



Multi Air Conditioning System for Buildings VRF Operating System



TRANSPORTATION / INSTALLATION / WIRING

TRANSPORTATION

Moving the unit with a fork lift



ELEVATOR

CRANES

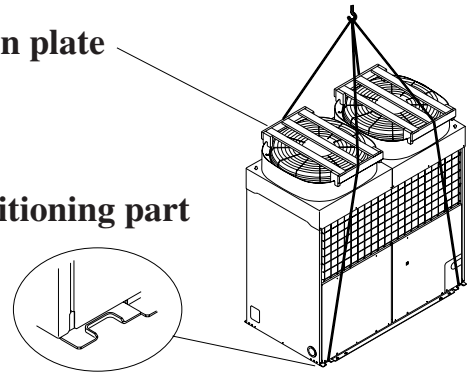
ELEVATOR



CRANES

Protection plate

Wire positioning part





Rubber block for cutting vibration noise



INSTALLATION

SETTING EXAMPLE 1



INSTALLATION

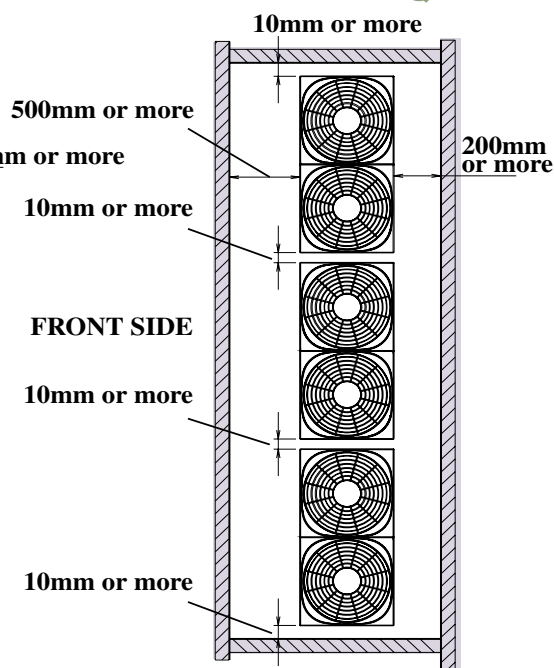
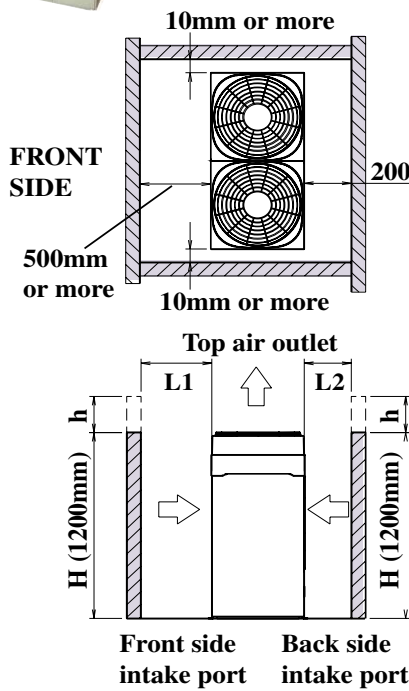
SETTING EXAMPLE 2



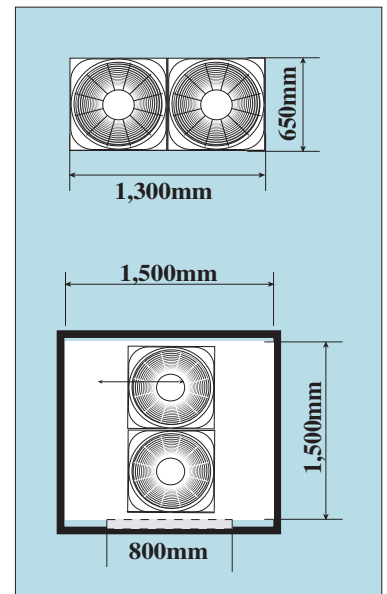
DESTRUCTION OF INSTALLATION



$H \leq 1,200$: $L1 \geq 500$, $L2 \geq 200$
 $H > 1,200$: $L1 > 500 + h$, $L2 > 200 + h$



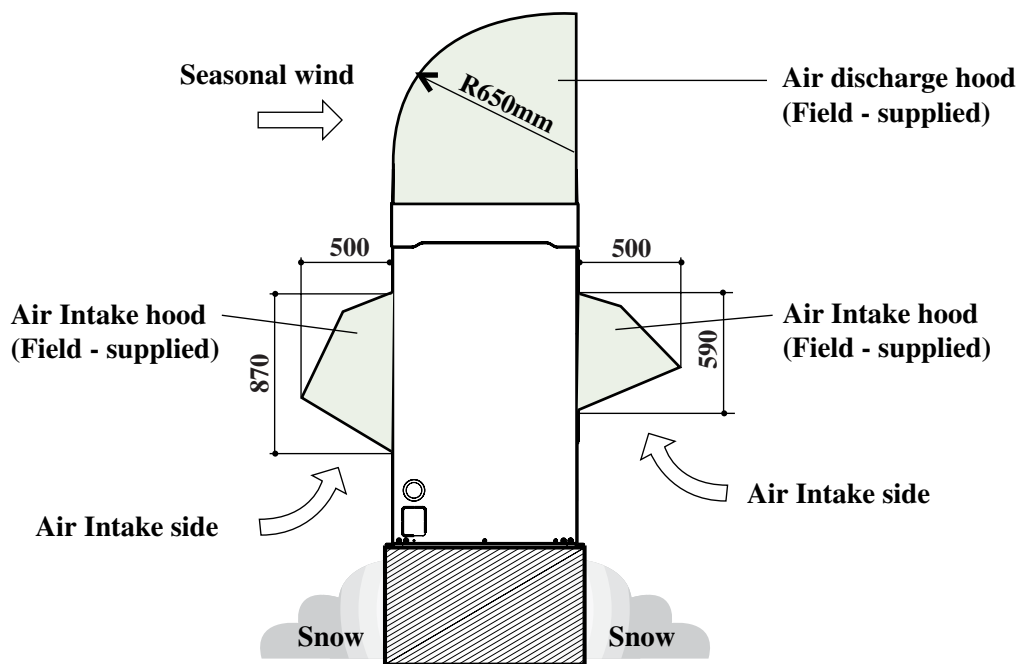
Outdoor unit goes into elevator



CAUTION

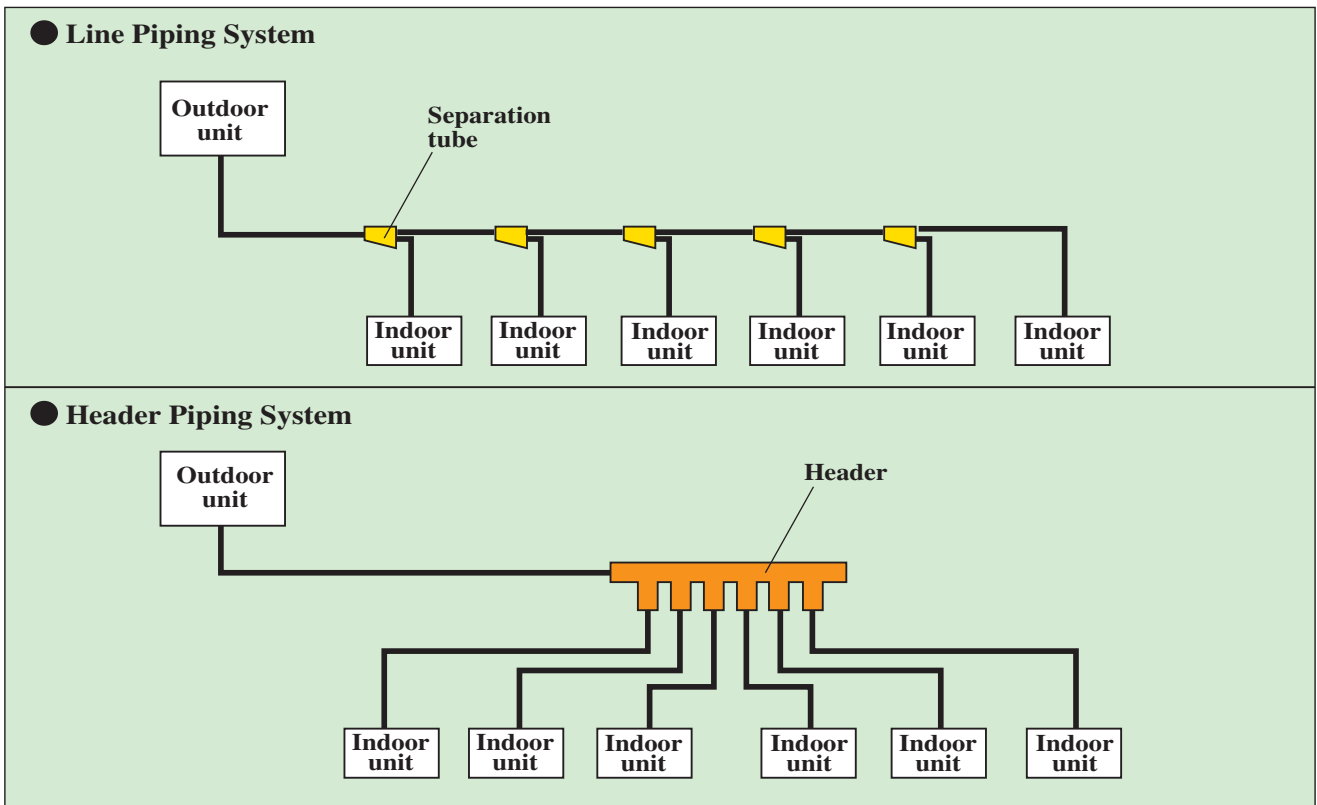
Consideration for seasonal wind and snow

