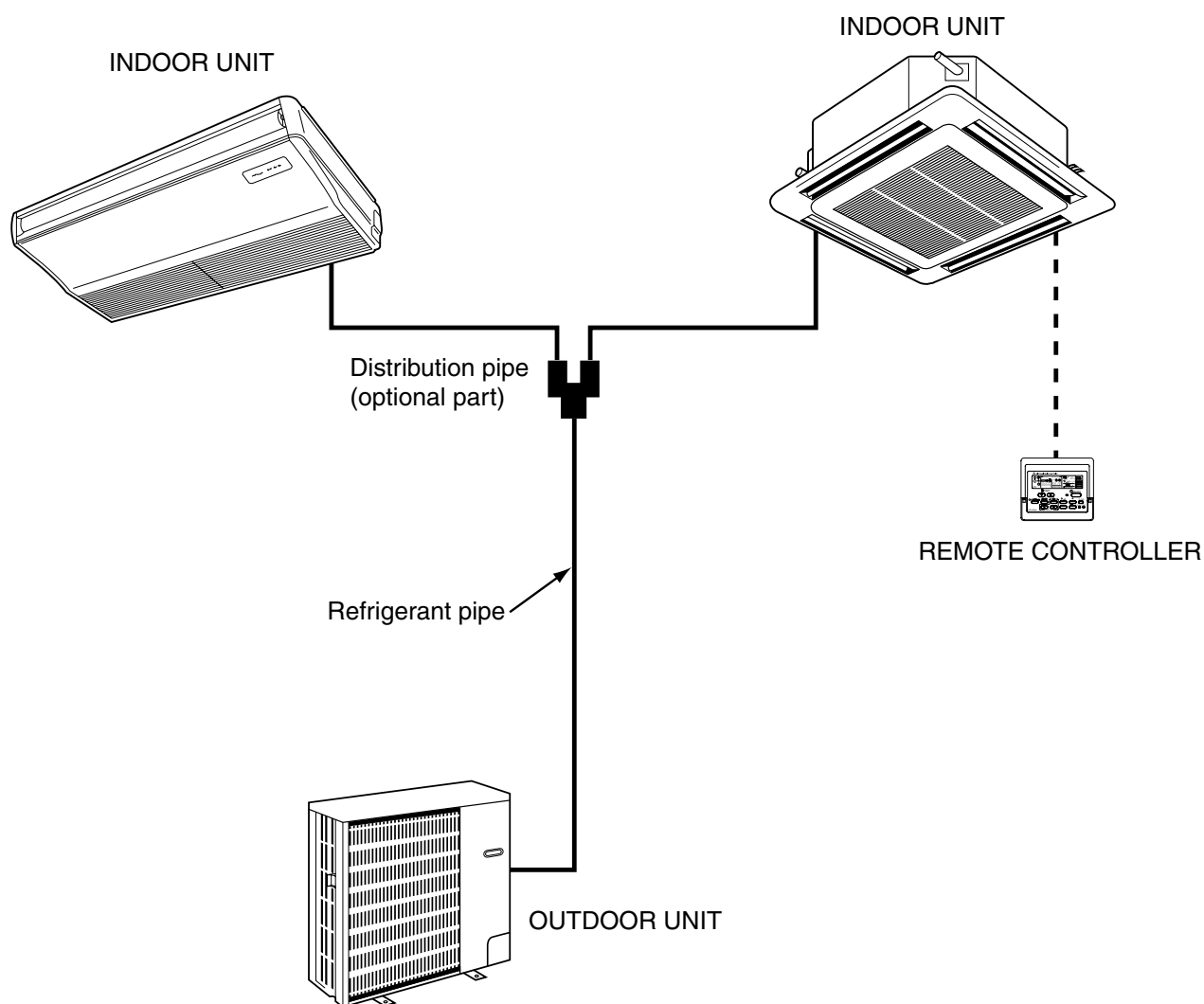


A.8 MULTIPLE SYSTEM

A.8.1	2, 3 & 4-WAY MULTIPLE SYSTEMS	A-338
A.8.2	MULTIPLE SYSTEMS COMBINATION CHART	A-339
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A.8.1 2, 3 & 4-WAY MULTIPLE SYSTEMS

A single outdoor unit has sufficient power to serve up to four indoor units, and one remote controller can be used to manage all units. If two remote controllers are available, they can be used as main and sub control terminals. Multi-Distributor piping for greater system installation flexibility is also available.



