DAIKIN

EEDEN08-200

technical data

air conditioning systems

Air-cooled selection procedure

R-410A

VRV III-S
VRV III

2a

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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.

2
1

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 16 indoor units can be connected to one outdoor unit. 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 %
RXYSQ4PAV/RXYSQ4PAY	130	120	110	100	90	80	70	60	50
RXYSQ5PAV/RXYSQ5PAY	162.5	150	137.5	125	112.5	100	87.5	75	62.5
RXYSQ6PAV/RXYSQ6PAY	182	168	154	140	126	112	98	84	70

Outdoor unit	Indoor unit combination ratio								
	130 %	120 %	110 %	100 %	90 %	80 %	70%	60 %	50 %
RX(Y)Q5P	162.5	150	137.5	125	112.5	100	87.5	75	62.5
RX(Y)Q8P/REYQ8P8	260	240	220	200	180	160	140	120	100
RX(Y)Q10P/REYQ10P8	325	300	275	250	225	200	175	150	125
RX(Y)Q12P/REYQ12P8	390	360	330	300	270	240	210	180	150
RX(Y)Q14PA/REYQ14P8	455	420	385	350	315	280	245	210	175
RX(Y)Q16PA/REYQ16P8	520	480	440	400	360	320	280	240	200
RX(Y)Q18PA/REYQ18P8	585	540	495	450	405	360	315	270	225
RXYQ20P(A)/REYQ20P8	650	600	550	500	450	400	350	300	250
RXYQ22P(A)/REYQ22P8	715	660	605	550	495	440	385	330	275
RXYQ24P(A)/REYQ24P8	780	720	660	600	540	480	420	360	300
RXYQ26P(A)/REYQ26P8	845	780	715	650	585	520	455	390	325
RXYQ28P(A)/REYQ28P8	910	840	770	700	630	560	490	420	350
RXYQ30P(A)/REYQ30P8	975	900	825	750	675	600	525	450	375
RXYQ32P(A)/REYQ32P8	1,040	960	880	800	720	640	560	480	400
RXYQ34P(A)/REYQ34P8	1,105	1,020	935	850	765	680	595	510	425
RXYQ36P(A)/REYQ36P8	1,170	1,080	990	900	810	720	630	540	450
RXYQ38P(A)/REYQ38P8	1,235	1,140	1,045	950	855	760	665	570	475
RXYQ40P(A)/REYQ40P8	1,300	1,200	1,100	1,000	900	800	700	600	500
RXYQ42P(A)/REYQ42P8	1,365	1,260	1,155	1,050	945	840	735	630	525
RXYQ44P(A)/REYQ44P8	1,430	1,320	1,210	1,100	990	880	770	660	550
RXYQ46P(A)/REYQ46P8	1,495	1,380	1,265	1,150	1,035	920	805	690	575
RXYQ48P(A)/REYQ48P8	1,560	1,440	1,320	1,200	1,080	960	840	720	600
RXYQ50P(A)	1,625	1,500	1,375	1,250	1,125	1,000	875	750	625
RXYQ52P(A)	1,690	1,560	1,430	1,300	1,170	1,040	910	780	650
RXYQ54P(A)	1,755	1,620	1,485	1,350	1,215	1,080	945	810	675

Indoor unit capacity index

Model	20	25	32	40	50	63	71	80	100	125	200	250
Capacity index	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 $= 30.5 \times \frac{25}{275} = 2.77\text{kW}$

Capacity of FXCQ40M $= 30.5 \times \frac{40}{275} = 4.44\text{kW}$

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:
  27,610 kcal/h (direct interpolation between 110 % and 120 % in the table)
- Individual capacity

Capacity of FXCQ25M $= 30.0 \times \frac{25}{281.25} = 2.7\text{kW}$

Capacity of FXCQ32M $= 30.0 \times \frac{32}{281.25} = 3.4\text{kW}$

Capacity of FXCQ40M $= 30.0 \times \frac{40}{281.25} = 4.3\text{kW}$

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

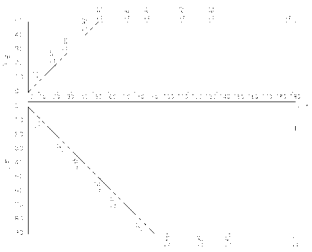
Then, the capacities have to be corrected for actual piping length according to the location of indoor and outdoor units and the distance between them.

2 Capacity correction ratio

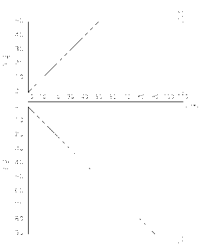
2 - 1 VRV®III heat recovery

REYQ8,22P

1. Rate of change in cooling capacity



2. 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 bellow, 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 gas 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
REYQ8PY1	Φ 12.7
REYQ22PY1	Φ 19.1

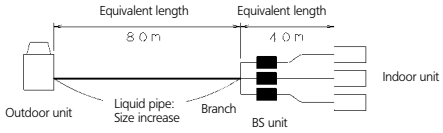
5. When the main sections of the interunit gas pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   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
REYQ8PY1	0.2
REYQ22PY1	0.4

   (Example) In case of REYQ22PY1



   In the above case (Heating)

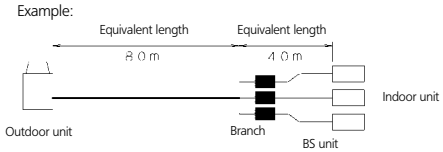
   Overall equivalent length = 80m x 0.4 + 40m = 72m

   The correction factor in capacity when Hp=0m is thus approximately 1.0.

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

[Diameter of pipe (standard size)]

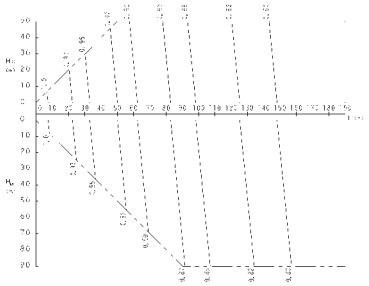
Model	Liquid
REYQ8PY1	Φ 9.5
REYQ22PY1	Φ 15.9

2 Capacity correction ratio

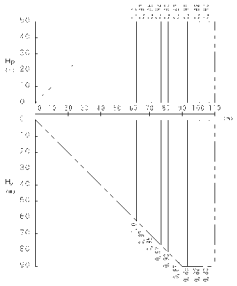
2 - 1 VRV®III heat recovery

REYQ10P

1. Rate of change in cooling capacity



2. 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 bellow, whichever smaller.

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

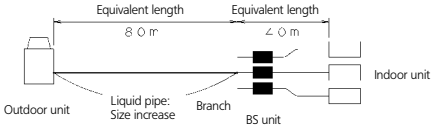
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the 100% combination
     X Capacity change rate due to piping length to the farthest indoor unit
   - Condition: Indoor unit combination ratio exceeds 100%.

     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 gas 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
REYQ10PY1	Φ 12.7

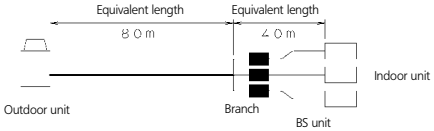
5. When the main sections of the interunit gas pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)
   Overall equivalent length = Equivalent length to main pipe x 0.2 + Equivalent length after branching

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

[Diameter of pipe (standard size)]

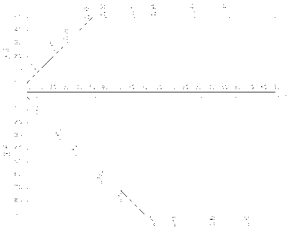
Model	Liquid
REYQ10PY1	Φ 9.5

2 Capacity correction ratio

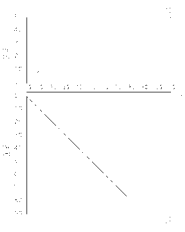
2 - 1 VRV®III heat recovery

REYQ12,18,26,28,30,38,40,42,44P

1. Rate of change in cooling capacity



2. 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 bellow, 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 gas 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	Model	Liquid
REYQ12PY1	Φ 15.9	REYQ30PY1	Φ 22.2	REYQ44PY1	Φ 22.2
REYQ18PY1	Φ 19.1	REYQ38PY1			
REYQ26PY1	Φ 22.2	REYQ40PY1			
REYQ28PY1		REYQ42PY1			

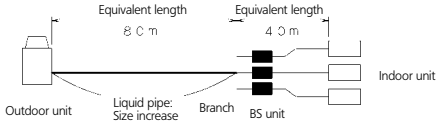
5. When the main sections of the interunit gas pipe diameters are increased the overall equivalent length should be calculated as follows. (Heating only)

   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	0.3	REYQ38PY1	0.4
REYQ18PY1	0.4	REYQ40PY1	
REYQ26PY1		REYQ42PY1	
REYQ28PY1		REYQ44PY1	
REYQ30PY1			

   (Example) In case of REYQ18PY1

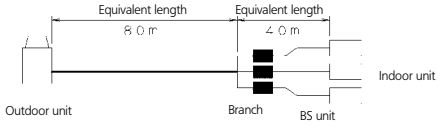


   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.

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

[Diameter of pipe (standard size)]

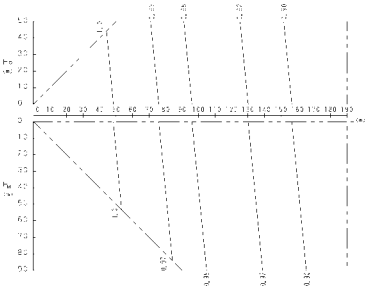
Model	Liquid	Model	Liquid
REYQ12PY1	Φ 12.7	REYQ38PY1	Φ 19.1
REYQ18PY1	Φ 15.9	REYQ40PY1	
REYQ26PY1	Φ 19.1	REYQ42PY1	
REYQ28PY1		REYQ44PY1	
REYQ30PY1			

2 Capacity correction ratio

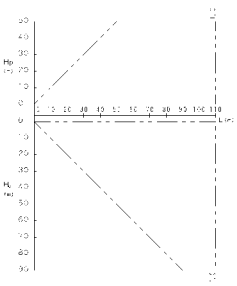
2 - 1 VRV®III heat recovery

REYQ14P

1. Rate of change in cooling capacity



2. 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 bellow, 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%.

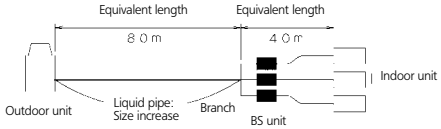
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor 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
REYQ14PY1	Φ 15.9

5. When the main sections of the interunit gas 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

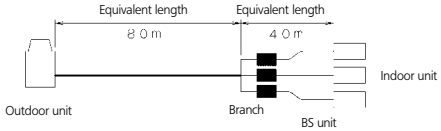
   Example:



   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 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 0.96.

Explanation of symbols

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

[Diameter of pipe (standard size)]

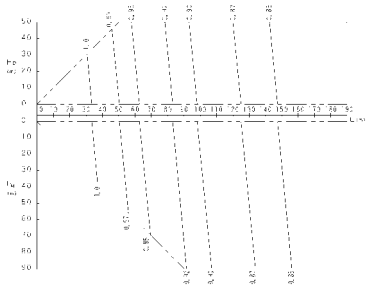
Model	Liquid
REYQ14PY1	Φ 12.7

2 Capacity correction ratio

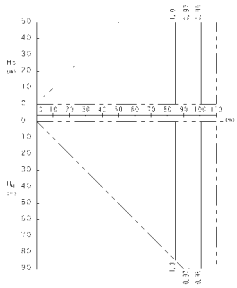
2 - 1 VRV®III heat recovery

REYQ16P

1. Rate of change in cooling capacity



2. Rate of change in heating capacity



3D058183

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 bellow, 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%.

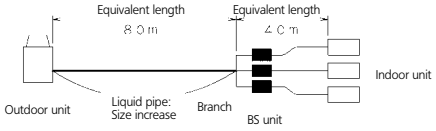
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor 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
REYQ16PY1	Φ 15.9

5. When the main sections of the interunit gas 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:



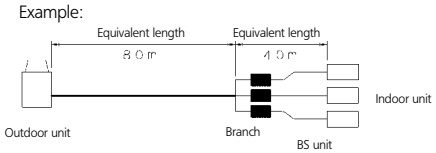
   In the above case (Heating)

   Overall equivalent length = 80m x 0.3 + 40m = 64m

   The correction factor in capacity when Hp=0m is thus approximately 1.0.
6. In 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 0.93.

Explanation of symbols

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

[Diameter of pipe (standard size)]

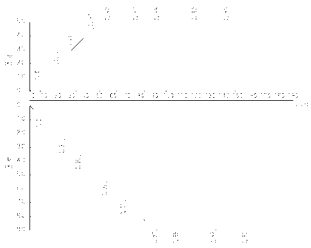
Model	Liquid
REYQ16PY1	Φ 12.7

2 Capacity correction ratio

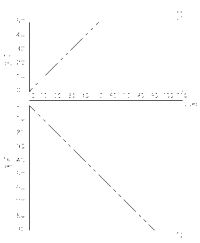
2 - 1 VRV®III heat recovery

REYQ20,32,34P

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 bellow, 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%.

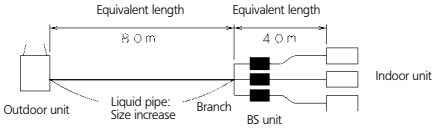
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor 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
REYQ20PY1	Φ19.1
REYQ32PY1	Φ22.2
REYQ34PY1	

5. When the main sections of the interunit gas 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

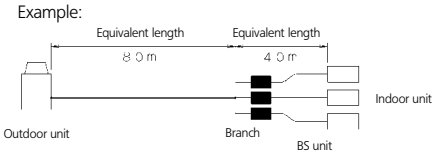
   Example:



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

[Diameter of pipe (standard size)]

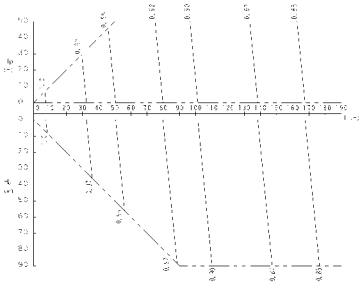
Model	Liquid
REYQ20PY1	Φ15.9
REYQ32PY1	Φ19.1
REYQ34PY1	

2 Capacity correction ratio

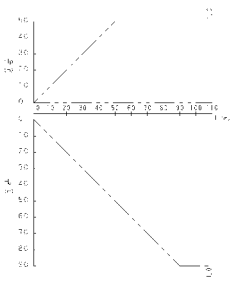
2 - 1 VRV®III heat recovery

REYQ24P

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 bellow, 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%.