Install inlet and outlet ducts in order to maintain stable operation in cold or snowy regions

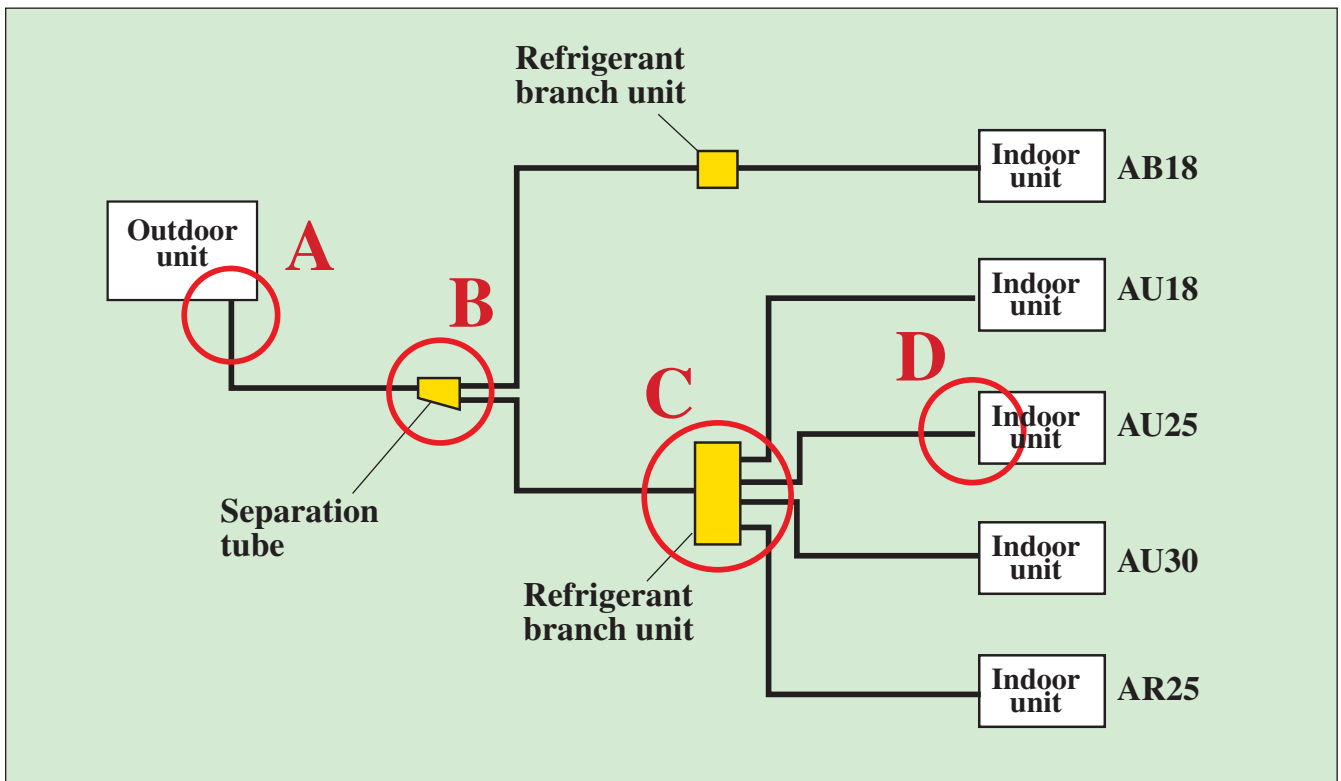


PIPING WORK

Type of Piping System



VRF LAYOUT AT FUJITSU GENERAL LIMITED TRAINING CENTER



A : OUTDOOR UNIT



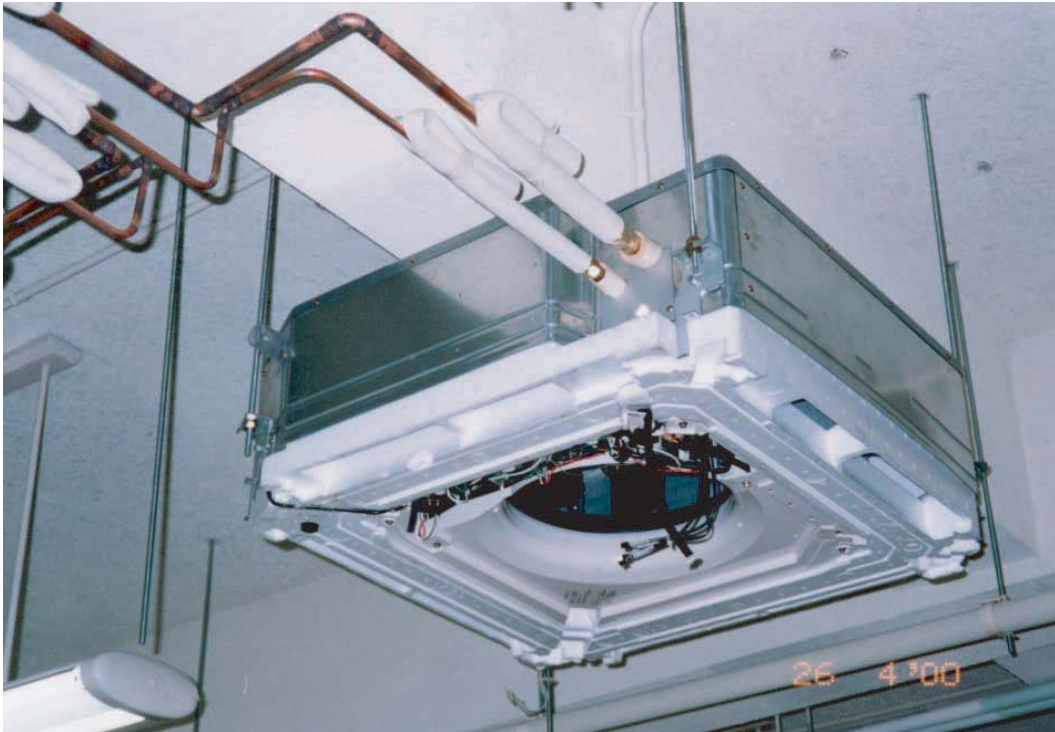
B : SEPARATION TUBE



C : REFRIGERANT BRANCH UNIT



