TOSHIBA

AIR CONDITIONER (MULTI TYPE)

Installation Manual

R410A

Outdoor Unit

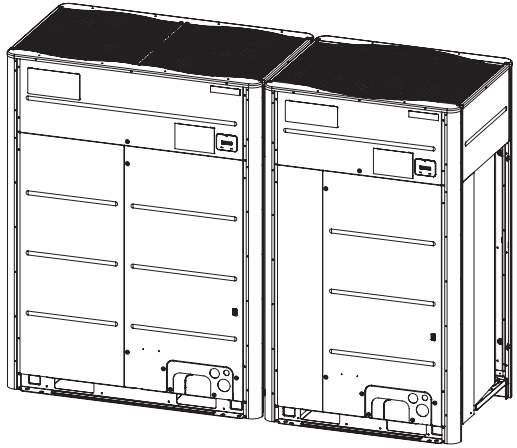
Model name:

For commercial use

<Heat Recovery Model>

MMY-MUP0801FT8P-E
MMY-MUP1001FT8P-E
MMY-MUP1201FT8P-E
MMY-MUP1401FT8P-E
MMY-MUP1601FT8P-E
MMY-MUP1801FT8P-E
MMY-MUP2001FT8P-E
MMY-MUP2201FT8P-E
MMY-MUP2401FT8P-E

MMY-MUP0801FT8JP-E
MMY-MUP1001FT8JP-E
MMY-MUP1201FT8JP-E
MMY-MUP1401FT8JP-E
MMY-MUP1601FT8JP-E
MMY-MUP1801FT8JP-E
MMY-MUP2001FT8JP-E
MMY-MUP2201FT8JP-E
MMY-MUP2401FT8JP-E



Scan QR CODE to access installation and owner's manual on website.
https://www.toshiba-carrier.co.th/manuals/default.aspx
Manual are available in BG/CS/DA/DE/EL/EN/ES/ET/FI/FR/HR/HU/IT/LV/NL/NO/PL/PT/RO/RU/SK/SL/SV.

Original instruction

Please read this Installation Manual carefully before installing the Air Conditioner.
- This Manual describes the installation method of the outdoor unit.
- For installation of the indoor unit, follow the Installation Manual attached to the indoor unit.

ADOPTION OF R410A REFRIGERANT

This Air Conditioner uses R410A an environmentally friendly refrigerant.

Contents

1 Accessory parts

Part name	Q'ty	Shape	Usage
Owner's Manual	1	–	(Be sure to hand over to customers)
Installation Manual	1	–	(Be sure to hand over to customers)
Binding band	6	–	For all models
F-GAS label	1		Fill the items on the label after adding refrigerant.
Safety Manual	1		For hand over directly to the customer

2 Installation of R410A refrigerant air conditioner

This air conditioner adopts the R410A refrigerant which does not deplete the ozone layer.

- R410A refrigerant is vulnerable to impurities such as water, oxidizing membranes, or oils because the pressure of R410A refrigerant is higher than that of the former refrigerant by approximately 1.6 times.
  As well as the adoption of the R410A refrigerant, the refrigerating oil has been also changed. Therefore, pay attention so that water, dust, former refrigerant, or refrigerating oil does not enter the refrigerating cycle of the R410A refrigerant air conditioner during installation.
- To prevent mixing of refrigerant or refrigerating oil, the size of the charge port of the main unit or connecting section of the installation tool differs to that of an air conditioner for the former refrigerant.
  Accordingly, exclusive tools are required for the R410A refrigerant as shown below.
- For connecting pipes, use new and clean piping materials so that water or dust does not enter.

■ Required tools and cautions on handling

It is necessary to prepare the tools and parts for installation as described below. The tools and parts which will be newly prepared in the following items should be restricted to exclusive use.

Explanation of symbols

△ : Newly prepared (It is necessary to use it exclusively with R410A, separately from those for R22 or R407C.)
◎ : Former tool is available.