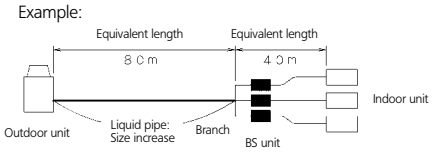
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor 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
REYQ24PY1	ϕ 19.1

5. When the main sections of the interunit gas 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

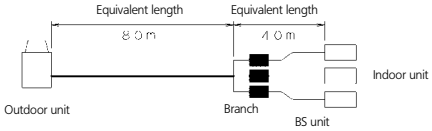
   Example:



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

[Diameter of pipe (standard size)]

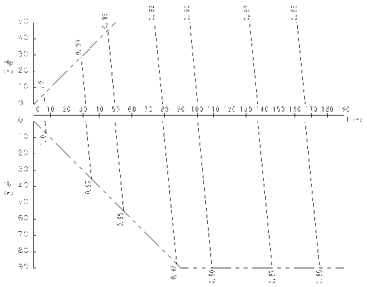
Model	Liquid
REYQ24PY1	ϕ 15.9

2 Capacity correction ratio

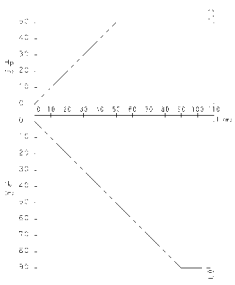
2 - 1 VRV®III heat recovery

REYQ36P

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 bellow, 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

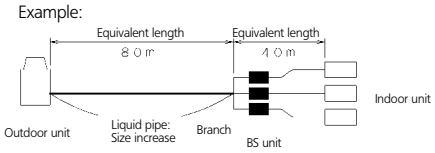
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor unit-branch sections) must be increased.
   When level difference is 50m or more, the diameter of the main liquid pipe (outdoor unit-branch sections) must be increased.
   [Diameter of above case]

Model	Liquid
REYQ36PY1	ϕ 22.2

5. When the main sections of the interunit gas 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:

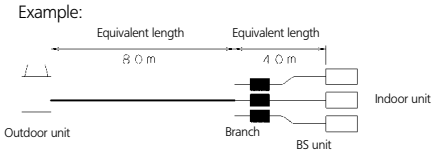


   In the above case (Heating)
   Overall equivalent length = 80m x 0.4 + 40m = 72m
   The correction factor in capacity when Hp=0m is thus approximately 1.0.

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

[Diameter of pipe (standard size)]

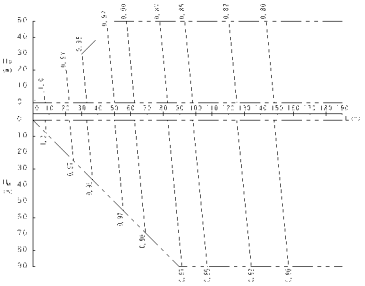
Model	Liquid
REYQ36PY1	ϕ 19.1

2 Capacity correction ratio

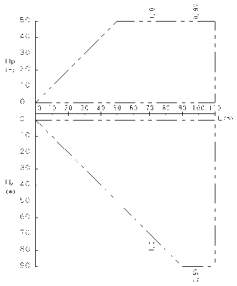
2 - 1 VRV®III heat recovery

REYQ46P

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 bellow, 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%.

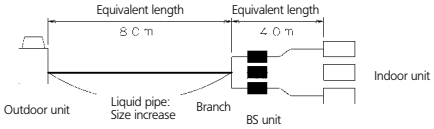
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor 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
REYQ46PY1	Φ 22.2

5. When the main sections of the interunit gas 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

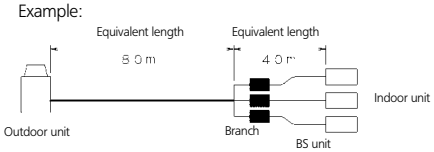
   Example:



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

[Diameter of pipe (standard size)]

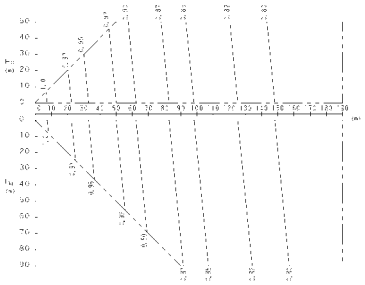
Model	Liquid
REYQ46PY1	Φ 19.1

2 Capacity correction ratio

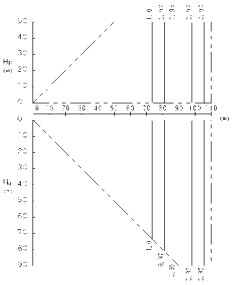
2 - 1 VRV®III heat recovery

REYQ48P

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 bellow, 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%.

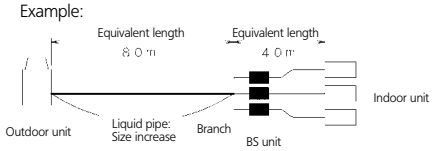
     Maximum A/C capacity of outdoor units = A/C capacity of outdoor units obtained from capacity characteristic table at the combination
     X Capacity change rate due to piping length to the farthest indoor unit
4. When overall equivalent pipe length is 90m or more, the diameter of the main gas pipes (outdoor 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
REYQ48PY1	ϕ 22.2

5. When the main sections of the interunit gas 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

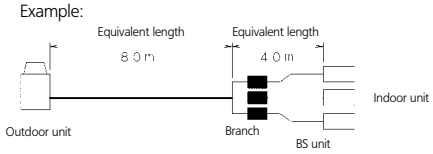
   Example:



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

[Diameter of pipe (standard size)]

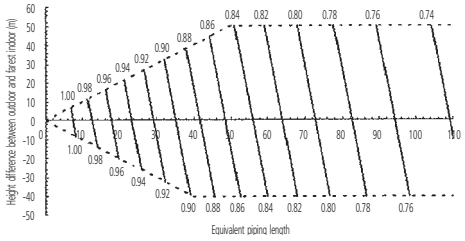
Model	Liquid
REYQ48PY1	ϕ 19.1

2 Capacity correction ratio

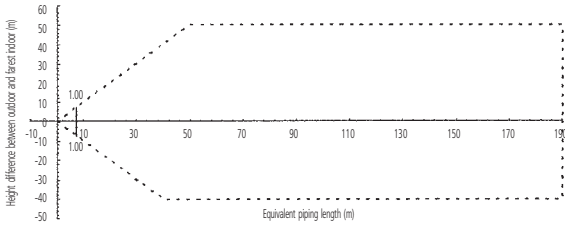
2 - 2 VRV®III heat pump

RXYQ5P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ5P	ø 19.1	ø 9.5

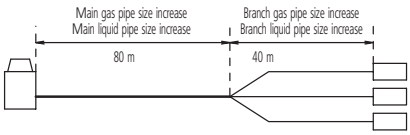
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ5P	ø 15.9	ø 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 x Correction factor
Choose a 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

7 Example



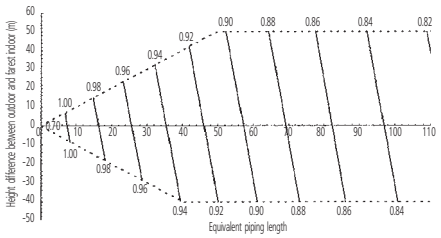
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 120m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.78
heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

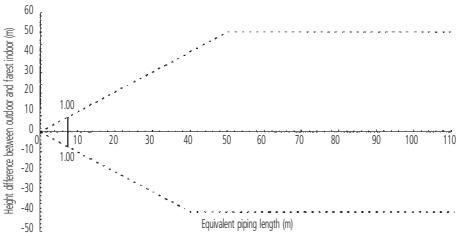
2 - 2 VRV®III heat pump

RXYQ8P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ8P	ø 22.2	ø 12.7

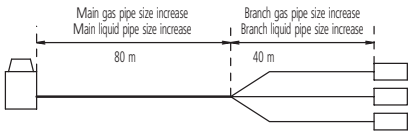
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ8P	ø 19.1	ø 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 x Correction factor
Choose a 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

7 Example



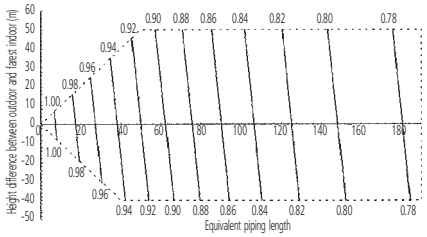
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.86
heating capacity when height difference = 0 is thus approximately 1.0

2 Capacity correction ratio

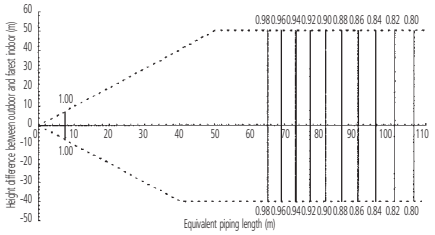
2 - 2 VRV®III heat pump

RXYQ10P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ10P	ø 25.4*	ø 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).

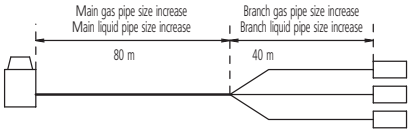
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ10P	ø 22.2	ø 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 x Correction factor
Choose a 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

7 Example



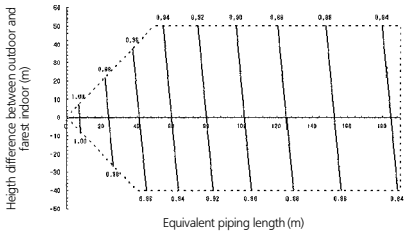
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.87
heating capacity when height difference = 0 is thus approximately 0.90

2 Capacity correction ratio

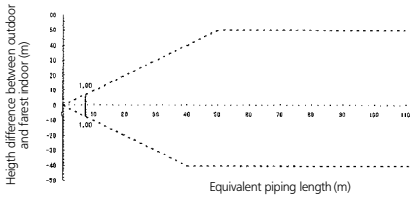
2 - 2 VRV®III heat pump

RXYQ12,14,24,36P

Correction ratio for cooling capacity



Correction ratio for heating capacity



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 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 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 the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased.
   For new diameters, see below.

model	Gas pipe	Liquid pipe
RXYQ12+14P	28,6	15,9
RXYQ24P	34,9	19,1
RXYQ36P	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).

model	Gas pipe	Liquid pipe
RXYQ12+14P	28,6	12,7
RXYQ24P	34,9	15,9
RXYQ36P	41,3	19,1

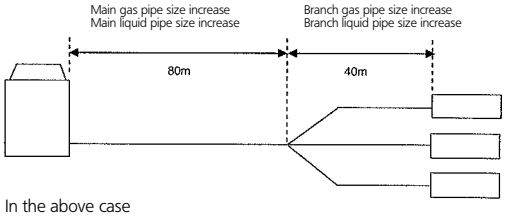
6. Equivalent length used in the above figures is based upon the following equivalent length

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

   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 = 80mx1,0 + 40mx1,0 = 120m
(Heating) Overall equivalent length = 80mx0,5 + 40mx1,0 = 80m

The rate of change in:
Cooling capacity when heigth difference = 0 is thus approximately 0,89
Heating capacity when heigth difference = 0 is thus approximately 1,0

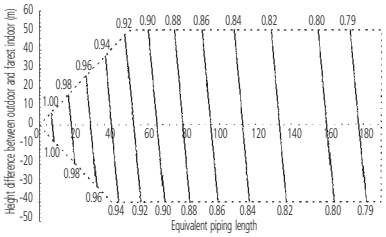
3TW27232-6A

2 Capacity correction ratio

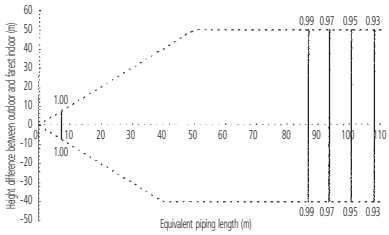
2 - 2 VRV®III heat pump

RXYQ16P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ16P	ø 31.8*	ø 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).

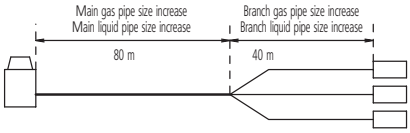
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ16P	ø 28.6	ø 12.7

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 x Correction factor
Choose a 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

7 Example



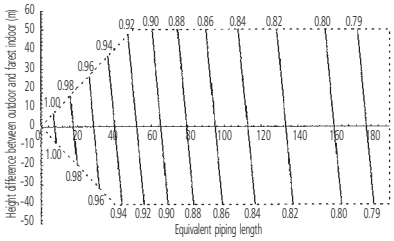
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.88
heating capacity when height difference = 0 is thus approximately 0.99

2 Capacity correction ratio

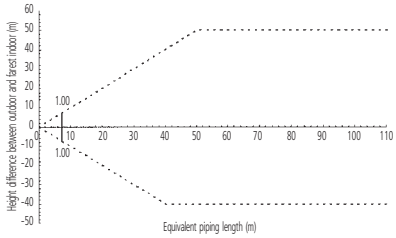
2 - 2 VRV®III heat pump

RXYQ18,26,28,30,38,40,42,44P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ18P	ø 31.8*	ø 19.1
RXYQ26-30P	ø 38.1*	ø 22.2
RXYQ38-44P	ø 41.3	ø 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).

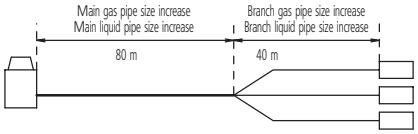
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ18P	ø 28.6	ø 15.9
RXYQ26-30P	ø 34.9	ø 19.1
RXYQ38-44P	ø 41.3	ø 19.1

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 x Correction factor
Choose a 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

7 Example



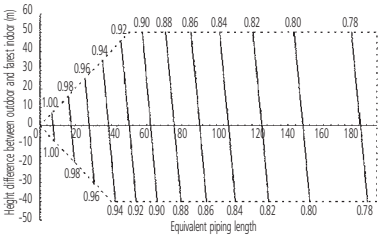
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

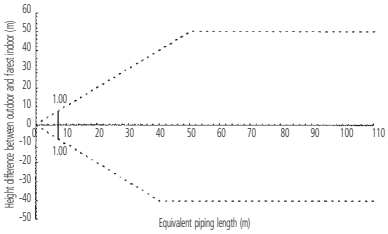
2 - 2 VRV®III heat pump

RXYQ20,32,34P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ20P	ø 31.8*	ø 19.1
RXYQ32-34P	ø 38.1*	ø 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).

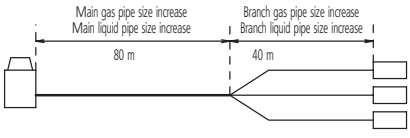
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ20P	ø 28.6	ø 15.9
RXYQ32-34P	ø 34.9	ø 19.1

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 x Correction factor
Choose a 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

7 Example



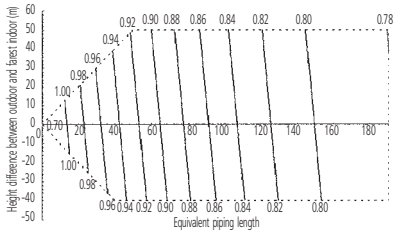
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.88
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

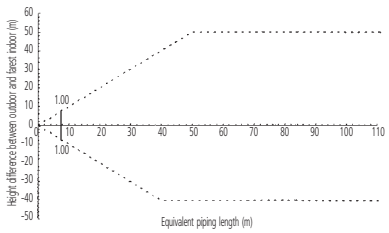
2 - 2 VRV®III heat pump

RXYQ22P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ22P	ø 31.8*	ø 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).