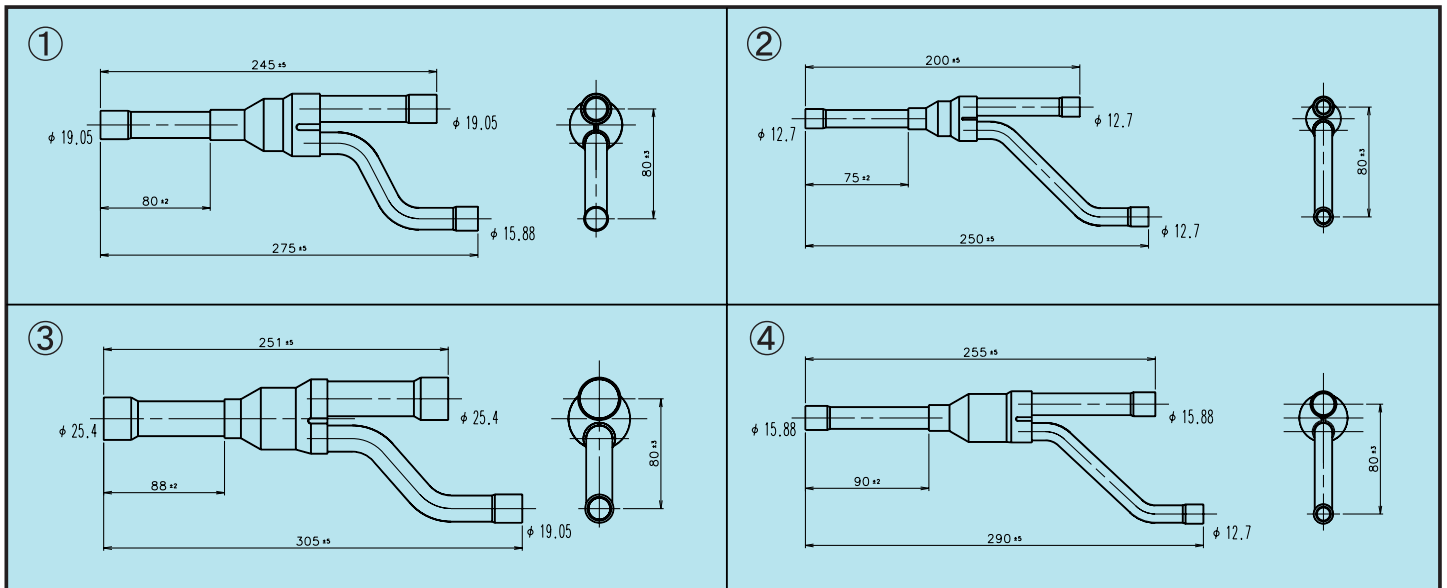
D : INDOOR UNIT



SEPARATION TUBE

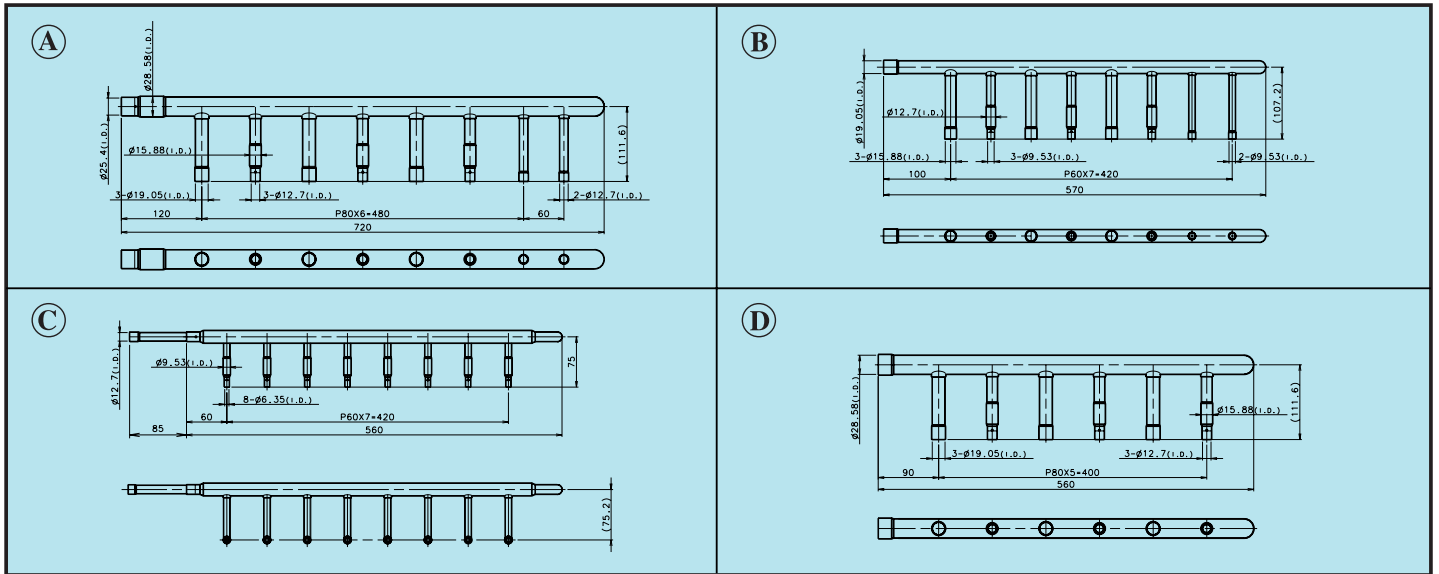
Combination table

Models	Separation tube	Reducer
UTR-BP90R	①+②+③	①+②×2+③+④+⑤×2
UTR-BP90A	②+③	①+②+③+⑤×2
UTR-BP54R	①+②+④	①×2+②×2+④×3+⑤×3
UTR-BP54A	①+②	①×2+②×2+⑤×3

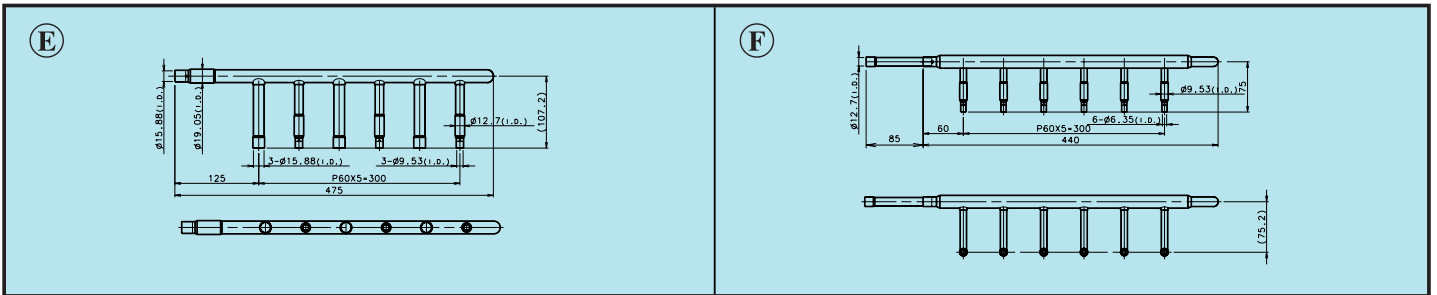


HEADER (1)