Used tools	Usage	Proper use of tools/parts
Gauge manifold	Vacuuming, charging refrigerant and operation check	△ Exclusive to R410A
Charging hose		△ Exclusive to R410A
Charging cylinder	Charging refrigerant	Unusable (Use the Refrigerant charging balance.)
Gas leak detector	Checking gas leak	△ Exclusive to R410A
Vacuum pump	Vacuum drying	Usable if a counter-flow preventive adapter is attached
Vacuum pump with counterflow	Vacuum drying	◎ R22 (Existing article)
Flare tool	Flare processing of pipes	◎ Usable by adjusting size
Bender	Bending processing of pipes	◎ R22 (Existing article)
Refrigerant recovery device	Recovering refrigerant	△ Exclusive to R410A
Pipe cutter	Cutting pipes	◎ R22 (Existing article)
Refrigerant canister	Charging refrigerant	△ Exclusive to R410A Enter the refrigerate name for identification
Brazing machine/Nitrogen gas cylinder	Brazing of pipes	◎ R22 (Existing article)
Refrigerant charging balance	Charging refrigerant	◎ R22 (Existing article)

3 Selection of installation place

Upon customer's approval, install the air conditioner in a place which satisfies the following conditions:

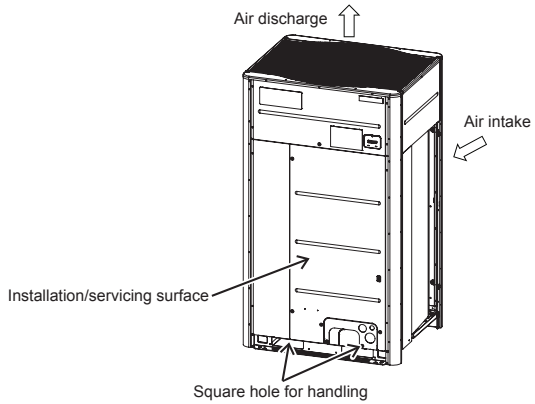
- Place where it can be installed horizontally.
- Place which can reserve a sufficient service space for safe maintenance or checks.
- Place where there is no problem even if the drained water overflows.

Avoid the following places:

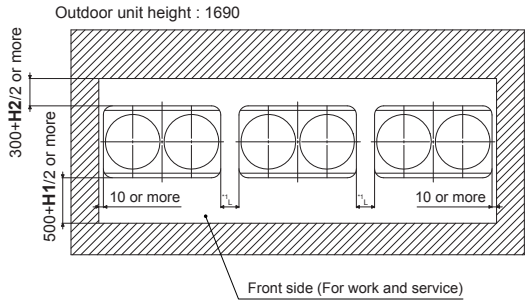
- Salty places (seaside area) or places with much gas sulfide (hot spring area) (If selecting such a place, special maintenance is required.)
- Places where oil (including machine oil), steam, oil smoke or corrosive gas is generated.
- Places where iron or other metal dust is present. If iron or other metal dust adheres to or collects on the interior of the air conditioner, it may spontaneously combust and start a fire.
- Places where an organic solvent is used.
- Chemical plants with a cooling system using liquid carbon dioxide.
- Places where a device generating high frequency (inverter, non-utility generator, medical apparatus, or communication equipment) is set. (Malfunction or abnormal control of the air conditioner, or interference to devices listed above may occur.)
- Places where discharged air from the outdoor unit blows against the windows of a neighbour's house.
- Places unable to bear the weight of the unit.
- Places with poor ventilation.

■ Installation space

Leave space necessary for running, installation and servicing.

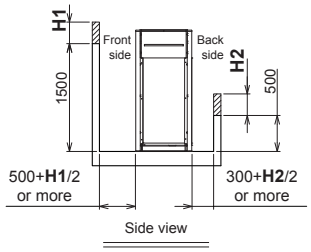


(Unit: mm)



*1: Please check “5 Installation of the outdoor unit” for details.
L: Recommendation 200 mm, at least 20 mm or more.