A.8.2 MULTIPLE SYSTEMS COMBINATION CHART

Split-type heat pump & cool only models for R407C

Applicable Indoor unit	1.6HP	2HP	2.5HP	3HP
	PKH-P1.6GALH PKA-P1.6GAL PLH-P1.6KAH PLA-P1.6KA PEHD-P1.6EAH PEAD-P1.6EA PMH-P1.6BA	PKH-P2GALH PKA-P2GAL PCH-P2GAH PCA-P2GA PLH-P2KAH PLA-P2KA PEHD-P2EAH PEAD-P2EA PMH-P2BA	PKH-P2.5FALH PKA-P2.5FAL PCH-P2.5GAH PCA-P2.5GA PLH-P2.5KAH PLA-P2.5KA PEHD-P2.5EAH PEAD-P2.5EA	PKH-P3FALH PKA-P3FAL PCH-P3GAH PCA-P3GA PLH-P3AAH PLA-P3AA PSH-P3GAH PSA-P3GA PEHD-P3EAH PEAD-P3EA

Outdoor unit	Twin-Multi	Triple-Multi	
	50:50	33:33:33	25:25:50
PU(H)-P3VGAA PU(H)-P3YGAA	1.6+1.6	—	—
PU(H)-P4VGAA PU(H)-P4YGAA	2+2	—	—
PU(H)-P5YGAA	2.5+2.5	—	—
PU(H)-P6YGAA	3+3	2+2+2	1.6+1.6+3
PUH-P8YE	4+4	2.5+2.5+2.5	2+2+4
PUH-P10YE	5+5	3+3+3	2.5+2.5+5
Multi-Distributor pipes (option)	SDD-50DA-E (for PU(H)-P3~6) SDD-50WSA-E (for PUH-P8/P10)	SDT-111SA-E	SDT-112SA-E

Applicable Indoor unit	4HP	5HP
	PKH-P4FALH PKA-P4FAL PCH-P4GAH PCA-P4GA PLH-P4AAH PLA-P4AA PSH-P4GAH PSA-P4GA PEHD-P4EAH PEAD-P4EA	PCH-P5GAH PCA-P5GA PLH-P5AAH PLA-P5AA PSH-P5GAH PSA-P5GA PEHD-P5EAH PEAD-P5EA

Outdoor unit	Triple-Multi	Quadro-Multi
	20:40:40	25:25:25:25
PU(H)-P3VGAA PU(H)-P3YGAA	—	—
PU(H)-P4VGAA PU(H)-P4YGAA	—	—
PU(H)-P5YGAA	—	—
PU(H)-P6YGAA	—	—
PUH-P8YE	1.6+3+3	2+2+2+2
PUH-P10YE	2+4+4	2.5+2.5+2.5+2.5
Multi-Distributor pipes (option)	SDT-122SA-E	SDT-1111SA-E

A.8.3 REFRIGERANT PIPING

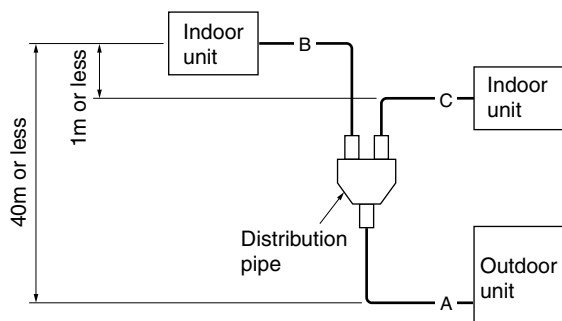
1. Simultaneous Twin System

Note that the allowed refrigerant piping length, number of bends and difference of elevation of the indoor units differ according to the outdoor unit.

- ※ Additional charging of refrigerant is carried out using the check valve connected to the piping on the low-pressure side on the inside of the outdoor unit.
- 1. As to PU(H)-P3~P6, if the total pipe length exceeds 30 m of chargeless piping, make an additional charge of the refrigerant in accordance with figures shown in Table 2.
Total allowable pipe length for Cool-only type of Twin-multi is 20 m or less.
If the pipe of PUH-P8/P10YE is extended, make an additional charge of the refrigerant calculated with the formula shown in Table 3.
- 2. The number of bends should not exceed 8 bends between <A + B> and <A + C>.
- 3. The difference of elevation for the indoor and outdoor units is the same whether the indoor units are up or down in comparison to the outdoor unit.
- 4. Leave the stop valve of the outdoor unit closed (closed at time of shipping), and clear the vacuum from the service port of the stop valve on the outdoor unit after connecting all the refrigerant piping.
- 5. When the above operation is completed, open the stop valve on the outdoor unit completely to link up the refrigerant circuit. An explanation of the stop valve is displayed on the outdoor unit.