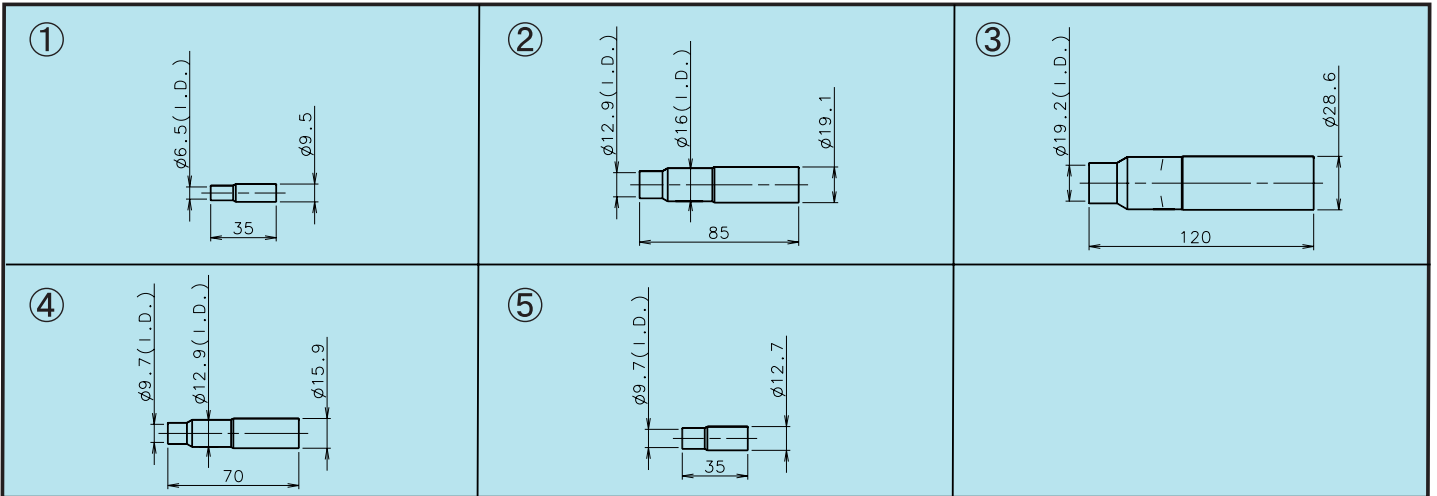
Models	Header	Reducer
UTR-HD908R	Ⓐ+Ⓑ+Ⓒ	②×2+④×2+⑤×8
UTR-HD908A	Ⓐ+Ⓒ	②×2+⑤×8
UTR-HD906R	Ⓓ+Ⓔ+Ⓕ	②×4+④×1+⑤×6
UTR-HD906A	Ⓓ+Ⓕ	②×4+⑤×6



HEADER (2)

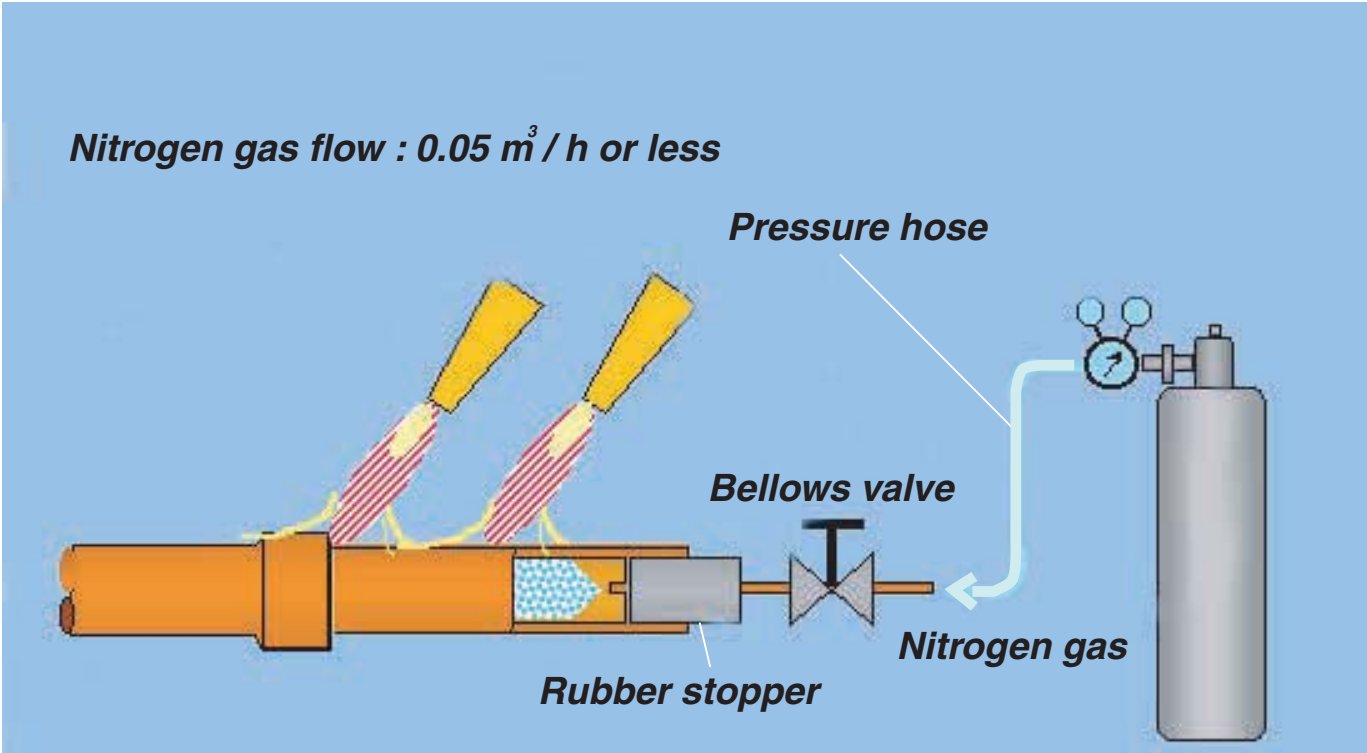


REDUCER Reducer is attached part for separation tube or header



NITROGEN GAS BLOW DURING PIPING WELDING

Nitrogen gas flow : 0.05 m³ / h or less



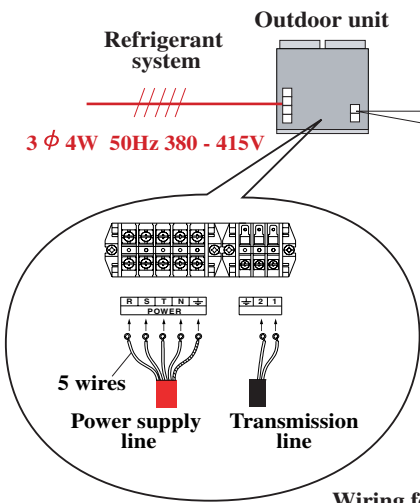
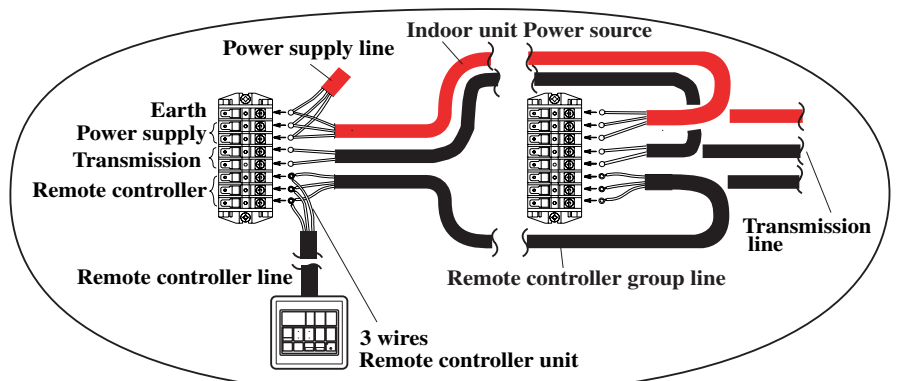
LEAK CHECK