Top view



Side view

NOTE

- If there is an obstacle above the outdoor unit, leave a space of 2000 mm or more from the top of the outdoor unit.
- When the obstacle height in front side exceeds 1500 mm, take a space of 500 mm or more plus half length of the portion (**H1**) exceeding 1500 mm between the outdoor unit and the obstacle. (500 + **H1**/2)
- When the obstacle height in front side exceeds 2500 mm, the outdoor unit should be installed with at least 1000 mm space between the outdoor unit and the obstacle.
- When the obstacle height in back side exceeds 500 mm, take a space of 300 mm or more plus half length of the portion (**H2**) exceeding 500 mm between the outdoor unit and the obstacle. (300 + **H2**/2)
- When the obstacle height in back side exceeds 1900 mm, the outdoor unit should be installed with at least 1000 mm space between the outdoor unit and the obstacle.
- When attaching a snowfall-hood take a space for the unit height plus the snowfall-hood height.

▼ Combination of outdoor units

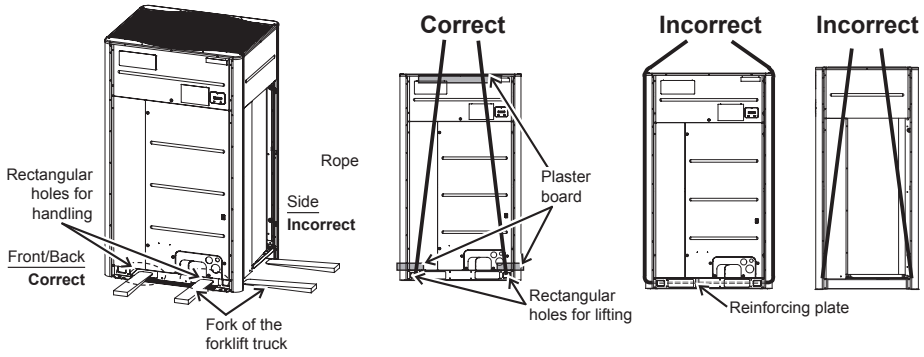
Model name (Standard type)	Unit 1	Unit 2	Unit 3
MMY-MUP0801∗	MMY-MUP0801∗	-	-
MMY-MUP1001∗	MMY-MUP1001∗	-	-
MMY-MUP1201∗	MMY-MUP1201∗	-	-
MMY-MUP1401∗	MMY-MUP1401∗	-	-
MMY-MUP1601∗	MMY-MUP1601∗	-	-
MMY-MUP1801∗	MMY-MUP1801∗	-	-
MMY-MUP2001∗	MMY-MUP2001∗	-	-
MMY-MUP2201∗	MMY-MUP2201∗	-	-
MMY-MUP2401∗	MMY-MUP2401∗	-	-
MMY-UP2601∗	MMY-MUP1401∗	MMY-MUP1201∗	-
MMY-UP2801∗	MMY-MUP1401∗	MMY-MUP1401∗	-
MMY-UP3001∗	MMY-MUP2001∗	MMY-MUP1001∗	-
MMY-UP3201∗	MMY-MUP2001∗	MMY-MUP1201∗	-
MMY-UP3401∗	MMY-MUP2001∗	MMY-MUP1401∗	-
MMY-UP3601∗	MMY-MUP2001∗	MMY-MUP1601∗	-
MMY-UP3801∗	MMY-MUP2001∗	MMY-MUP1801∗	-
MMY-UP4001∗	MMY-MUP2001∗	MMY-MUP2001∗	-
MMY-UP4201∗	MMY-MUP1401∗	MMY-MUP1401∗	MMY-MUP1401∗
MMY-UP4401∗	MMY-MUP2001∗	MMY-MUP1401∗	MMY-MUP1001∗
MMY-UP4601∗	MMY-MUP2001∗	MMY-MUP1401∗	MMY-MUP1201∗
MMY-UP4801∗	MMY-MUP2001∗	MMY-MUP1401∗	MMY-MUP1401∗
MMY-UP5001∗	MMY-MUP2001∗	MMY-MUP2001∗	MMY-MUP1001∗
MMY-UP5201∗	MMY-MUP2001∗	MMY-MUP2001∗	MMY-MUP1201∗
MMY-UP5401∗	MMY-MUP2001∗	MMY-MUP2001∗	MMY-MUP1401∗
MMY-UP5601∗	MMY-MUP2001∗	MMY-MUP2001∗	MMY-MUP1601∗
MMY-UP5801∗	MMY-MUP2001∗	MMY-MUP2001∗	MMY-MUP1801∗
MMY-UP6001∗	MMY-MUP2001∗	MMY-MUP2001∗	MMY-MUP2001∗