Note:

- Be sure to coat the flare sheet surface with freezer oil.
- Be sure to connect piping with a double spanner.
- Be sure to insulate the indoor piping connections with the accessory insulation material.
- Be sure to check for gas leaks after connecting the piping.
- Be sure that non-oxidized brazing is carried out when brazing piping.



■ PU(H)-P3~P6, PUH-P8/P10YE<R407C>

Table 1

Outdoor unit	Total allowable pipe length A + B + C	A + B or A + C	Chargeless pipe length A + B + C	IB - CI	No. of bends
PU(H)-P3~P6	50 m or less		30 m or less	8 m or less	15 or less
PUH-P8/P10	70 m or less	50 m or less		8 m or less	15 or less

Table 2

Outdoor unit	Allowable pipe length	A + B + C		
		Refrigerant additional charge volume (kg)		
		31 to 40 m or less	41 to 50 m or less	51 m or more
PU(H)-P3	50 m or less	0.6 kg	1.2 kg	
PU(H)-P4~P6	50 m or less	0.7 kg	1.4 kg	

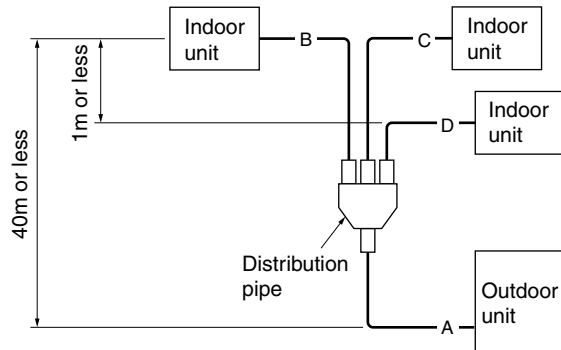
Table 3

Outdoor unit	Refrigerant additional charge volume (kg)
PUH-P8YE	$0.05 \times A + 0.026 \times (B + C) + 0.5 \times \text{The number of indoor units.}$
PUH-P10YE	$0.05 \times A + 0.026 \times (B + C) + 0.5 \times \text{The number of indoor units.}$

	Capacity type	Liquid pipe	Gas pipe
Indoor unit	P1.6, P2, P2.5, P3	ø9.52	ø15.88
	P4, P5	ø9.52	ø19.05
Outdoor unit	PU(H)-P3	ø9.52	ø15.88
	PU(H)-P4, P5, P6	ø9.52	ø19.05
	PUH-P8YE	ø12.7	ø25.4
	PUH-P10YE	ø12.7	ø28.58

2. Simultaneous Triple System

- * The refrigerant additional charge is carried out using the check valve connected to the piping on the low-pressure side on the inside of the outdoor unit.
- 1. As to PU(H)-P6, if the total pipe length exceeds the 30 m of chargeless piping, make an additional charge of the refrigerant in accordance with the figures shown in Table 5.
If the pipe of PUH-P8/P10YE is extended, make an additional charge of the refrigerant calculated with the formula shown in Table 6.
- 2. The number of bends should not exceed 8 bends between <A + B>, <A + C> and <A + D>.
- 3. The difference of elevation for the indoor and outdoor units is the same whether the indoor units are up or down in comparison to the outdoor unit.



■ PU(H)-P6, PUH-P8/P10YE<R407C>

Table 4

Outdoor unit	Total allowable pipe length A + B + C + D	A + B or A + C or A + D	Chargeless pipe length A + B + C + D	IB - CI or IB - DI or IC - DI	No. of bends
PU(H)-P6	50 m or less		30 m or less	8 m or less	15 or less
PUH-P8/10	70 m or less	50 m or less		8 m or less	15 or less

Table 5

Outdoor unit	A + B + C + D			
	Allowable pipe length	Refrigerant additional charge volume (kg)		
		31 to 40 m or less	41 to 50 m or less	51 m or more
PU(H)-P6	50 m or less	0.7 kg	1.4 kg	