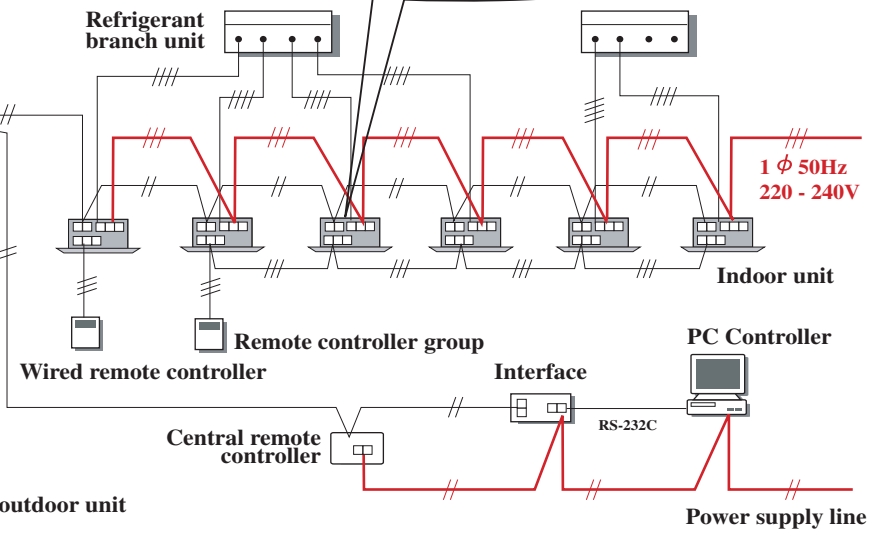
WIRING

General Wiring

Wiring for indoor unit

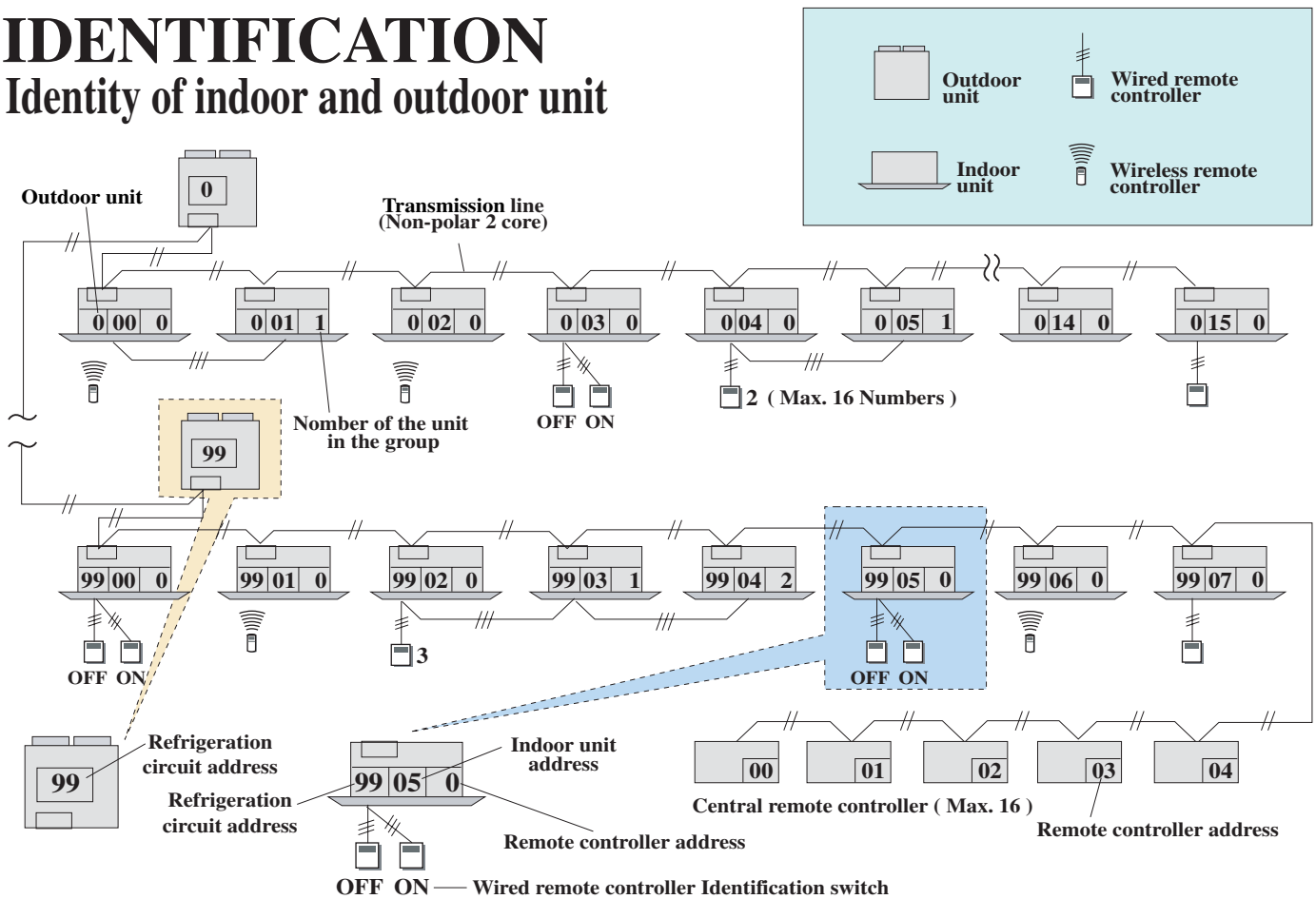


Wiring for outdoor unit



IDENTIFICATION

Identity of indoor and outdoor unit



ADDRESS SETTING METHOD

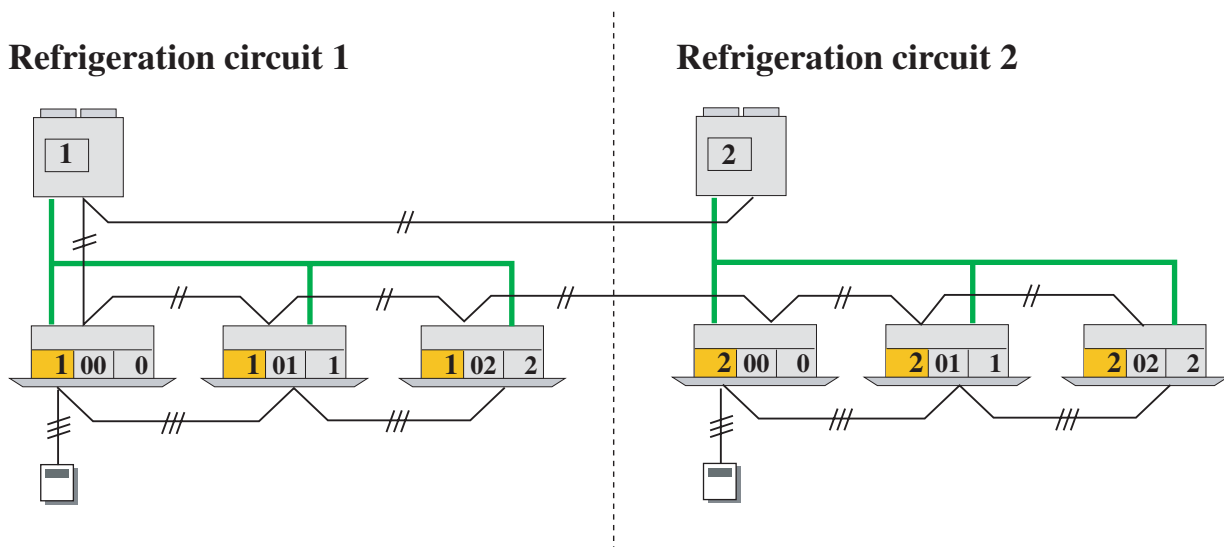
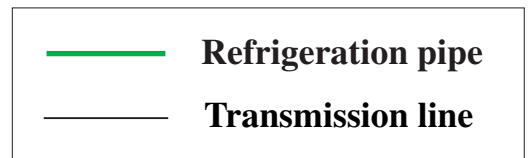
Types of setting

Types of setting	Automatic address	Manual address			Remote controller address		Setting number
		Outdoor unit PCB	Indoor unit PCB	Remote controller PCB	Wired remote controller	Central remote controller	
		by Rotary switch		by Dip switch	by Remote controller button		
① Refrigeration circuit address (Outdoor unit)		○					0~99
② Refrigeration circuit address (Indoor unit)			○				0~99
③ Indoor unit address	(○)		○		○		0~15
④ Group setting(Central remote controller)						○	
⑤ Air conditioner address (Wired remote controller group address)			○				0~15
⑥ Wired remote controller identification switching				○			OFF / ON
⑦ Indoor unit connection				○			0~15
⑧ Indoor unit control method				○			ON / OFF 4types of combination