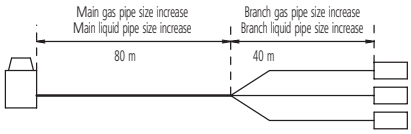
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ22P	ø 28.6	ø 15.9

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 x Correction factor
Choose a 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

7 Example



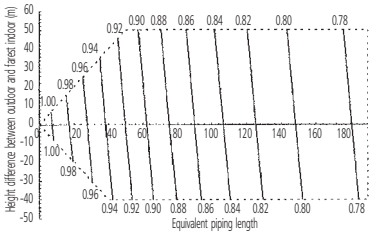
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.88
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

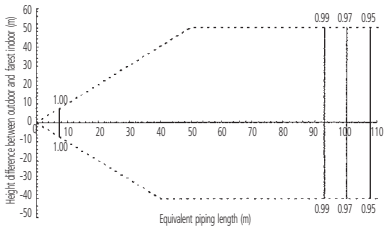
2 - 2 VRV®III heat pump

RXYQ46P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ46P	ø 41.3	ø 22.2

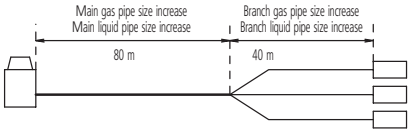
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ46P	ø 41.3	ø 19.1

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 x Correction factor
Choose a 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

7 Example



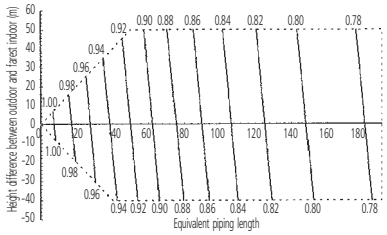
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

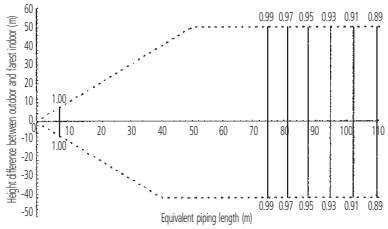
2 - 2 VRV®III heat pump

RXYQ48P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ48P	ø 41.3	ø 22.2

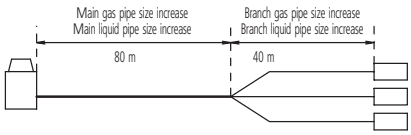
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ48P	ø 41.3	ø 19.1

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 x Correction factor
Choose a 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

7 Example



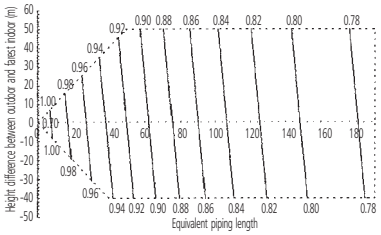
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

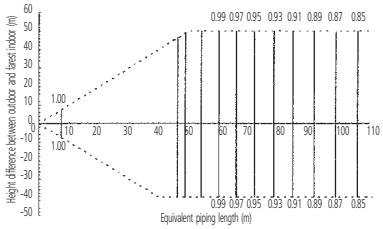
2 - 2 VRV®III heat pump

RXYQ50P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ50P	ø 41.3	ø 22.2

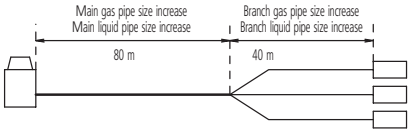
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ50P	ø 41.3	ø 19.1

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 x Correction factor
Choose a 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

7 Example



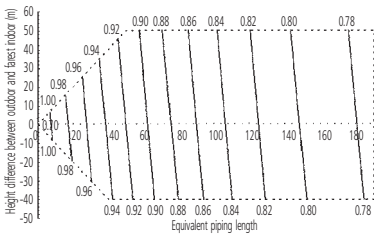
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

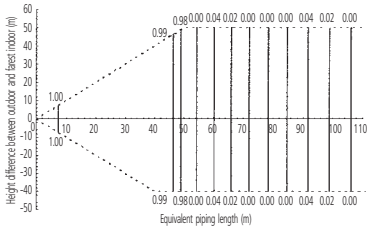
2 - 2 VRV®III heat pump

RXYQ52P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ52P	ø 41.3	ø 22.2

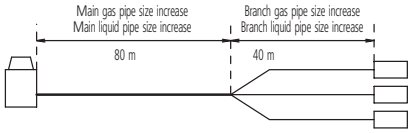
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ52P	ø 41.3	ø 19.1

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 x Correction factor
Choose a 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

7 Example



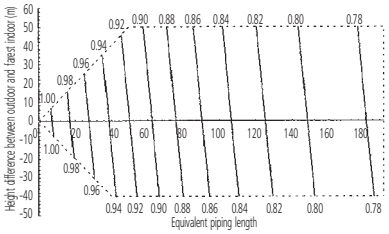
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

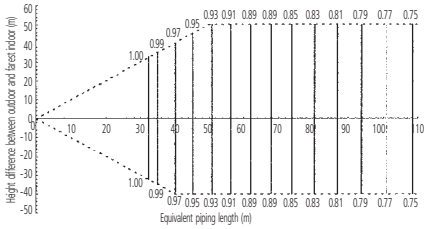
2 - 2 VRV®III heat pump

RXYQ54P

- Correction ratio for cooling capacity



- Correction ratio for heating capacity



3TW27232-6

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 from 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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXYQ54P	ø 41.3	ø 22.2

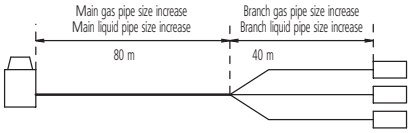
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXYQ54P	ø 41.3	ø 19.1

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 x Correction factor
Choose a 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

7 Example



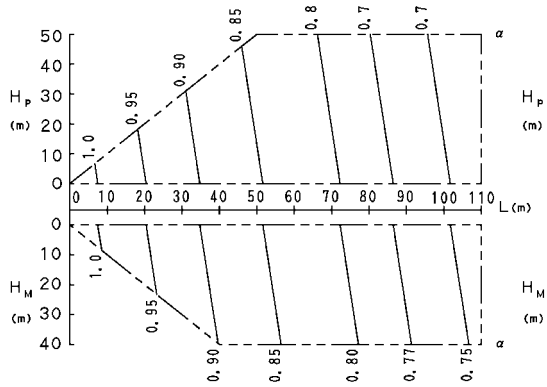
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
(Heating) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.83
heating capacity when height difference = 0 is thus approximately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

2 Capacity correction ratio

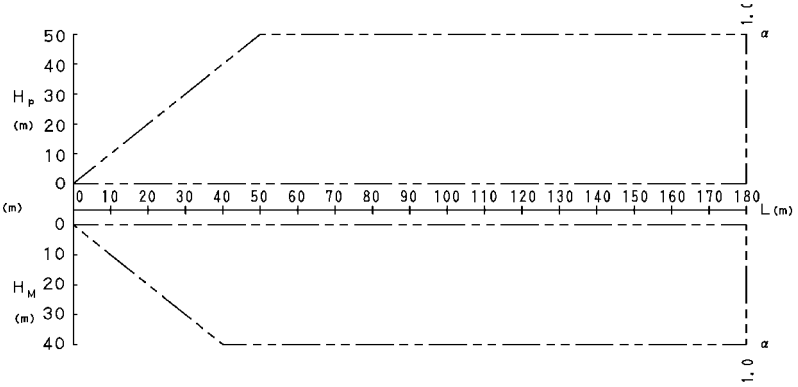
2 - 3 VRV®III-S

RXYSQ4,5PAV1/PAY1

- Rate of change in cooling capacity



- Rate of change in heating capacity



- Rate of change in heating capacity

3D045710D

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.

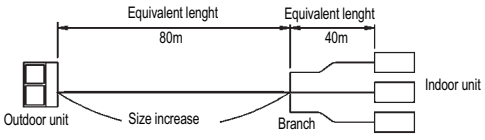
2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.

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 length of piping differs depending on the indoor unit, maximum capacity of each 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 RXYMQ4, 5MV4A * RXYSQ4, 5MV7V3B * RXYMQ4,5MVLT * RXYMQ4,5PV4A * RXYMQ4P,5PVE * RXYMQ4P,5PVE * RXYSQ4, 5P7V3B * RXYSQ4,5P7Y1B * RXYSQ4,5PA7V1B * RXYSQ4,5PA7Y1B>

4 When overall equivalent pipe length is 90 or more, the diameter of the main gas pipes (Outdoor unit-branch sections) must be increased.
[Diameter of above case]

Model		gas	liquid
RXYMQ4,5MV4A	RXYMQ4,5PV4A, VE	ø 19.1	Not Increased
RXYSQ4,5M7V3B	RXMQ4,5PVE		
RXYMQ4,5MVLT	RXYSQ4,5P7V3B		
RXYSQ4,5P7Y1B	RXYSQ4,5PA7V1B		
	RXYSQ4,5PA7Y1B		

5 When the main sections of the interunit gas pipe 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: RXYMQ4, 5MV4A
RXYSQ4, 5MV7V3B
RXYMQ4,5MVLT
RXYMQ4,5PV4A, VE
RXYMQ4P,5PVE
RXYSQ4, 5P7V3B
RXYSQ4,5P7Y1B
RXYSQ4,5PA7V1B
RXYSQ4,5PA7Y1B>



In the above case
Overall equivalent length = 80m x 0.5 + 40m = 80m
The correction factor in capacity when Hp=0m is thus approximately 0.78.

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

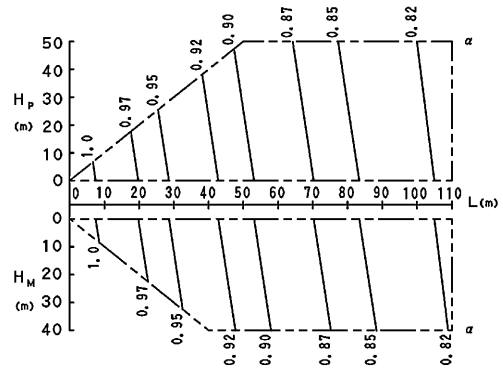
[Diameter of pipes]

Model	gas	liquid
RXYMQ4,5MV4A RXYSQ4,5M7V3B RXYMQ4,5MVLT RXYMQ4,5PV4A, VE RXMQ4,5PVE RXYSQ4,5P7V3B RXYSQ4,5P7Y1B RXYSQ4,5PA7V1B RXYSQ4,5PA7Y1B	ø 19.1	Not Increased

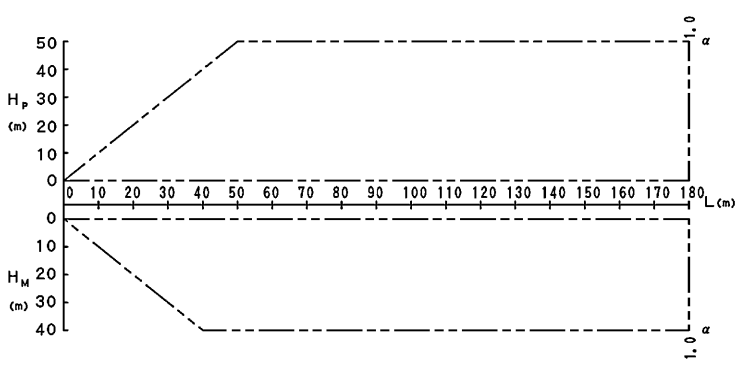
2 Capacity correction ratio

2 - 3 VRV®III-S

- Rate of change in cooling capacity



- Rate of change in heating capacity



- Rate of change in heating capacity

3D045961D

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.

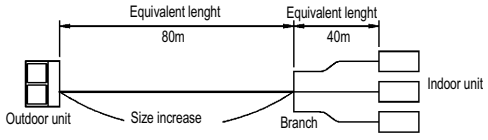
2 With this outdoor unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.

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 length of piping differs depending on the indoor unit, maximum capacity of each 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 * RXYSQ6MV7V3B * RXYMQ6MVLT * RXYMQ6PV4A * RXYMQ6PVE * RXYMQ6PVE * RXYSQ6P7V3B * RXYSQ6P7Y1B * RXYSQ6PA7V1B * RXYSQ6PA7Y1B>

4 When overall equivalent pipe length is 90 or more, the diameter of the main gas pipes (Outdoor unit-branch sections) must be increased.
[Diameter of above case]

Model		gas	liquid
RXYMQ6MV4A	RXYMQ6PV4A, VE	ø 22.2	Not Increased
RXYSQ6M7V3B	RXMQ6PVE		
RXYMQ6MVLT	RXYSQ6P7V3B		
RXYSQ6P7Y1B	RXYSQ6PA7V1B		
	RXYSQ6PA7Y1B		

5 When the main sections of the interunit gas pipe 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: RXYMQ6MV4A
RXYSQ6MV7V3B
RXYMQ6MVLT
RXYMQ6PV4A, VE
RXYMQ6PVE
RXYSQ6P7V3B
RXYSQ6P7Y1B
RXYSQ6PA7V1B
RXYSQ6PA7Y1B>



In the above case
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 pipes]

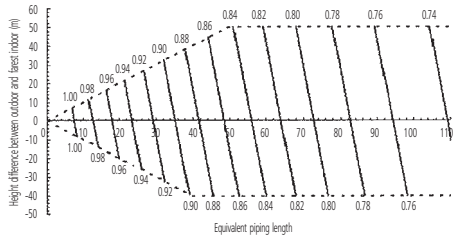
Model	gas	liquid
RXYMQ6MV4A RXYSQ6M7V3B RXYMQ6MVLT RXYMQ6PV4A, VE RXMQ6PVE RXYSQ6P7V3B RXYSQ6P7Y1B RXYSQ6PA7V1B RXYSQ6PA7Y1B	ø 19.1	ø 9.5

2 Capacity correction ratio

2 - 4 VRV®III cooling only

RXQ5P

- Correction ratio for cooling capacity



3TW27302-6

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 from the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling.

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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXQ5P	ø 19.1	ø 9.5

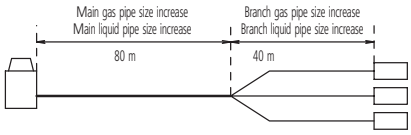
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXQ5P	ø 15.9	ø 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 x Correction factor
Choose a correction factor from the following table.
When cooling capacity is calculated: gas pipe size.

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

7 Example



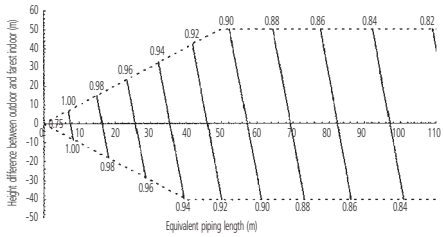
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.78

2 Capacity correction ratio

2 - 4 VRV®III cooling only

RXQ8P

- Correction ratio for cooling capacity



3TW27302-6

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 from the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling.

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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXQ8P	ø 22.2	ø 12.7

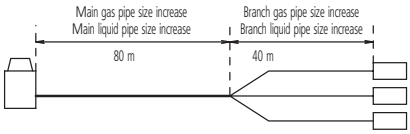
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXQ8P	ø 19.1	ø 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 x Correction factor
Choose a correction factor from the following table.
When cooling capacity is calculated: gas pipe size.

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

7 Example



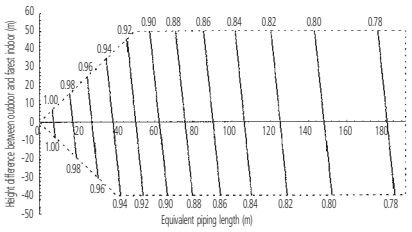
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.86

2 Capacity correction ratio

2 - 4 VRV®III cooling only

RXQ10P

- Correction ratio for cooling capacity



3TW27302-6

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 from the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling.

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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXQ10P	ø 25.4*	ø 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).

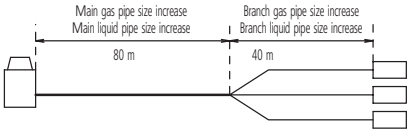
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXQ10P	ø 22.2	ø 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 x Correction factor
Choose a correction factor from the following table.
When cooling capacity is calculated: gas pipe size.