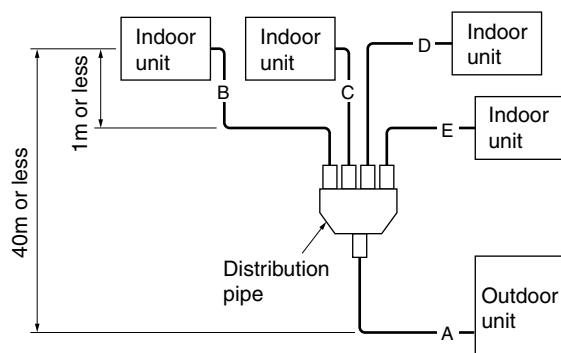
Table 6

Outdoor unit	Refrigerant additional charge volume (kg)
PUH-P8YE	$0.05 \times A + 0.026 \times (B + C + D) + 0.5 \times \text{The number of indoor units.}$
PUH-P10YE	$0.05 \times A + 0.026 \times (B + C + D) + 0.5 \times \text{The number of indoor units.}$

	Capacity type	Liquid pipe	Gas pipe
Indoor unit	P1.6, P2, P2.5, P3	ø9.52	ø15.88
	P4, P5	ø9.52	ø19.05
Outdoor unit	PU(H)-P6	ø9.52	ø19.05
	PUH-P8YE	ø12.7	ø25.4
	PUH-P10YE	ø12.7	ø28.58

3. Simultaneous Quadro System

- * The refrigerant additional charge is carried out using the check valve connected to the piping on the low-pressure side on the inside of the outdoor unit.
- 1. If the pipe of PUH-P8/P10YE is extended, make an additional charge of the refrigerant calculated with the formula shown in Table 8.
- 2. The number of bends should not exceed 8 bends between <A + B>, <A + C>, <A + D> and <A + E>.
- 3. The difference of elevation for the indoor and outdoor units is the same whether the indoor units are up or down in comparison to the outdoor unit.



■ PUH-P8/P10YE<R407C>

Table 7

Outdoor unit	Total allowable pipe length A + B + C + D + E	A + B or A + C or A + D or A + E	IB - CI or IB - DI or IB - EI or IC - DI or IC - EI or ID - EI	No. of bends
PUH-P8/10	70 m or less	50 m or less	8 m or less	15 or less

Table 8

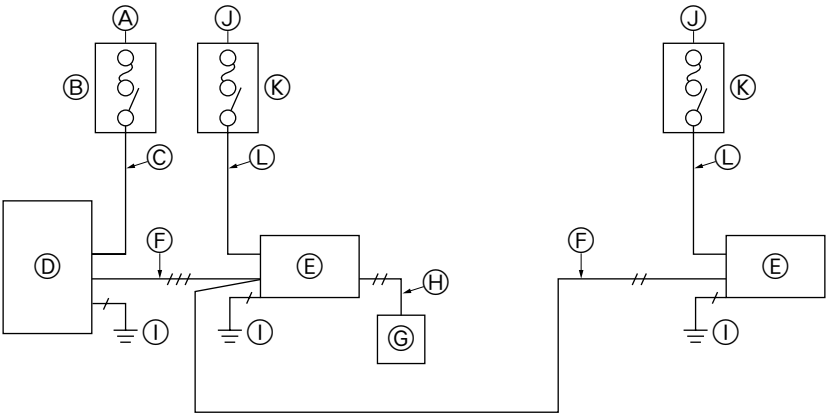
Outdoor unit	Refrigerant additional charge volume (kg)
PUH-P8YE	$0.05 \times A + 0.026 \times (B + C + D + E) + 0.5 \times \text{The number of indoor units.}$
PUH-P10YE	$0.05 \times A + 0.026 \times (B + C + D + E) + 0.5 \times \text{The number of indoor units.}$

	Capacity type	Liquid pipe	Gas pipe
Indoor unit	P2, P2.5	ø9.52	ø15.88
Outdoor unit	PUH-P8YE	ø12.7	ø25.4
	PUH-P10YE	ø12.7	ø28.58

A.8.4 ELECTRICAL WORK

[Example]