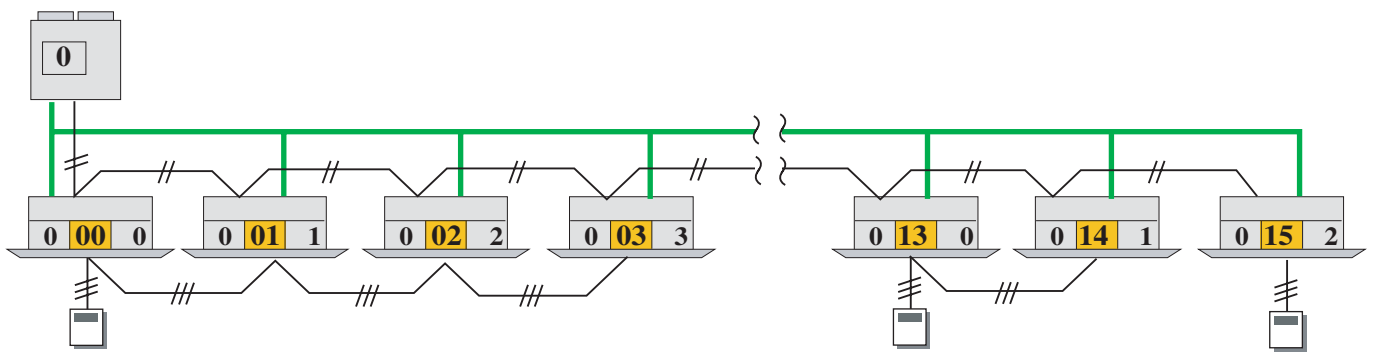
DETAILS OF ADDRESS SETTING METHOD

① Refrigeration circuit address (Outdoor unit)

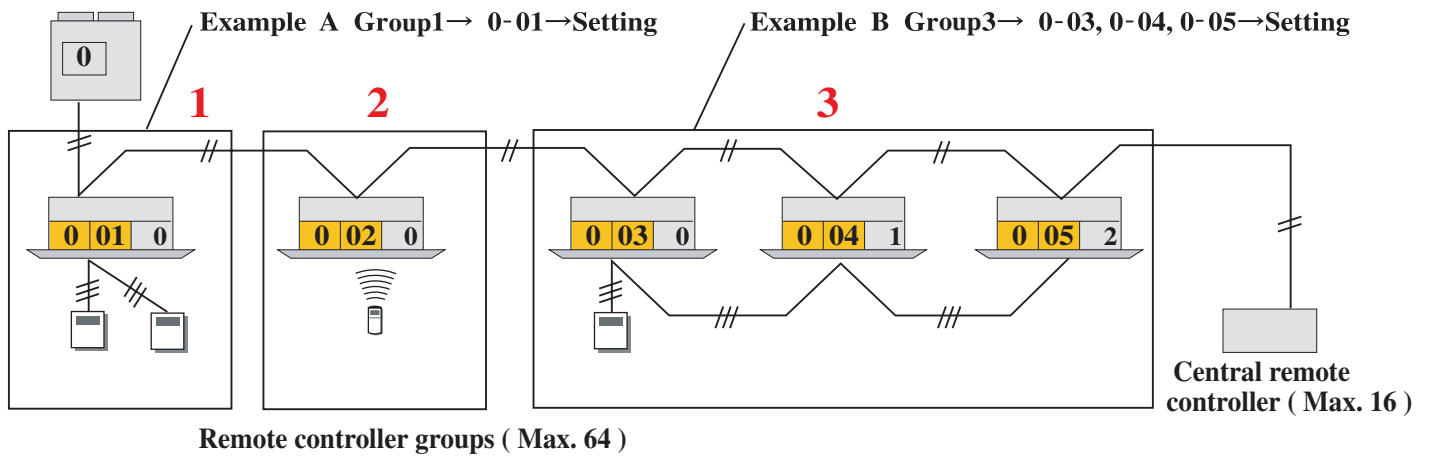
② Refrigeration circuit address (Indoor unit)



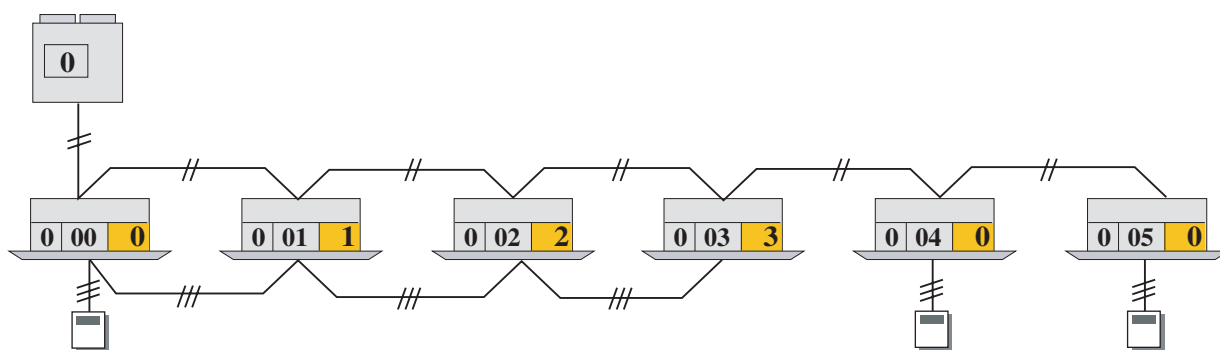
③ Indoor unit address



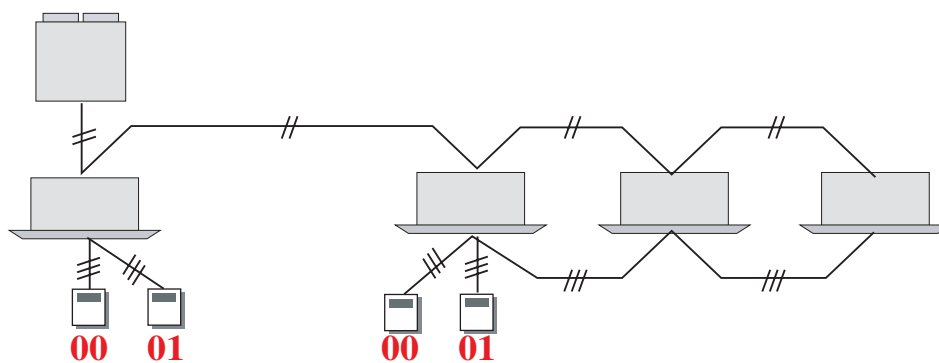
④ Group setting (Central remote controller)



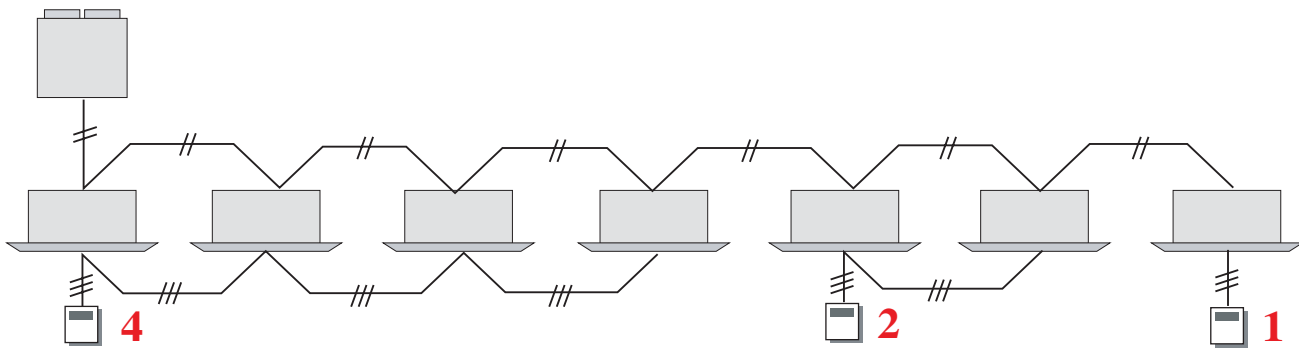
⑤ Air conditioner address
(Wired remote controller group address)



⑥ Wired remote controller identification switching



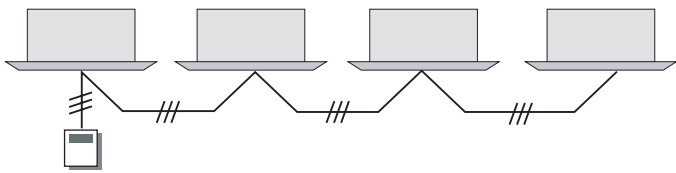
⑦ Indoor unit connection (by dip - switch)