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

7 Example



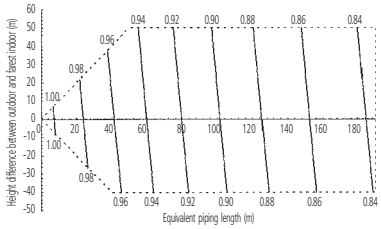
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.87

2 Capacity correction ratio

2 - 4 VRV®III cooling only

RXQ12,14P

- Correction ratio for cooling capacity



3TW27302-6

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 from the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling.

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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXQ12-14P	ø 28.6	ø 15.9

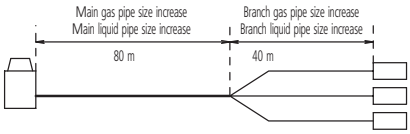
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXQ12-14P	ø 28.6	ø 12.7

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 x Correction factor
Choose a correction factor from the following table.
When cooling capacity is calculated: gas pipe size.

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

7 Example



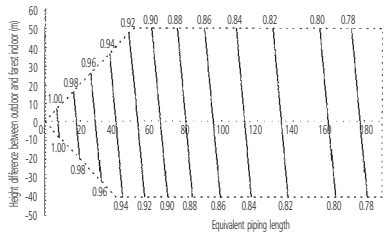
In the above case
(Cooling) Overall equivalent length = 80m x 1.0 + 40m x 1.0 = 120m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.89

2 Capacity correction ratio

2 - 4 VRV®III cooling only

RXQ16P

- Correction ratio for cooling capacity



3TW27302-6

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 from the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling.

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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXQ5P	ø 31.8*	ø 15.9

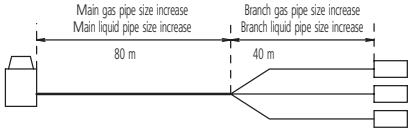
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXQ5P	ø 28.6	ø 12.7

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 x Correction factor
Choose a correction factor from the following table.
When cooling capacity is calculated: gas pipe size.

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

7 Example



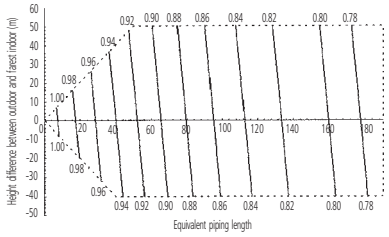
In the above case
(Cooling) Overall equivalent length = 80m x 0.5 + 40m x 1.0 = 80m
The rate of change in:
cooling capacity when height difference = 0 is thus approximately 0.88

2 Capacity correction ratio

2 - 4 VRV®III cooling only

RXQ18P

- Correction ratio for cooling capacity



3TW27302-6

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 from the capacity correction ratio, shown in the above figures.

2 With this outdoor unit, constant evaporating pressure control when cooling.

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 from capacity table at installed connection ratio x correction ratio of piping to farest indoor

4 When the overall equivalent pipe length is 90m or more, main gas and liquid pipe diameters must be increased..
For new diameters see below.

Model	gas pipe	liquid pipe
RXQ18P	ø 31.8*	ø 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).

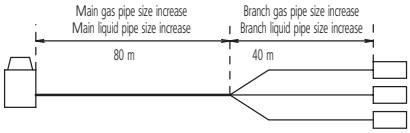
5 When the pipe length after the first refrigerant branch kit is more than 40m, pipe size between first and final branch kit must be increased (refer also to installation manual).
Diameter of main pipes (standard size)

Model	gas pipe	liquid pipe
RXQ18P	ø 28.6	ø 15.9

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 x Correction factor
Choose a correction factor from the following table.
When cooling capacity is calculated: gas pipe size
.

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

7 Example



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

3 Integrated heating capacity coefficient

REYQ8-16P8/REMQ8-16P8

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

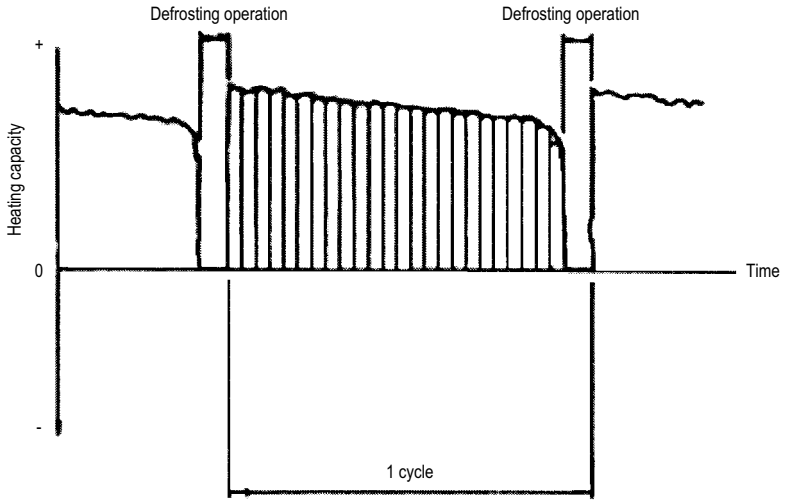
Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

A = B x C

Integrating 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



3TW30322-3

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

RXYQ5-18P(A)

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

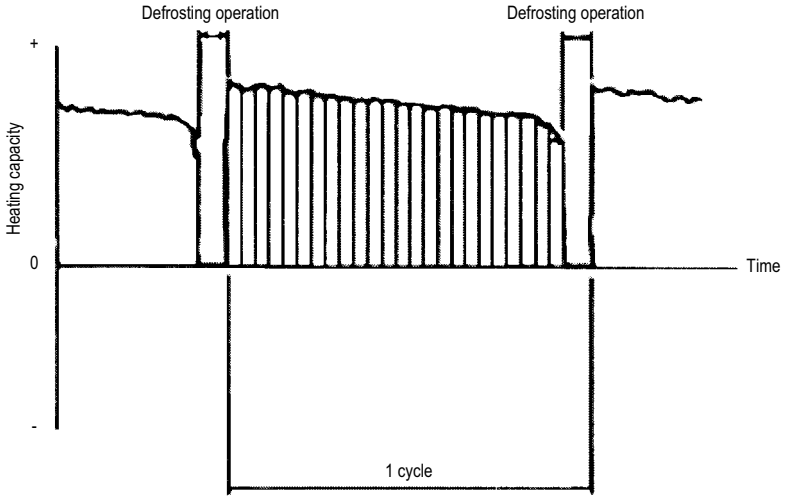
Value given in table of capacity characteristics = B

Integrating correction factor for frost accumulation (kW) = C

A = B x C

Integrating 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



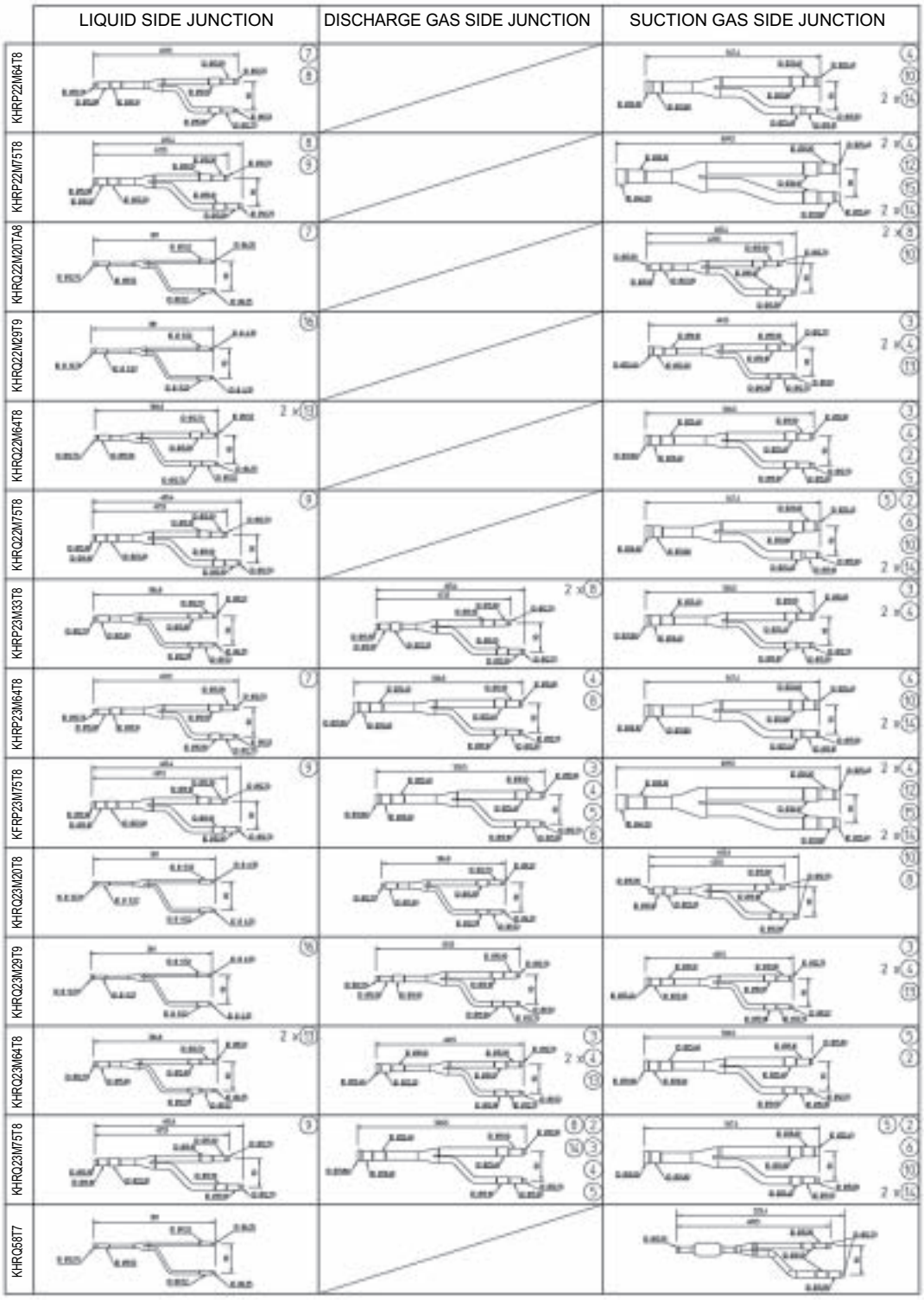
3TW27232-7

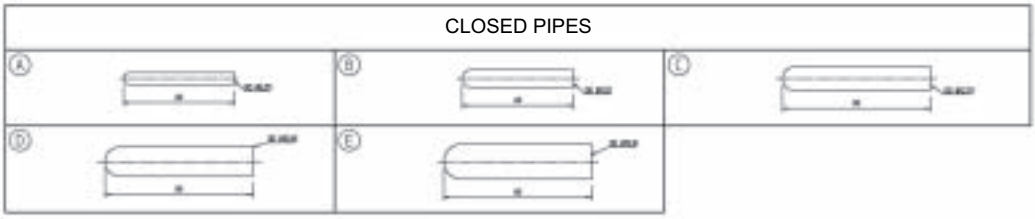
NOTE

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.

