outdoor and BP units (H2)≤30 m
	Between BP and BP units	Difference in height	Difference in height between BP and BP units (H3)≤15 m
	Between indoor and indoor units	Difference in height	Difference in height between indoor and indoor units (H4)≤15 m
Allowable length after the branch		Pipe length	Pipe length from first refrigerant branch kit (refnet joint) to indoor unit ≤40 m [Example] unit 8: b+c+m≤40 m [Example] unit 6: b+e+k≤40 m [Example] unit 3: d+h≤40 m
Refrigerant branch kit selection Refrigerant branch kits can only be used with R410A.			Use the following refnet joint: KHRQ22M20T.

(*) The refrigerant sound from the outdoor unit can be transmitted.

Pipe size selection

	Symbol		Piping size (outer diameter x minimum thickness) Gas pipe	Liquid pipe
Between outdoor and first refrigerant branch kit	a		Ø19.1x1.0	Ø9.5x0.8
Between refrigerant branch kit and refrigerant branch kit	b		Ø15.9x1.0	
Between refrigerant branch kit and BP unit	c, d, e	**Total indoor capacity Q**	**Gas pipe**	**Liquid pipe**
		Qc, Qd, Qe ≤5.0 kW	Ø12.7x0.8	Ø6.4x0.8
		Qc, Qd, Qe >5.0 kW	Ø15.9x1.0	Ø9.5x0.8

NOTE
- Qc, Qd, Qe is total connected indoor capacity.
- c, d, e indicates the symbols in the figure.

Example

Indoor 4: 2.5 kW
Indoor 5: 3.5 kW
Indoor 6: 5.0 kW
} Qe=11.0 kW

➡ (Gas pipe) Ø15.9x1.0 and (liquid pipe) Ø9.5x0.8

How to calculate the additional refrigerant to be charged
Additional refrigerant to be charged R (kg)
R should be rounded off in units of 0.1 kg

$$R = \left(\text{Total length (m) of liquid piping size at Ø9.5}\right) \times 0.054 + \left(\text{Total length (m) of liquid piping size at Ø6.4}\right) \times 0.022$$

Example for refrigerant branch using refnet joint

a: Ø9.5x10 m	d: Ø9.5x10 m	g: Ø6.4x10 m	j: Ø6.4x10 m	m: Ø6.4x8 m
b: Ø9.5x10 m	e: Ø9.5x10 m	h: Ø6.4x10 m	k: Ø6.4x5 m	
c: Ø6.4x10 m	f: Ø6.4x10 m	i: Ø6.4x10 m	l: Ø6.4x5 m	

R=[40 x 0.054] + [78 x 0.022] = 3.876 ⇒ 3.9 kg

6 Refrigerant pipe selection

6 - 5 Piping thickness

Piping diameter	Material	Minimum thickness [mm]
Ø 6.4	O	0.8
Ø 9.5	O	0.8
Ø 12.7	O	0.8
Ø 15.9	O	0.99
Ø 19.1	1/2H	0.8
Ø 22.2	1/2H	0.8
Ø 25.4	1/2H	0.88
Ø 28.6	1/2H	0.99
Ø 31.8	1/2H	1.10
Ø 34.9	1/2H	1.21
Ø 38.1	1/2H	1.32
Ø 41.3	1/2H	1.43

O annealed

1/2H half-hard

For half hard pipes the maximum allowed tensile stress is 61 N/mm^2. For this reason the 0.2% proof strength of the half hard pipe shall be minimum 61 N/mm^2.

The bending radius is more than or equal to 3 times the diameter of the pipe.

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

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