⑧ Indoor unit control method

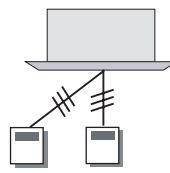
Example A

Remote controller 1 :



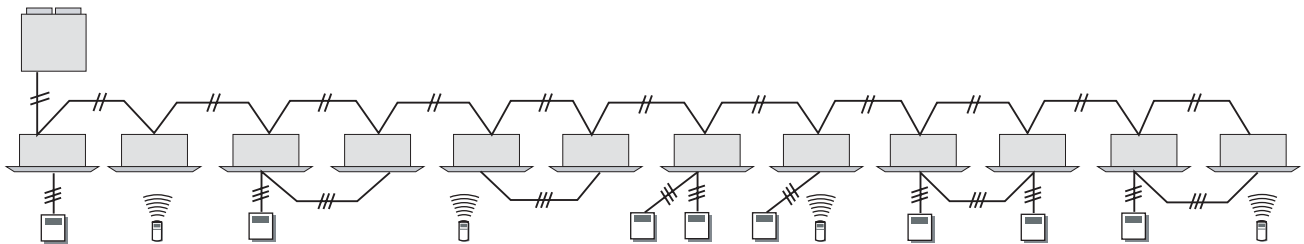
Example B

Remote controller 2 : Indoor unit 1



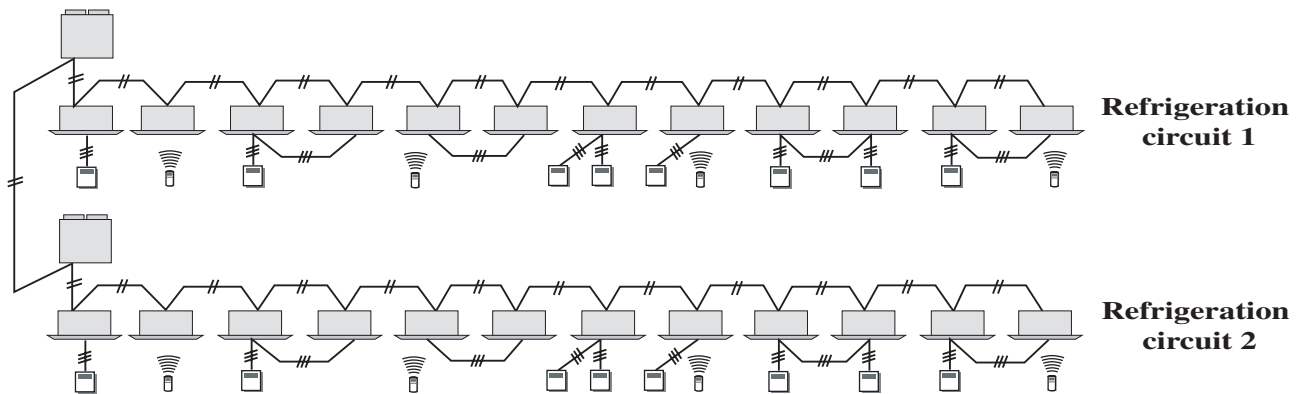
DIP- switch	5	6	Indoor unit method
	OFF	OFF	Remote controller1 : Indoor unit 1
	OFF	ON	Remote controller1 : Indoor unit n
	ON	OFF	Remote controller 2 : Indoor unit 1
	ON	ON	Remote controller 2 : Indoor unit n

SETTING EXAMPLE No.1



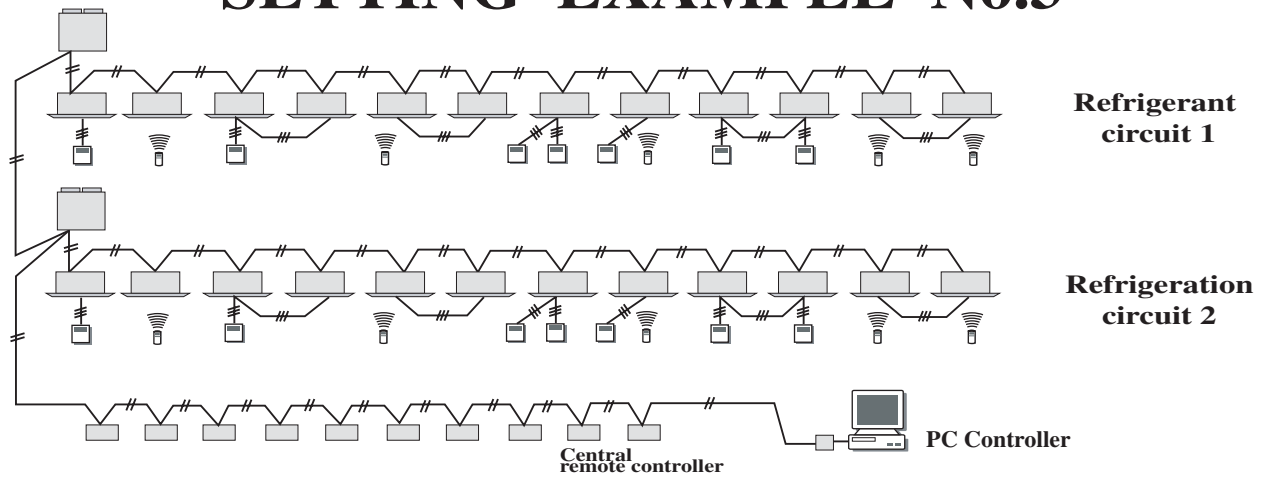
	Types of setting	Setting necessity	Automatic address	Manual address			Remote controller address	
				Outdoor unit PCB	Indoor unit PCB	Remote controller PCB	Wired remote controller	Central remote controller
Transmission	① Refrigeration circuit address (Outdoor unit)							
	② Refrigeration circuit address (Indoor unit)							
	③ Indoor unit address	○	(○)		○		○	
	④ Group setting (Central remote controller)							
Remote controller	⑤ Air conditioner address (Wired remote controller group address)	○			○			
	⑥ Wired remote controller identification switching	○				○		
	⑦ Indoor unit control method	○				○		
	⑧ Indoor unit connection	○				○		
	⑨ Central remote controller address							

SETTING EXAMPLE No.2



Types of setting		Setting necessity	Automatic address	Manual address			Remote controller address	
				Outdoor unit PCB	Indoor unit PCB	Remote controller PCB	Wired remote controller	Central remote controller
Transmission	① Refrigeration circuit address (Outdoor unit)	○		○				
	② Refrigeration circuit address (Indoor unit)	○			○			
	③ Indoor unit address	○	(○)		○		○	
	④ Group setting (Central remote controller)							
Remote controller	⑤ Air conditioner address (Wired remote controller group address)	○			○			
	⑥ Wired remote controller identification switching	○				○		
	⑦ Indoor unit control method	○				○		
	⑧ Indoor unit connection	○				○		
	⑨ Central remote controller address							

SETTING EXAMPLE No.3



	Types of setting	Setting necessity	Automatic address	Manual address			Remote controller address	
				Outdoor unit PCB	Indoor unit PCB	Remote controller PCB	Wired remote controller	Central remote controller
Transmission	① Refrigeration circuit address (Outdoor unit)	○		○				
	② Refrigeration circuit address (Indoor unit)	○			○			
	③ Indoor unit address	○	(○)		○		○	
	④ Group setting (Central remote controller)	○						○
Remote controller	⑤ Air conditioner address (Wired remote controller group address)	○			○			
	⑥ Wired remote controller identification switching	○				○		
	⑦ Indoor unit control method	○				○		
	⑧ Indoor unit connection	○				○		
	⑨ Central remote controller address	○						○