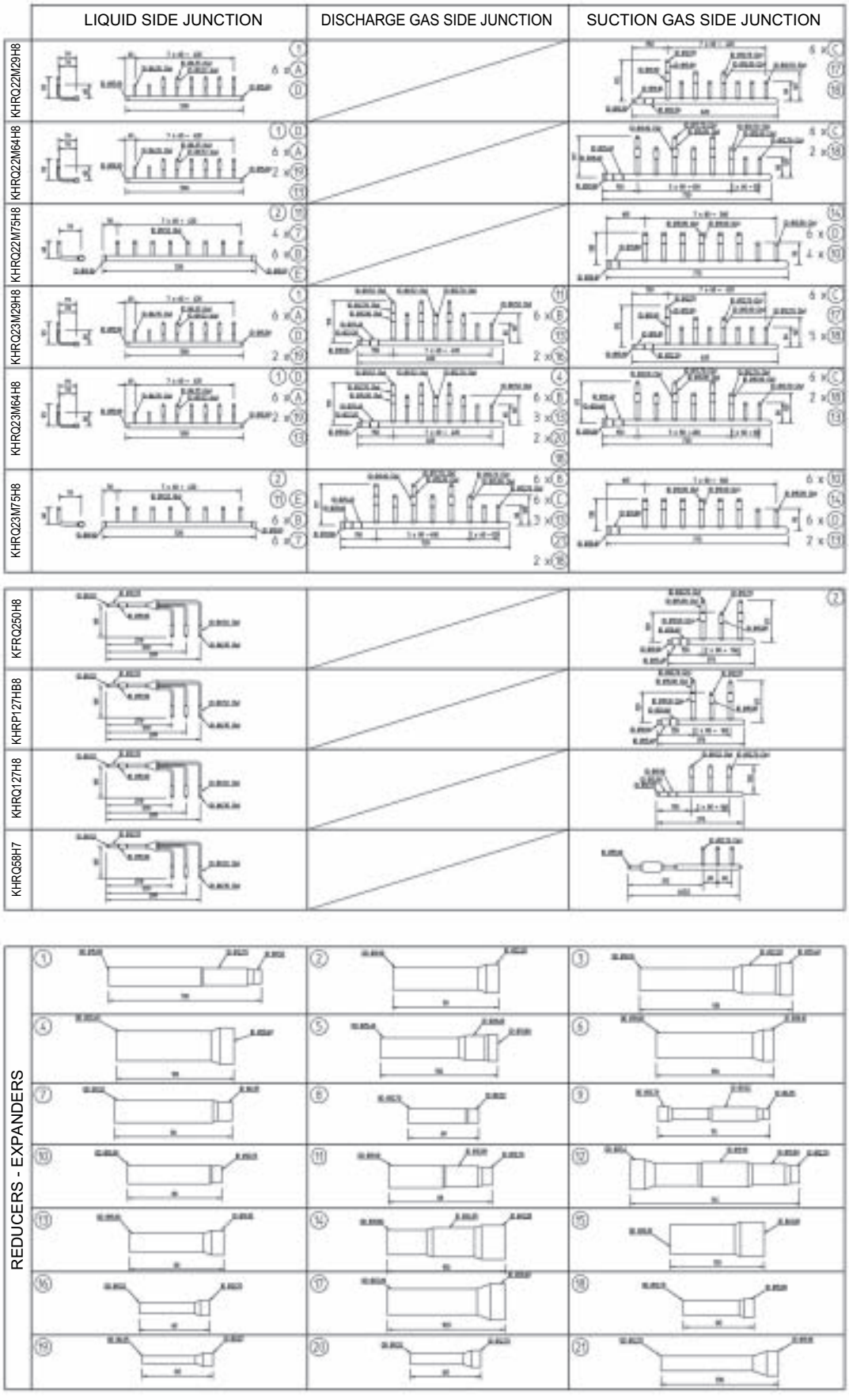
4 Refnet pipe systems





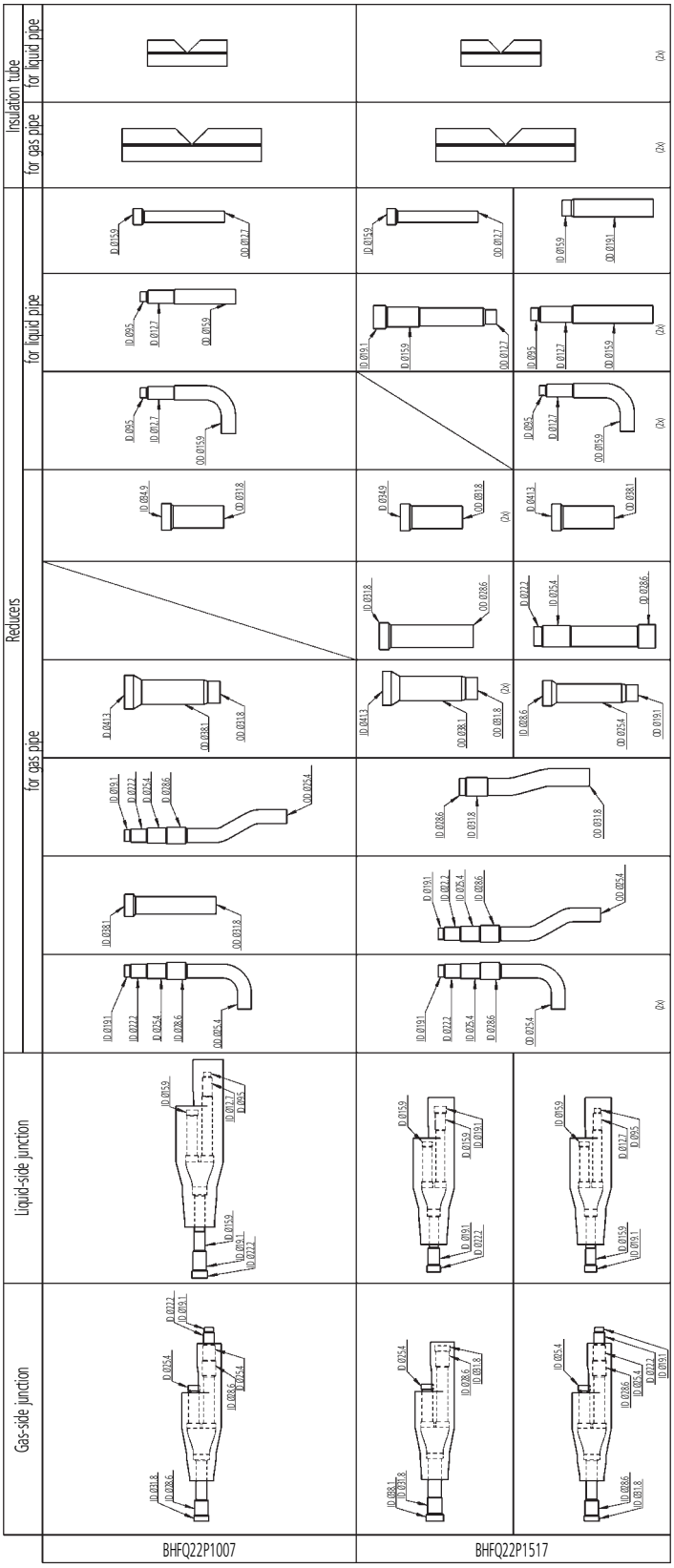
1TW25799-4D

4 Refnet pipe systems



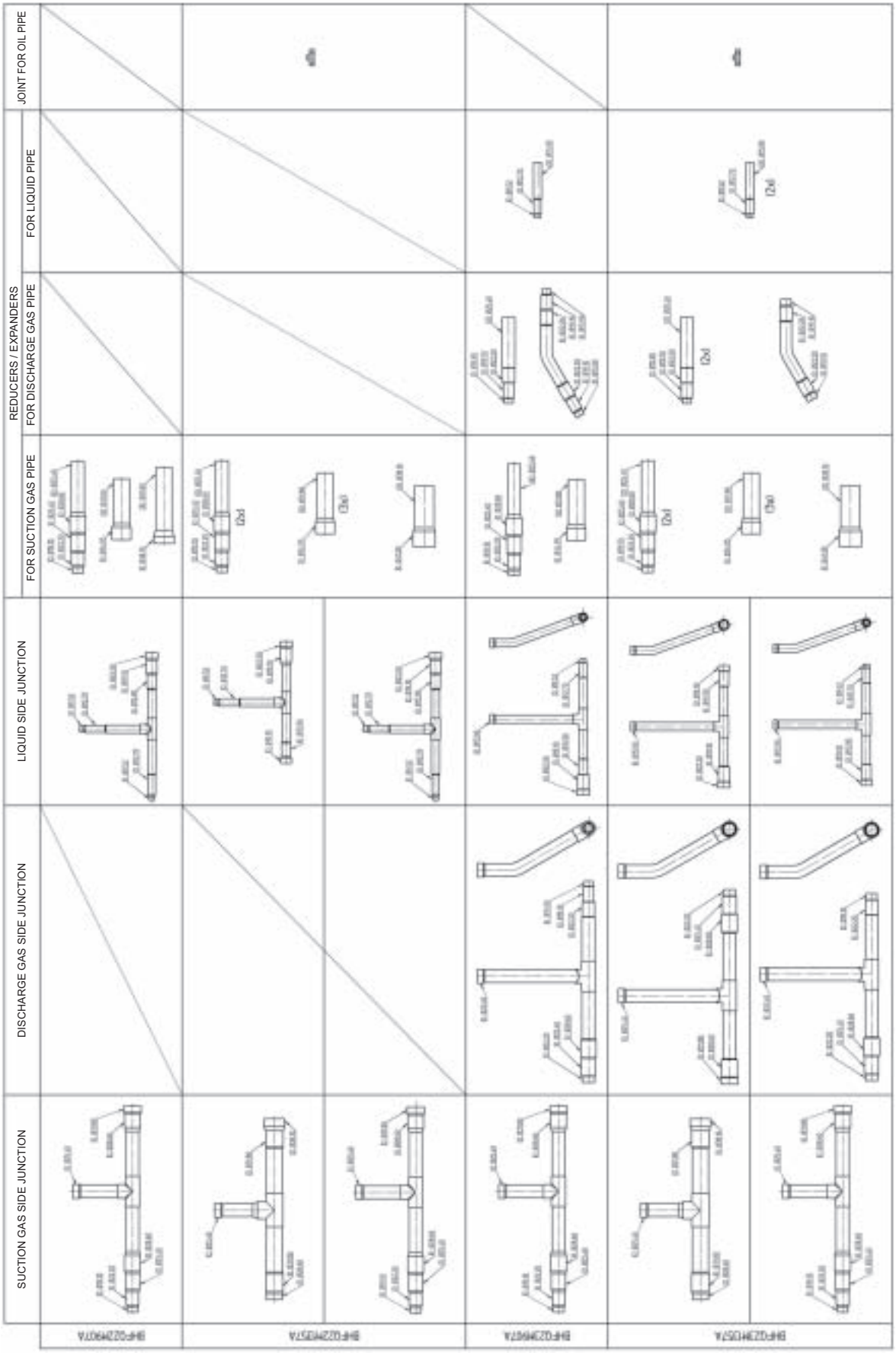
1TW25799-4D

4 Refnet pipe systems

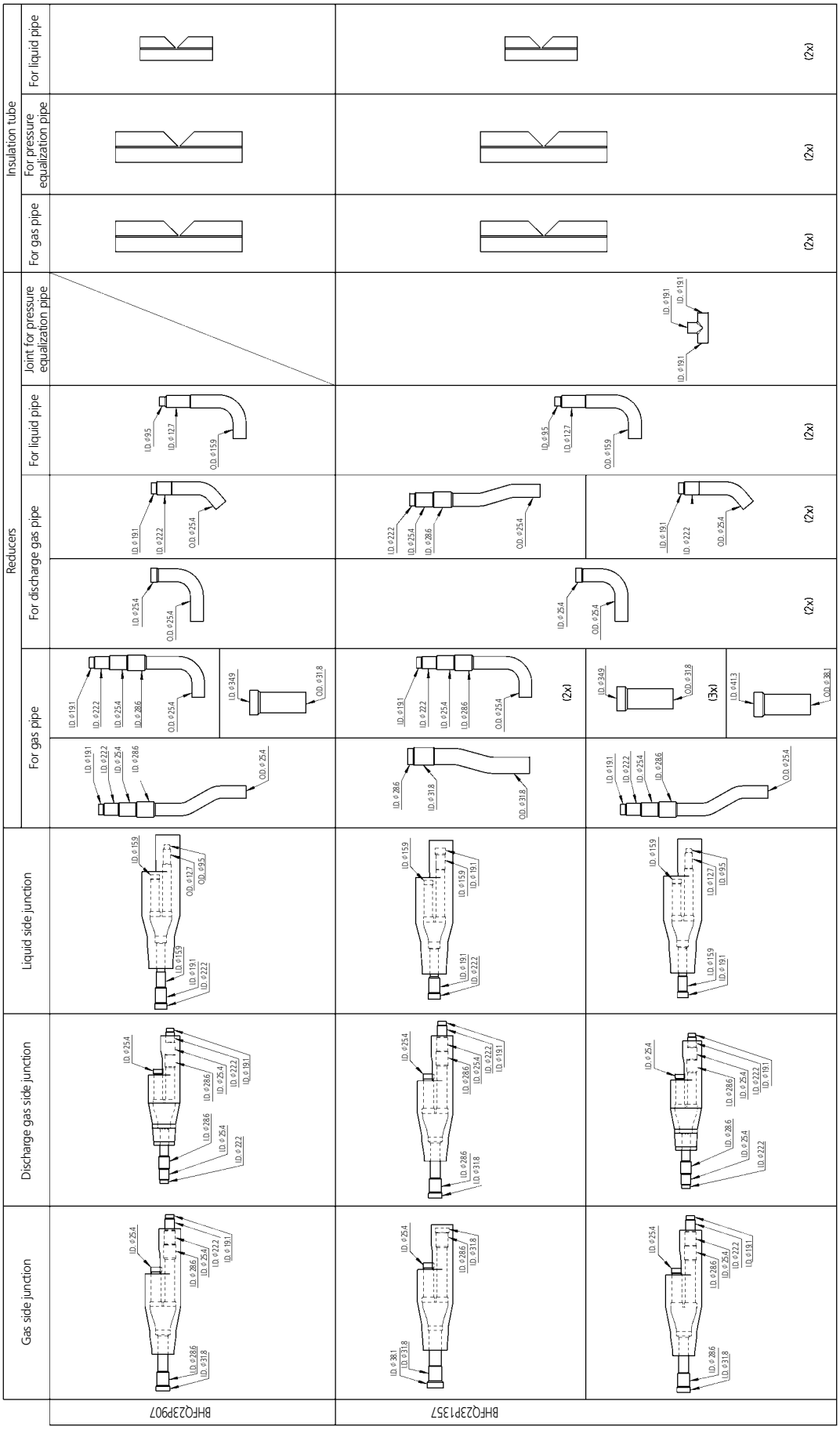


4TW27239-1

4 Refnet pipe systems

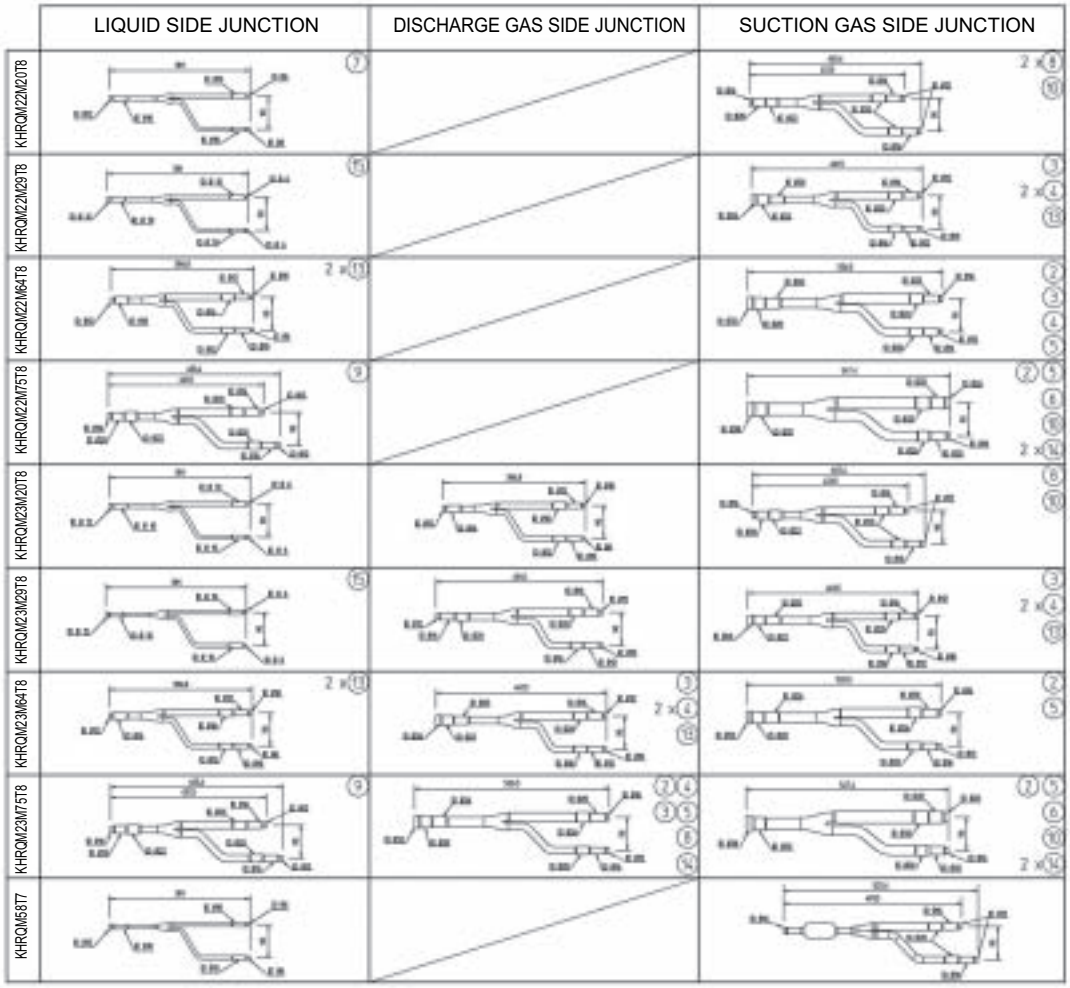


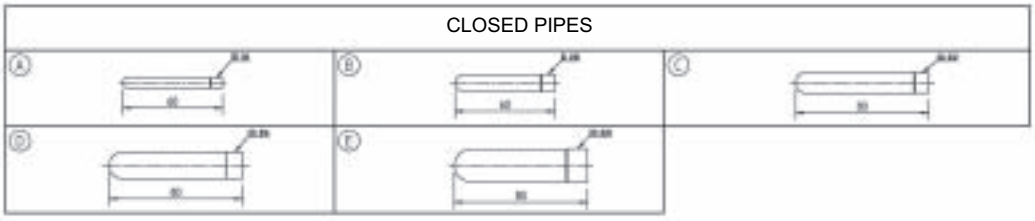
2TW25799-6


Reducers
Insulation tube
For gas pipe
For discharge gas pipe
For liquid pipe
Joint for pressure equalization pipe
For gas pipe
For pressure equalization pipe
For liquid pipe
Liquid side junction
Discharge gas side junction
Gas side junction
BHFQ23P907
BHFQ23P1357
(2x)
(3x)