4 Carrying in the outdoor unit

⚠ CAUTION

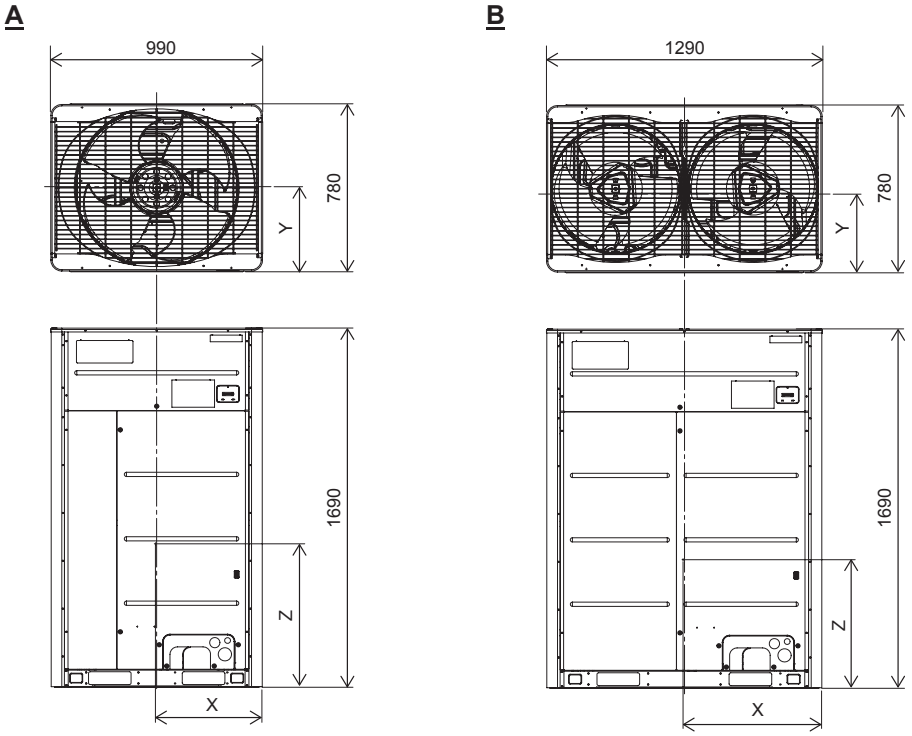
Handle the outdoor unit carefully, observing the following items.

- When using a forklift truck or other machinery for loading/unloading in transportation, insert the fork of the forklift truck into the rectangular holes for handling as shown below.
- When lifting up the unit, insert a rope able to bear the unit's weight into the rectangular holes for handling, and tie the unit from 4 sides.
  (Apply padding in positions where the rope comes into contact with the outdoor unit so that no damage is caused to the outer surface of the outdoor unit.)
  (There are reinforcing plates on the side surfaces, so the rope cannot be passed through.)



■ Weight centre and weight

◆ Weight center of an outdoor unit



No.	Model	X (mm)	Y (mm)	Z (mm)	Mass (kg)
A	MMY-MUP0801∗	540	410	1160	241
	MMY-MUP1001∗				
	MMY-MUP1201∗				
	MMY-MUP1401∗				
B	MMY-MUP1601∗	655	315	785	348
	MMY-MUP1801∗				
	MMY-MUP2001∗				
	MMY-MUP2201∗	625	395	1060	370
	MMY-MUP2401∗				

5 Installation of the outdoor unit

⚠ WARNING

- **Be sure to install the outdoor unit in a place able to bear its weight.**
  If strength is insufficient, the unit may fall down resulting in human injury.
- **Perform specified installation work to protect against strong wind and earthquakes.**
  If the outdoor unit is imperfectly installed, an accident by falling or dropping may be caused.