DIP SWITCH FUNCTION

Indoor unit			Remote controller			Outdoor unit				
DIP SW	SW 1	1	Indoor unit fan mode switching 1	SW 1	1	No. Indoor unit connection 1	SW 1	1	Test run(Cooling)	
		2	Indoor unit fan mode switching 2		2	No. Indoor unit connection 2		2	Test run(Heating)	
		3	Heating temperature correction coefficient 1		3	No. Indoor unit connection 3		3	Pomp down	
		4	Heating temperature correction coefficient 2		4	No. Indoor unit connection 4		4	Force defrost	
	SW 2	5	Cooling temperature correction coefficient	SW 2	5	Controlling method 1	SW 2	1	Night operating mode	
		6	Zone control switching		6	Controlling method 2		2	Snow falling protection	
	SW 3	1	Filter check have Y/N	SW 2	1	Cooling only/heatpomp switching	SW 3	3	Electronic expansion valve initialization	
		2	Auto restart have Y/N		2	Auto changeover have Y/N		4	Force oil recovery	
		3	Indoor unit fan speed table 1		3	Wired remote controller identification switching		1	Outdoor unit fan operation switching 1	
		4	Indoor unit fan speed table 2		4	Maintenance		2	Outdoor unit fan operation switching 2	
	SW 4	5	Indoor unit fan speed table 3	SW 2	5	Not used	SW 3	3	Defrost condition modification 1	
		6	Not used		6	Battery backup		4	Defrost condition modification 2	
		1	Indoor unit model switching 1		SW 4	1		Reverse phase protection have Y/N	1	Protecton discharge tem.adjustment
		2	Indoor unit model switching 2			2		Protecton pressure adjustment	3	Protecton pressure adjustment
	3	Indoor unit model switching 3	3	Not used		4	Not used			
	4	Indoor unit model switching 4	4	Not used		1	Crank case heater have Y/N			
	Rotary SW	SW 5	1	Indoor unit model switching 1	SW 5	1	Crank case heater have Y/N	SW 5	2	Base heater have Y/N
			2	Indoor unit model switching 2		2	Base heater have Y/N		3	Factory setting
			3	Indoor unit model switching 3		3	Factory setting		4	Factory setting
			4	Indoor unit model switching 4		4	Factory setting		1	Factory setting
5			Indoor unit model switching 5	5		Factory setting	2		Factory setting	
6			Indoor unit model switching 6	6		Factory setting	3		Piping length adjustment 1	
7			Indoor unit model switching 7	7		Factory setting	4		Piping length adjustment 2	
Jumper	JP 1	1	Remote controller custom code switching 1	JP 1	1	Remote controller custom code switching 1	JP 1	1	Outdoor unit model switching 1	
		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2		2	Outdoor unit model switching 2	
		3	Remote controller custom code switching 3		3	Remote controller custom code switching 3		3	Outdoor unit adress switching 1	
		4	Remote controller custom code switching 4		4	Remote controller custom code switching 4		4	Outdoor unit adress switching 2	
Rotary SW	SW 8	1	Indoor unit adress switching 1	SW 8	1	Refrigeration circuit address switching 1	SW 8	1	Refrigeration circuit address switching 1	
		2	Indoor unit adress switching 2		2	Refrigeration circuit address switching 2		2	Refrigeration circuit address switching 2	
		3	Indoor unit adress switching 3		3	Refrigeration circuit address switching 3		3	Refrigeration circuit address switching 3	
		4	Indoor unit adress switching 4		4	Refrigeration circuit address switching 4		4	Refrigeration circuit address switching 4	
Jumper	JP 2	1	Remote controller custom code switching 1	JP 2	1	Remote controller custom code switching 1	JP 2	1	Remote controller custom code switching 1	
		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2	
		3	Remote controller custom code switching 3		3	Remote controller custom code switching 3		3	Remote controller custom code switching 3	
Jumper	JP 3	1	Remote controller custom code switching 1	JP 3	1	Remote controller custom code switching 1	JP 3	1	Remote controller custom code switching 1	
		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2	
Jumper	JP 4	1	Remote controller custom code switching 1	JP 4	1	Remote controller custom code switching 1	JP 4	1	Remote controller custom code switching 1	
		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2		2	Remote controller custom code switching 2	

TROUBLE SHOOTING (Indoor unit)

Trouble shooting (Indoor unit)	Operation LED	Timer LED	Swing LED
Model information error	0.1sec ON / OFF	0.1sec ON / OFF	
Indoor temperature thermostat error	2 times flashing	0.1sec ON / OFF	
Indoor unit H.E inlet temperature thermostat error	3 times flashing	0.1sec ON / OFF	1 time flashing
Indoor unit H.E middle temperature thermostat error	3 times flashing	0.1sec ON / OFF	2 times flashing
Indoor unit H.E outlet temperature thermostat error	3 times flashing	0.1sec ON / OFF	3 times flashing
Drain water flow error (float switch ON)	4 times flashing	0.1sec ON / OFF	
Serial signal error (indoor unit wired remote controller)	5 times flashing	0.1sec ON / OFF	
Indoor unit fan error	6 times flashing	0.1sec ON / OFF	
Outlet air temperature thermostat error	7 times flashing	0.1sec ON / OFF	
Doubling indoor unit address / over indoor unit number error	0.1sec ON / OFF	2 times flashing	2 times flashing
Outdoor unit error	0.1sec ON / OFF	3 times flashing	3 times flashing

TROUBLE SHOOTING (Remote controller)

Trouble shooting contents	Error Code
Transmission error (Inter unit Remote Controller)	[00]
Indoor temperature thermistor error (open)	[01]
Indoor temperature thermistor error (shot)	[02]
Indoor unit H.E inlet Temperature thermistor error (open)	[03]
Indoor unit H.E inlet Temperature thermistor error (shot)	[04]
Indoor unit H.E middle Temperature thermistor error (open)	[05]
Indoor unit H.E middle Temperature thermistor error (shot)	[06]
Indoor unit H.E outlet Temperature thermistor error (open)	[07]
Indoor unit H.E outlet Temperature thermistor error (shot)	[08]
Outlet air temperature thermistor error (open)	[09]
Outlet air temperature thermistor error (shot)	[0A]
Float switch ON	[0B]
Model information error	[0C]
Indoor unit fan error	[0D]
Doubling indoor unit address	[0E]
Outdoor unit error	[0F]

TROUBLE SHOOTING (Outdoor unit)

LED	Flashing number	Indication	Flashing number	Indication
1	Lighted continuously	Normal mode	1	Error mode
	1	Cooling operation	1	Compressor1 error
	2	Heating operation	2	Compressor2 error
	3	Combined operation	3	Compressor3 error
2	4	Same performance operation	4	Discharge temperature1 error
			5	Discharge temperature2 error
			6	Discharge temperature3 error
			7	High-pressure error
			8	Low-pressure error
			9	Pump down error
3			10	Oil recovery error
	1	Compressor output 2HP	1	Discharge temperature thermistor1 error
	2	Compressor output 4HP	2	Discharge temperature thermistor2 error
	3	Compressor output 6HP	3	Discharge temperature thermistor3 error
	4	Compressor output 8HP	4	Heat exchange inlet thermistor1 open/short
	5	Compressor output 10HP	5	Heat exchange inlet thermistor2 open/short
4	6	Compressor output 12HP	6	Heat exchange inlet thermistor3 open/short
			7	Heat exchange outlet thermistor1 open/short
			8	Heat exchange outlet thermistor2 open/short
			9	Heat exchange outlet thermistor3 open/short
			10	Suction thermistor open/short
			11	Outdoor thermistor open/short
5	1	Heat exchanger usage capacity 2HP	1	Discharge pressure sensor error
	2	Heat exchanger usage capacity 4HP	2	Liquid Line pressure sensor error
	3	Heat exchanger usage capacity 6HP	3	Suction pressure sensor error
	4	Heat exchanger usage capacity 8HP	4	Oil sensor error
	5	Heat exchanger usage capacity 10HP		
	6	Heat exchanger usage capacity 12HP		
6	1	Oil recovery	1	Reverse phase error
	2	Defrosting	2	MOdel information error
	3	Test operation	3	EEPROM access error
	4	Oil return	4	EEPROM deletion error
7			5	Duplicate outdoor unit number error
			6	Communication error
			7	Outdoor unit circuit board error / microcomputer crash error
			1	Indoor unit error
8	1	High pressure → Medium pressure by-pass		
	2	High pressure → Low pressure by-pass		
	3	Electronic expansion valve 3 operation		