2TW29119-1

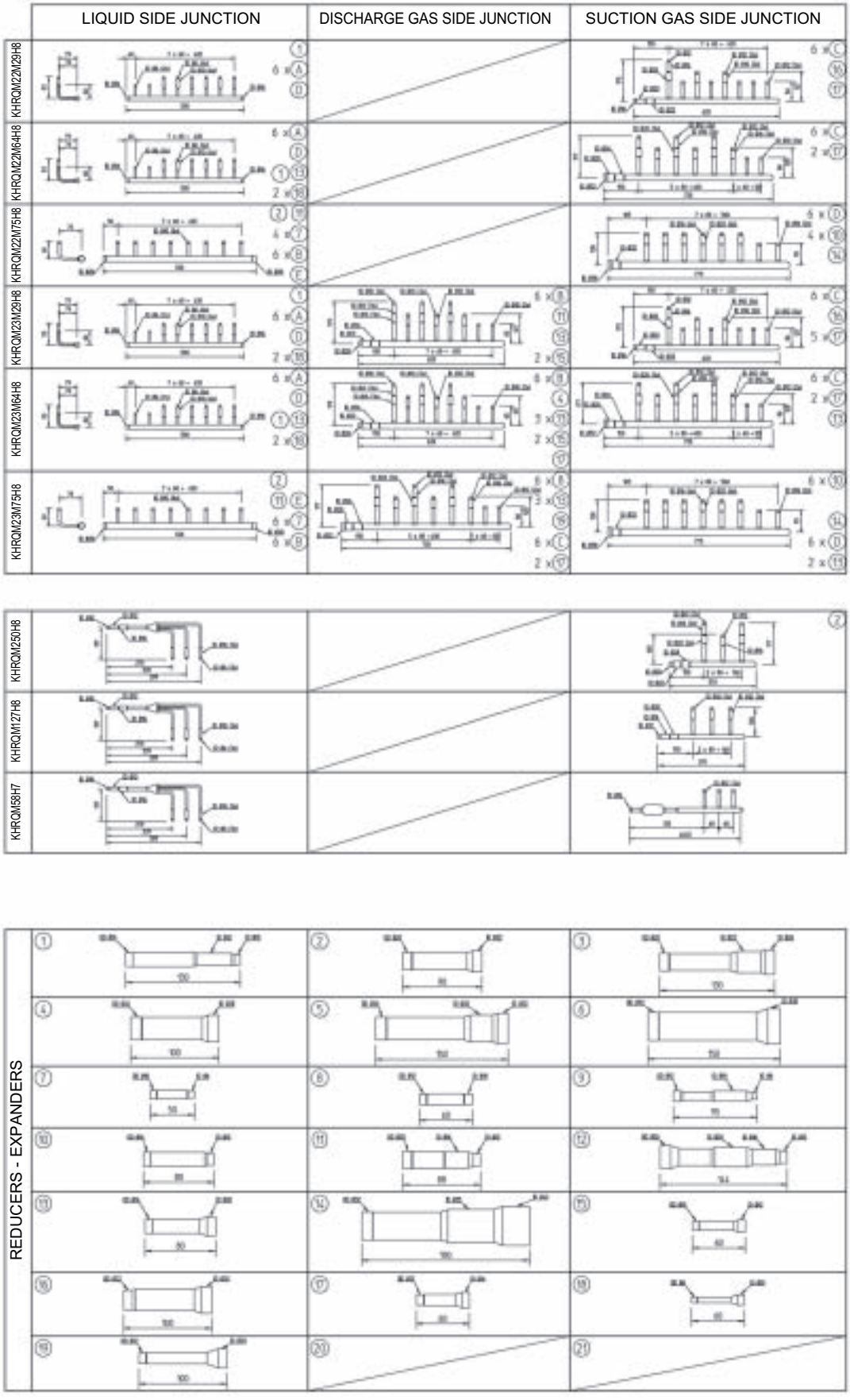
4 Refnet pipe systems





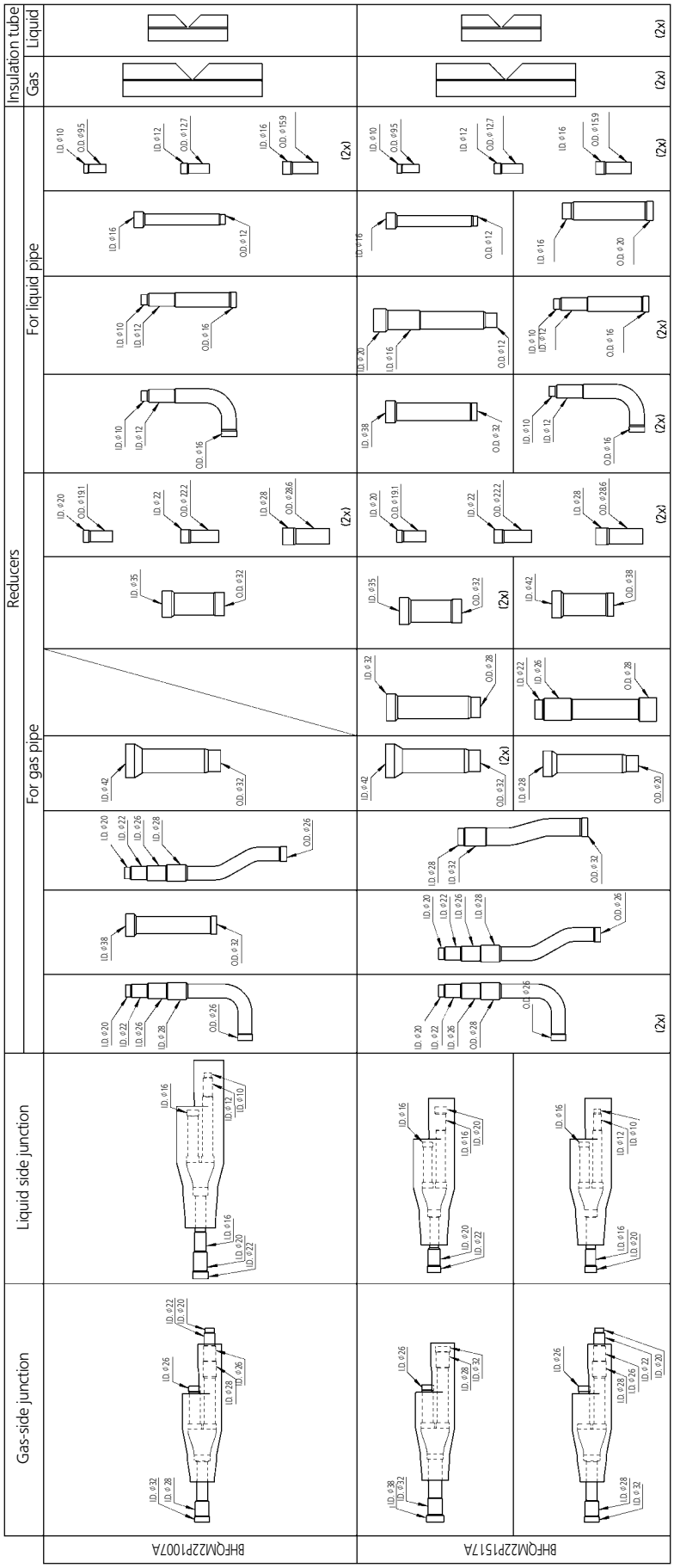
1TW29479-1A

4 Refnet pipe systems

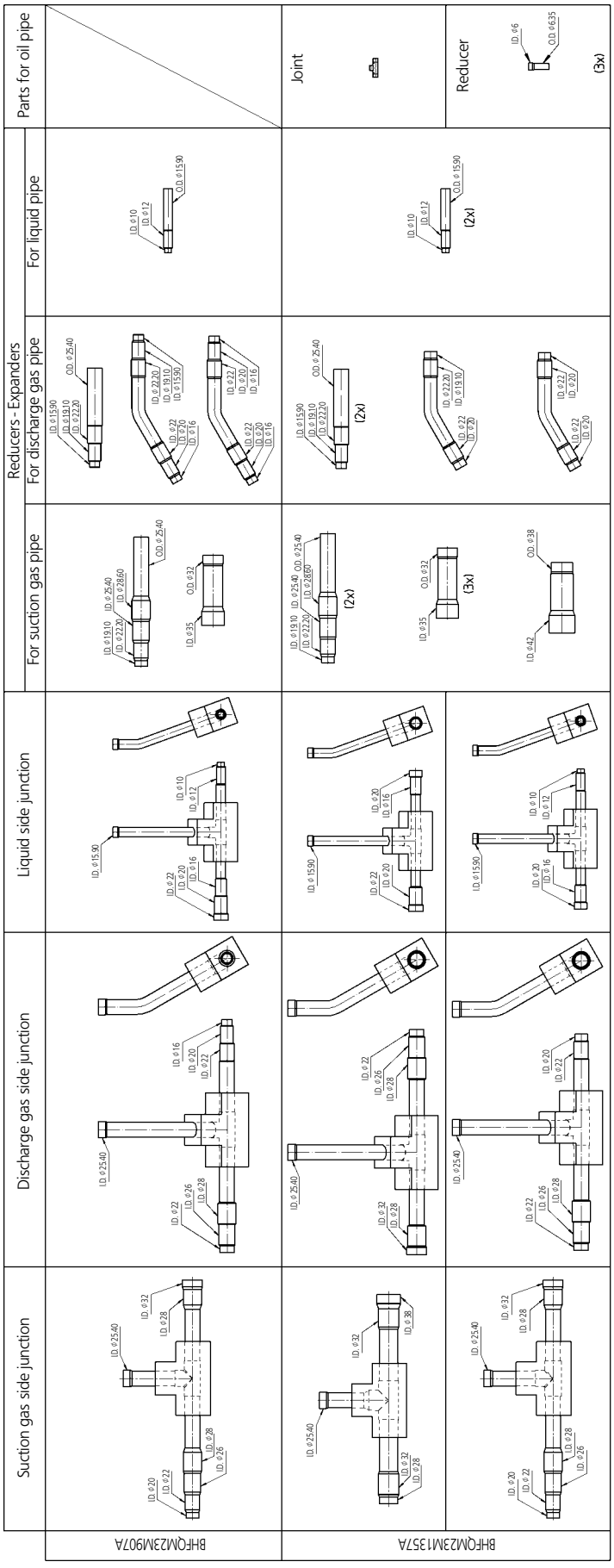


1TW29479-1A

4 Refnet pipe systems

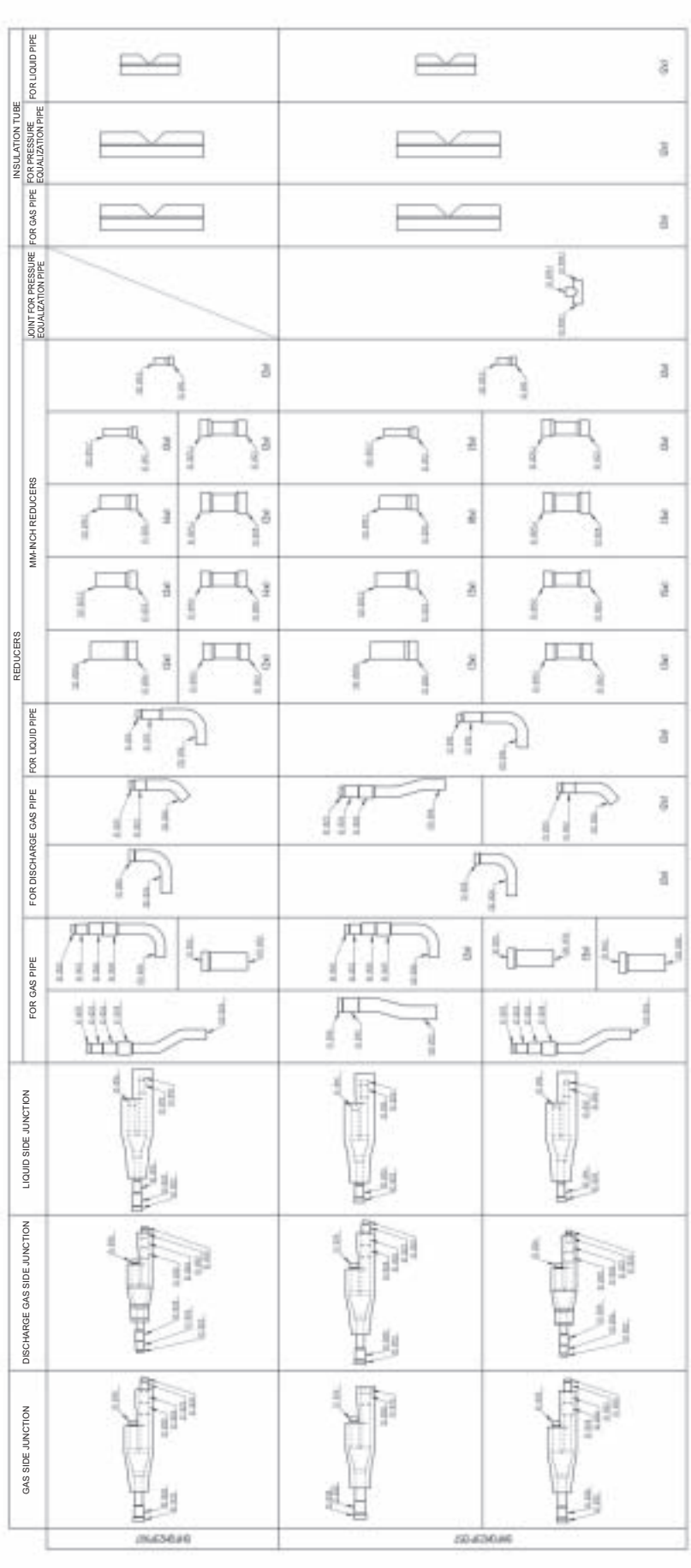


4 Refnet pipe systems



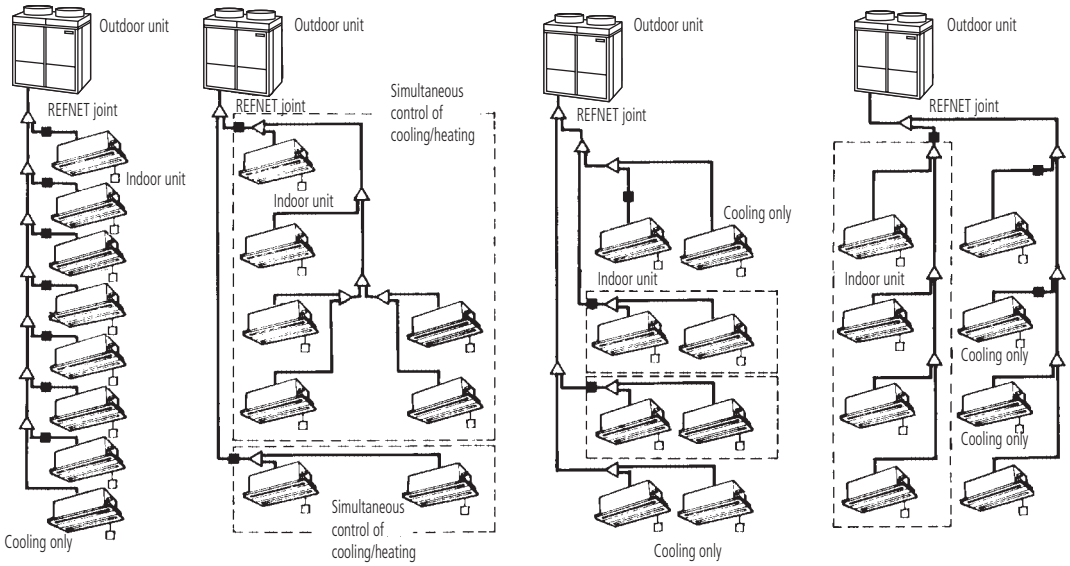
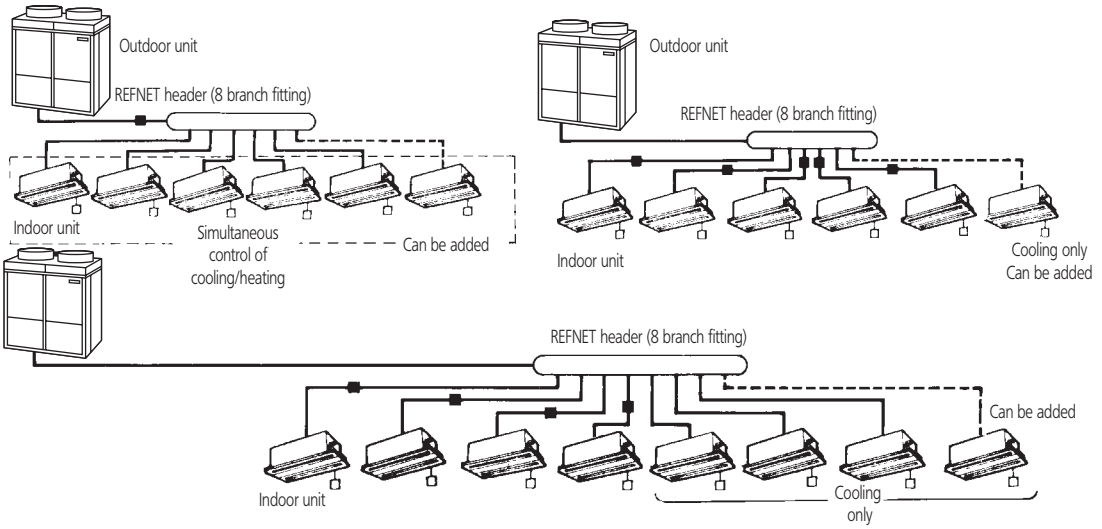
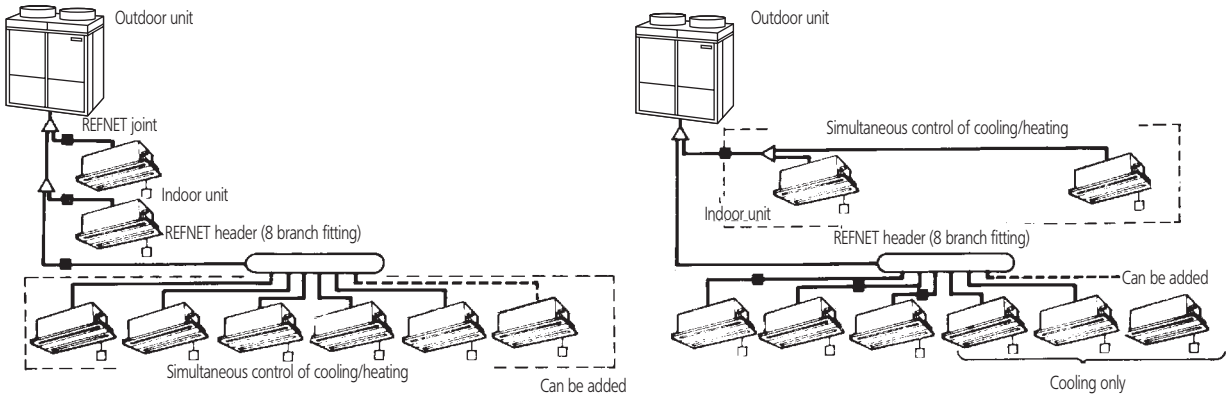
2TW29679-1

4 Refnet pipe systems



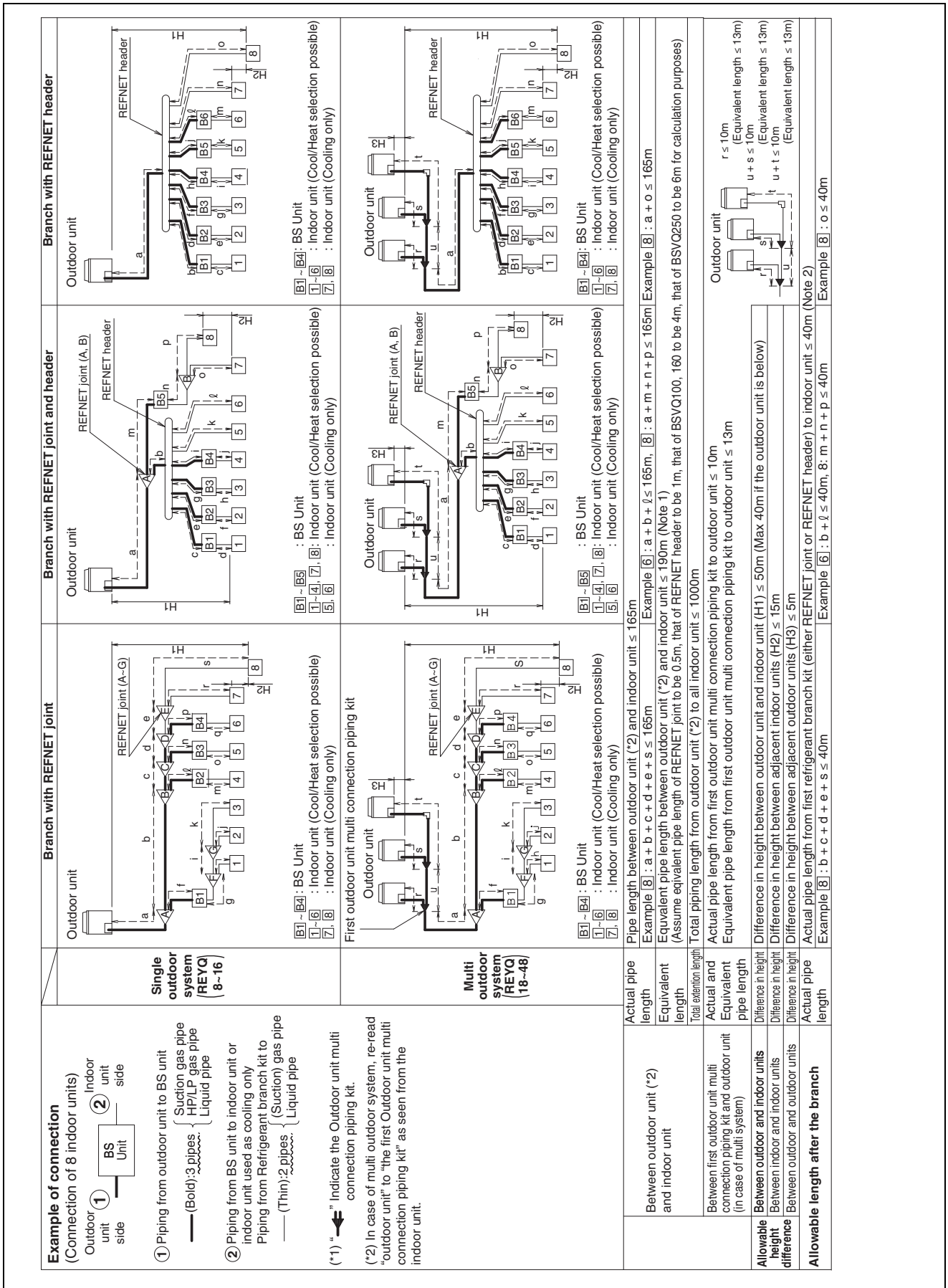
1TW29119-2

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



Outdoor unit multi connection piping kit and Refrigerant branch kit selection

- Refrigerant branch kits can only be used with R410A.
- When multi outdoor system are installed, be sure to use the special separately sold Outdoor unit multi connection piping kit. (BHFP26P90 · 136).
  (For how to select the proper kit, follow the table at right.)
- Never use BHFP26M90 · 135, BHFP22M90 · 135P for M type of this series or T joint (field supplied).

How to select the REFNET joint

- When using REFNET joint at the first branch counted from the outdoor unit side, choose from the following table in accordance with the outdoor unit capacity type.
  (Example : REFNET joint A)

Outdoor unit capacity type	Refrigerant branch kit name
8,10HP type	KHRQ23M29T
12~22HP type	KHRQ23M64T
24HP type ~	KHRQ23M75T

- Choose the REFNET joints other than the first branch from the following table in accordance with the total capacity index of all the indoor units connected below the REFNET joint.

Indoor unit total capacity index	Refrigerant branch kit name	
	3 pipes	2 pipes
x < 200	KHRQ23M20T	KHRQ22M20T
200 ≤ x < 290	KHRQ23M29T	KHRQ22M29T
290 ≤ x < 640	KHRQ23M64T	KHRQ22M64T
640 ≤ x	KHRQ23M75T	—

How to select the REFNET header

- Choose from the following table in accordance with the total capacity index of all the indoor units connected below the REFNET header.
- 250 type indoor unit can not be connected below the REFNET header.

Indoor unit total capacity index	Refrigerant branch kit name	
	3 pipes	2 pipes
x < 200	KHRQ23M29H	KHRQ22M29H
200 ≤ x < 290		KHRQ22M29H
290 ≤ x < 640	KHRQ23M64H	KHRQ22M64K
640 ≤ x	KHRQ23M75H	KHRQ22M75H

How to select the outdoor unit multi connection piping kit
(This is required when the system is multi outdoor unit system.)

- Choose from the following table in accordance with the number of outdoor units.

Number of outdoor unit	Connecting piping kit name
2 units	BHFQ23P907
3 units	BHFQ23P1357

Example for indoor units connected downstream

Example REFNET joint C : Indoor units 5 + 6 + 7 + 8

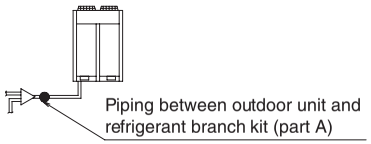
Example REFNET joint B : Indoor units 7 + 8
Example REFNET header : Indoor units 1 + 2 + 3 + 4 + 5 + 6

Example REFNET header : Indoor units 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8

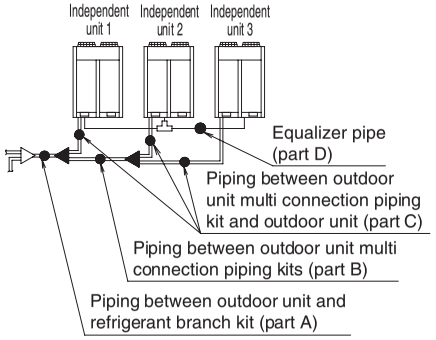
Pipe size selection

⚠ The thickness of the pipes in the table shows the requirements of Japanease High Pressure Gas Controll low. (As of Jan. 2003)The thickness and material shall be selected in accordance with local code.

<In case of single outdoor unit system>



<In case of multi outdoor unit system>



Piping between outdoor unit (*2) and refrigerant branch kit (part A)

- Choose from the following table in accordance with the outdoor unit system capacity type.

Piping between outdoor unit multi connection piping kits (part B)

- Choose from the following table in accordance with the total capacity of all the outdoor units connected upstream. (unit : mm)