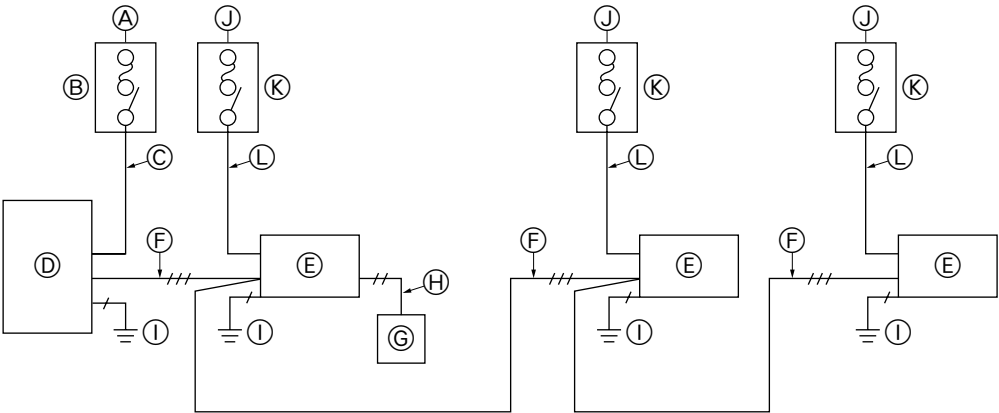
1. Simultaneous Twin System



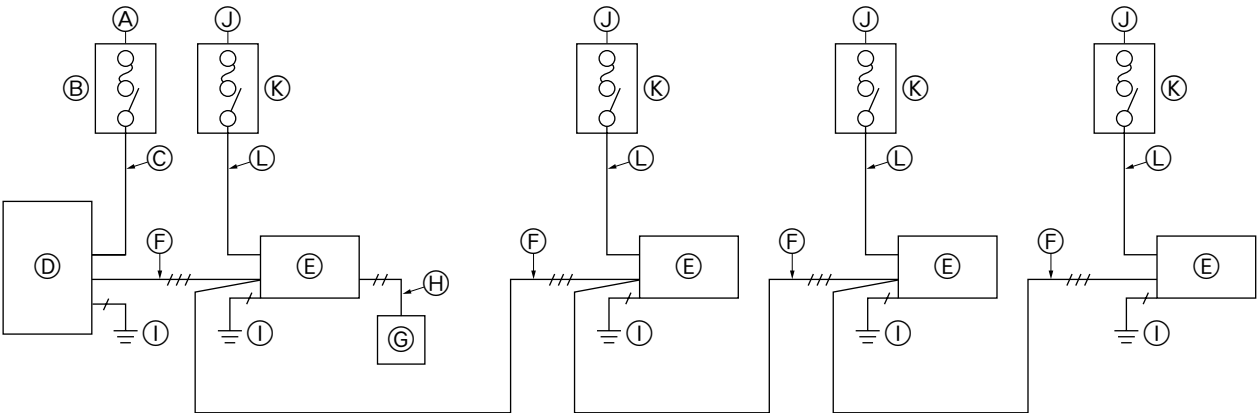
- A Power supply for outdoor unit
- B Main switch/fuse (purchased locally) for outdoor unit
- C Power supply wiring for outdoor unit
- D Outdoor unit
- E Indoor unit
- F Connection wiring for indoor/outdoor units (polarity)
- G Remote controller
- H Connection wiring for indoor/remote controller (no polarity)
- I Grounding
- J, K, L: with electric heater model only
- J Power supply for electric heater
- K Main switch/fuse for electric heater
- L Power supply wiring for electric heater

⚠ Caution:
Both the indoor unit and the outdoor unit must be grounded.

2. Simultaneous Triple System



3. Simultaneous Quadro System



Check items

1. Grounding protection with a no-fuse breaker (earth leakage breaker [ELB]) is usually installed for ㊦ and ㊧.
2. The power cable thickness of ㊣ and ㊦ have been selected for a voltage drop up to 20 m. If the cable length exceeds 20 m, select a cable thickness appropriate to that estimated voltage drop.
3. The connection wiring ㊦ between the outdoor and indoor units can be extended up to a maximum of 50 m, and the total extension, including the crossover wiring between rooms is a maximum of 80 m.
Use flat cable (three-core wire) for indoor and outdoor connection wiring, and connect the core wires in their line-up order to S1, S2, and S3 of the outdoor unit's terminal board. (The core wire connected to terminal S2 should be in the center.)
4. Be careful about choosing the installation location for the earth leakage breaker and about how it is installed, as the initial electric current may cause it to malfunction.

MULTIPLE
SYSTEM

ELECTRICAL WORK