Outdoor unit capacity type	Piping size (O. D.)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
8HP type	φ19.1	φ15.9	φ9.5
10HP type	φ22.2	φ19.1	
12HP type	φ28.6		φ12.7
14,16HP type		φ22.2	
18HP type			φ15.9
20,22HP type		φ28.6	
24HP type	φ34.9		
26~34HP type			φ19.1
36HP type	φ41.3		
38~48HP type		φ34.9	

Piping between outdoor unit multi connection piping kit and outdoor unit (part C)

- Choose from the following table in accordance with the capacity type of the outdoor unit connected. (unit : mm)

Outdoor unit capacity type	Piping size (O. D.)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
8,10HP type	φ22.2	φ19.1	φ9.5 × 0.8
12HP type	φ28.6		φ12.7
14,16HP type		φ22.2	

Piping between refrigerant branch kits
Piping between refrigerant branch kit and BS unit
Piping between BS unit and refrigerant branch kit

- Choose from the following table in accordance with the total capacity type of all the indoor units connected downstream.

*1 Connection piping must not exceed the refrigerant Piping size between outdoor unit and refrigerant branch kit (part A).

*2 When selecting 2 pipes line (gas pipe and liquid pipe), use Suction gas pipe column for gas pipe and Liquid pipe column for liquid pipe. (unit : mm)

Indoor capacity index	Piping size (O. D.)		
	Suction gas pipe	HP/LP gas pipe	Liquid pipe
x < 150	φ15.9	φ12.7	φ9.5
150 ≤ x < 200	φ19.1	φ15.9	
200 ≤ x < 290	φ22.2	φ19.1	
290 ≤ x < 420	φ28.6		φ12.7
420 ≤ x < 640		φ28.6	φ15.9
640 ≤ x < 920	φ34.9		φ19.1
920 ≤ x	φ41.3		

Piping between refrigerant branch kit, BS unit and indoor unit

- Match to the size of the connection piping on the indoor unit. (unit : mm)

Indoor unit capacity type	Piping size (O. D.)	
	gas pipe	Liquid pipe
20 · 25 · 32 · 40 · 50 type	φ12.7	φ6.4
63 · 80 · 100 · 125 type	φ15.9	φ9.5
200 type	φ19.1	
250 type	φ22.2	

Equalizer pipe (part D) (multi outdoor unit system only) (unit : mm)

Piping size (O. D.)	φ19.1

Temper grade and wall thickness for pipes

(Temper grade, O type and 1/2H type indicate the material type specified in JIS H 3300.)

Copper tube O. D.	φ6.4	φ9.5	φ12.7	φ15.9	φ19.1	φ22.2	φ25.4	φ28.6	φ31.8	φ34.9	φ38.1	φ41.3
Temper grade	O type				1/2H type							
Wall thickness (Min. requirement)	0.80	0.80	0.80	0.99	0.80	0.80	0.88	0.99	1.10	1.21	1.32	1.43

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.)

$$R = \left(\begin{array}{l} (\text{Total length(m) of liquid piping size at } \phi 22.2) \times 0.37 + (\text{Total length(m) of liquid piping size at } \phi 19.1) \times 0.26 \\ + (\text{Total length(m) of liquid piping size at } \phi 15.9) \times 0.18 + (\text{Total length(m) of liquid piping size at } \phi 12.7) \times 0.26 \\ + (\text{Total length(m) of liquid piping size at } \phi 9.5) \times 0.059 + (\text{Total length(m) of liquid piping size at } \phi 6.4) \times 0.022 \end{array} \right) \times 1.02 + \text{HEAT RECOVER SYSTEM} + \text{REFRIGERANT AMOUNT FOR EXCEEDING CONNECTION CAPACITY OF INDOOR UNIT}$$

HEAT RECOVER SYSTEM	
MODEL NAME	THE AMOUNT OF REFRIGERANT
REYQ8 ~ 16PY1	3.6kg
REYQ18 ~ 20PY1	1.0kg
REYQ22 ~ 24PY1	1.5kg
REYQ26PY1	2.0kg
REYQ28 ~ 30PY1	2.5kg
REYQ32 ~ 40PY1	3.0kg
REYQ42PY1	3.5kg
REYQ44 ~ 46PY1	4.0kg
REYQ48PY1	4.5kg

REFRIGERANT AMOUNT FOR EXCEEDING CONNECTION CAPACITY OF INDOOR UNIT		
INDOOR CONNECTION CAPACITY	MODEL NAME	
	REYQ8 ~ 32PY1	REYQ34 ~ 48PY1
MORE THAN 100% 120% OR LESS	0.5kg	
MORE THAN 120% 130% OR LESS	0.5kg	1.0kg

Example for refrigerant branch using REFNET joint and REFNET header for the systems and each pipe length as shown below.

Outdoor system : REYQ34PY1
Total capacity of indoor unit : 116%

a : ϕ 19.1 × 30m	e : ϕ 9.5 × 10m	i : ϕ 9.5 × 10m	m : ϕ 9.5 × 20m	r : ϕ 12.7 × 3m
b : ϕ 19.1 × 20m	f : ϕ 9.5 × 10m	j : ϕ 9.5 × 10m	n : ϕ 9.5 × 10m	s : ϕ 9.5 × 3m
c : ϕ 9.5 × 10m	g : ϕ 9.5 × 10m	k : ϕ 9.5 × 20m	o : ϕ 6.4 × 10m	t : ϕ 9.5 × 3m
d : ϕ 9.5 × 10m	h : ϕ 9.5 × 10m	l : ϕ 9.5 × 20m	p : ϕ 6.4 × 10m	u : ϕ 15.9 × 1m

$R = (\boxed{50 \times 0.26} + \boxed{1 \times 0.18} + \boxed{3 \times 0.12} + \boxed{156 \times 0.059} + \boxed{20 \times 0.022}) \times 1.02 + \boxed{3.0} + \boxed{0.5}$
(a, b; u; r; c~n, s, t; o, p; REYQ34PY1; 116%)

$= 27.148 \Rightarrow \boxed{27.1kg}$

Round off in units of 0.1 kg.

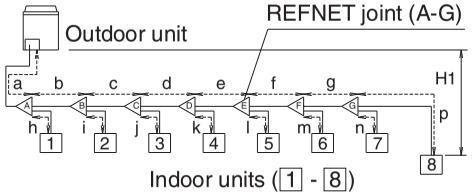
Note 1.

When the equivalent pipe length between outdor and indoor units is 90m or increased according to the right table.
(Never increase suction gas pipe and HP/LP gas pipe.)

System	Liquid pipe
REYQ8 ~ 10PY1	ϕ 9.5 → ϕ 12.7
REYQ12 ~ 16PY1	ϕ 12.7 → ϕ 15.9
REYQ18 ~ 24PY1	ϕ 15.9 → ϕ 19.1
REYQ26 ~ 48PY1	ϕ 19.1 → ϕ 22.2

(Refer to figure 9)
1.Outdoor unit
2.Main pipes
3.Increase only liquid pipe size
4.First refrigerant branch kit
5.BS unit
6.Indoor unit

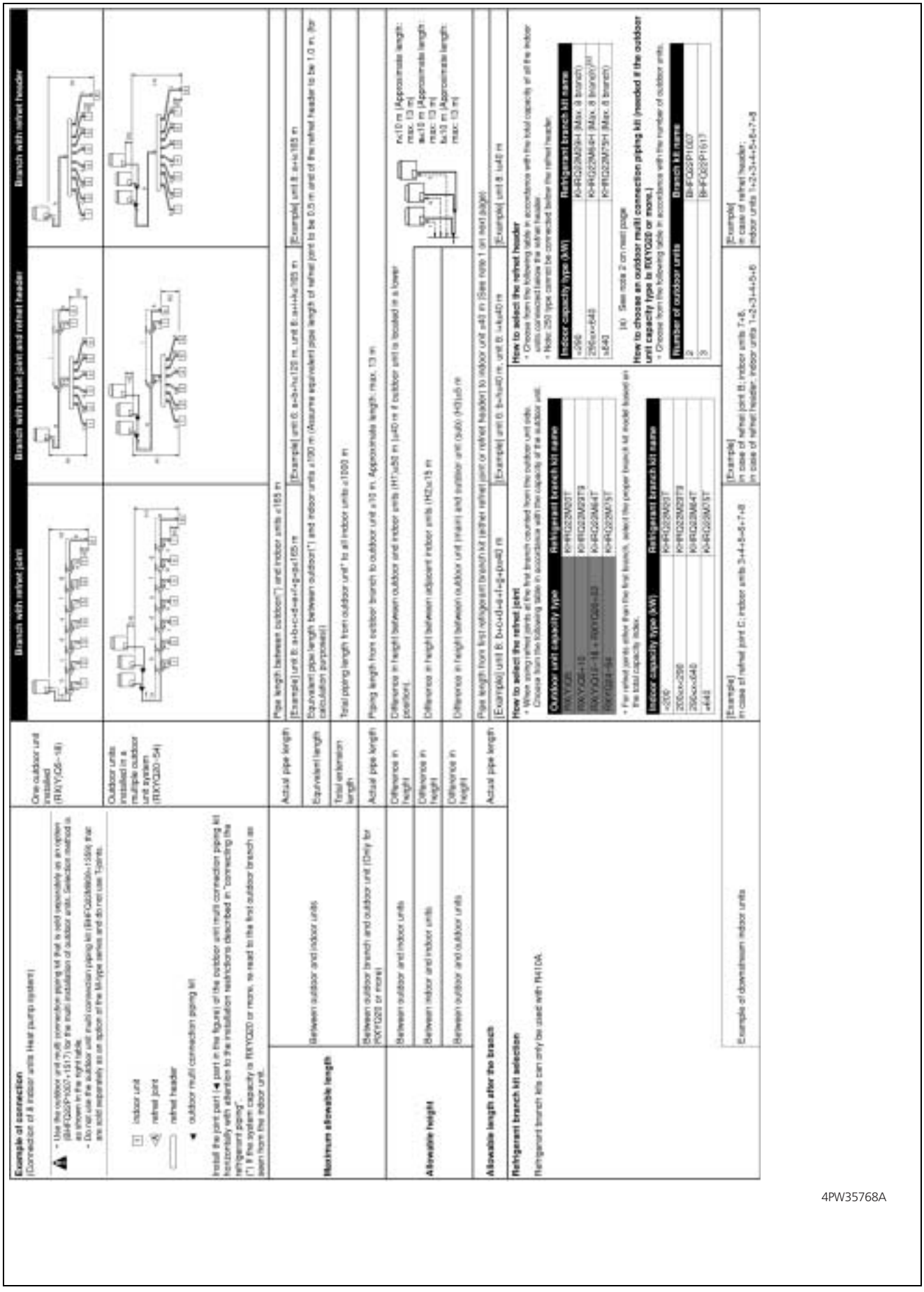
Note 2. Allowable length after the first refrigerant branch kit to indoor units is 40m or less, however it can be extended up to 90m if all the following conditions are satisfied. (In case of "**Branch with REFNET joint**")

Required Conditions	Example Drawings	
1. It is necessary to increase the pipe size between the first branch kit and the final branch kit. (Reducers must be procured on site) However, the pipes that are same pipe size with main pipe must not be increased.	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 ϕ 9.5 → ϕ12.7 ϕ15.9 → ϕ19.1 ϕ22.2 → ϕ25.4* ϕ34.9 → ϕ38.1* ϕ12.7 → ϕ15.9 ϕ19.1 → ϕ22.2 ϕ28.6 → ϕ31.8*
2.For calculation of Total extension length, the actual length of above pipes must be doubled. (except main pipe and the pipes that are not increased)	a+b×2+c×2+d×2+e×2+f×2+g×2 +h+i+j+k+l+m+n+p ≤ 1000 m	
3. Indoor unit to the nearest branch kit≤ 40 m	h, i, j..... p ≤ 40 m	
4. The difference between [Outdoor unit to the farthest indoor unit] and [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	

*If available on the site, use this size. Otherwise it can not be increased.

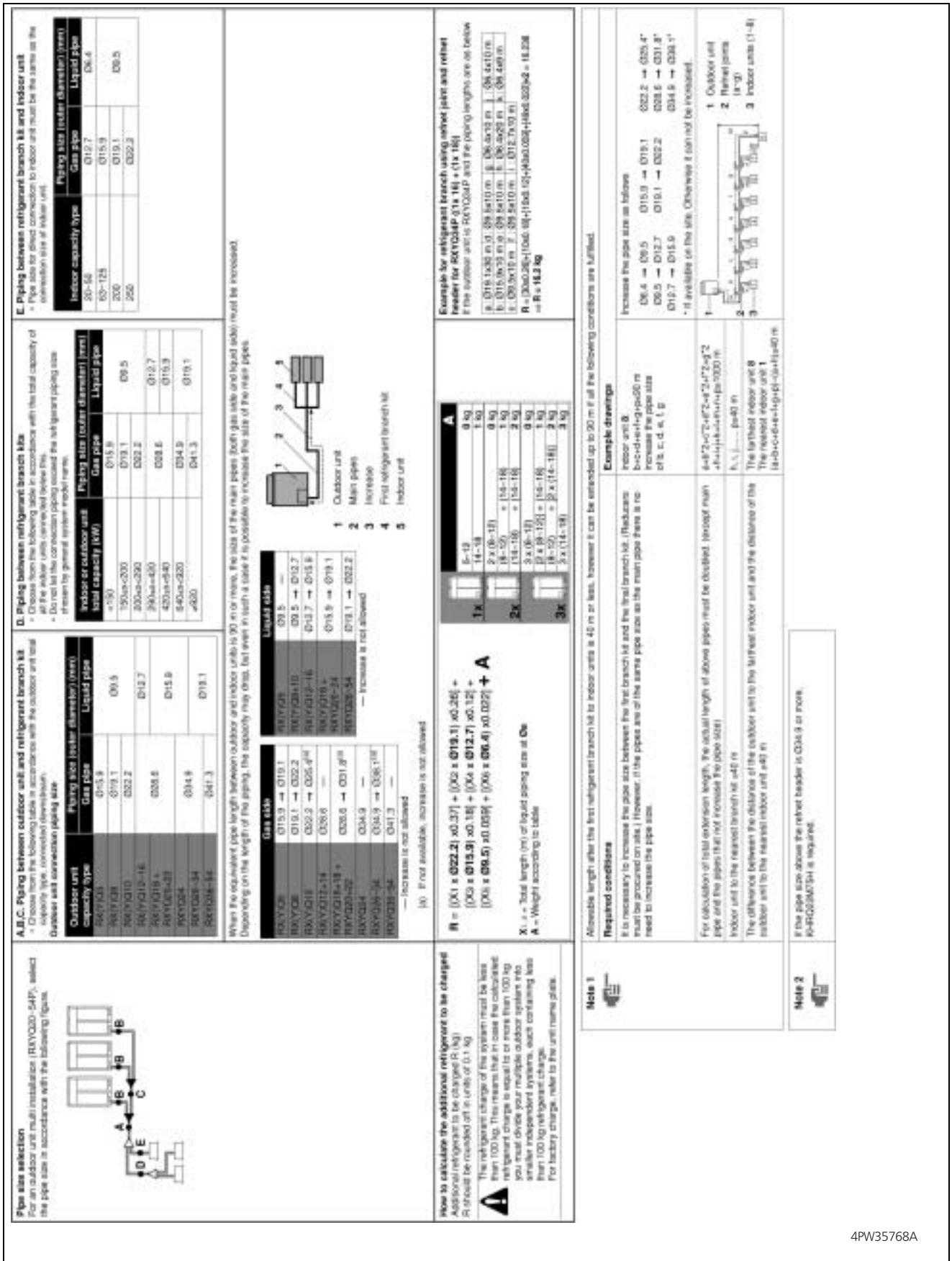
6 Refrigerant pipe selection

6 - 2 VRV®III



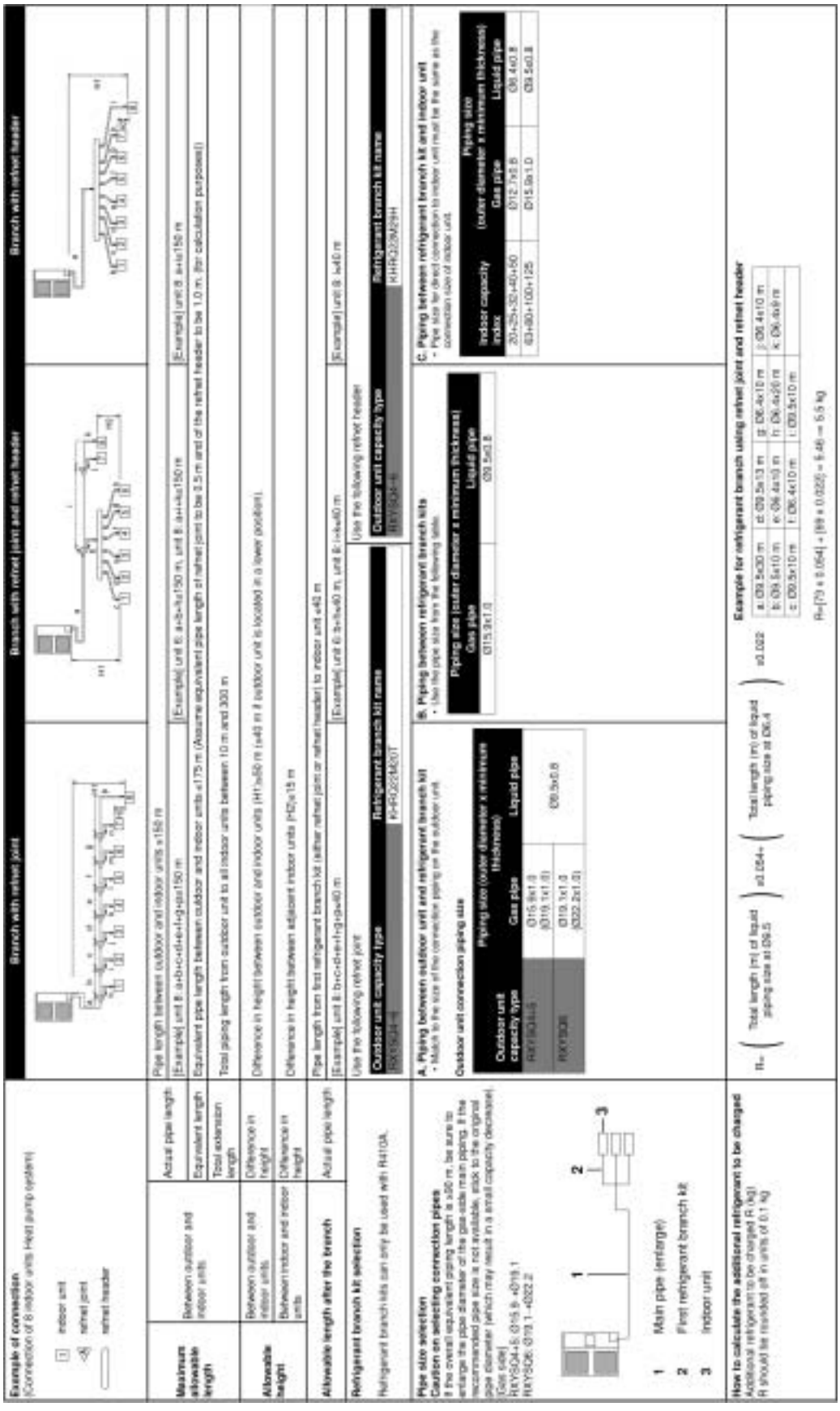
6 Refrigerant pipe selection

6 - 2 VRV®III



6 Refrigerant pipe selection

6 - 3 VRV®III-S



6 Refrigerant pipe selection

6 - 4 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.

2a

VRV III-S
VRV III

In all of us, a green heart

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 intension 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.

Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.

ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.

CE Daikin units comply with the European regulations that guarantee the safety of the product.

VRV®products are not within the scope of the Eurovent certification programme.

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