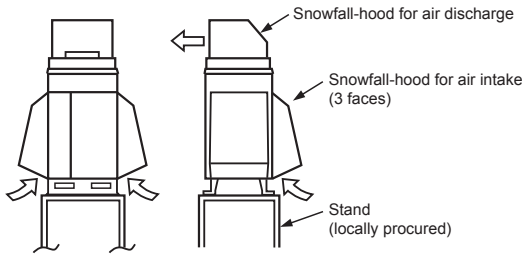
⚠ CAUTION

- Drain water is discharged from the outdoor unit. (Especially while heating)
  Install the outdoor unit in a place with good drainage.
- For installation, be careful of the strength and level of the foundation so that abnormal sounds (vibration or noise) are not generated.

REQUIREMENT

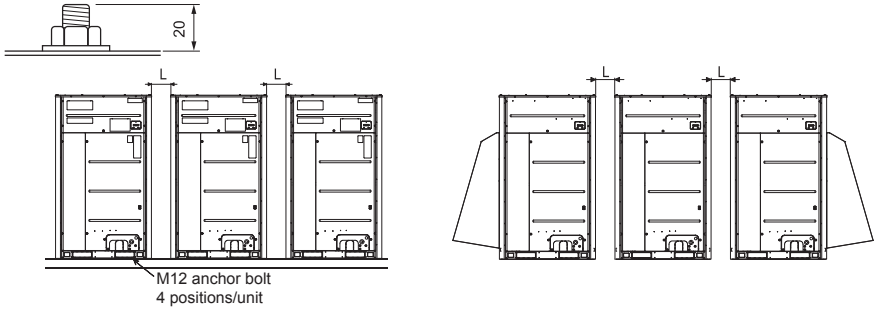
Installation in a snowfall area

1. Install the outdoor unit on a higher foundation than the snowfall or set up a stand to install the unit so that snowfall will not affect the unit.
   - Set up a stand higher than the snowfall.
   - Apply an angled structure to the stand so that drainage will not be prevented. (Avoid using a stand with a flat surface.)
2. Mount a snowfall-hood into the air intake and the air discharge.
   - If attaching a snowfall-hood, remove the fin guard, as snow may accumulate in the exchanger.
   - Leave enough space for the snowfall-hood so that it will not be an obstacle for the air intake and the air discharge.
   - In areas with ambience temperature is between -25°C ~ -34.4°C, install the snowfall-hood on the outdoor unit.
   - -25°C ~ -34.4°C & Heavy snowfall area, mount a snowfall-hood each outdoor unit.



1. To install multiple outdoor units, arrange them with 200 mm (recommendation, at least 20 mm) or more spaces in between.
   Fix each outdoor unit with M12 anchor bolts at 4 positions. 20 mm projection is appropriate for an anchor bolt.

Unit : mm



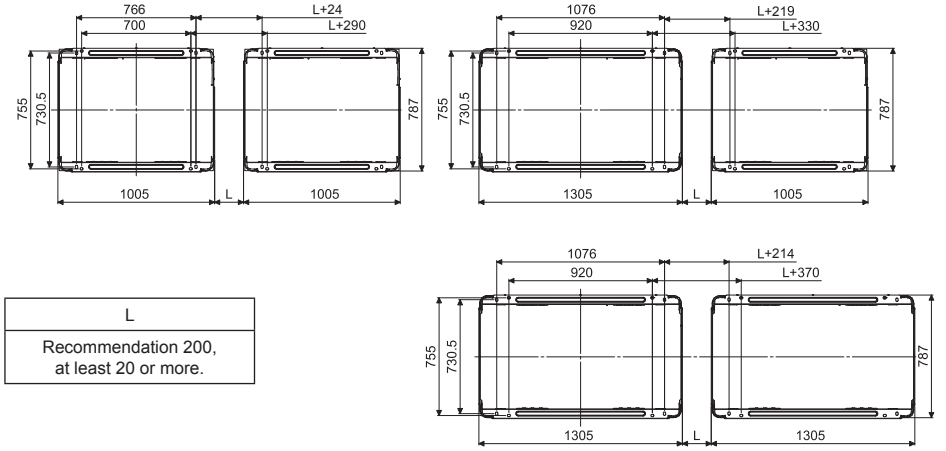
- For the same refrigerant piping group.

Low ambient temperature in area	L
0°C ~ -15°C	200 mm, at least 20 mm or more.
-15°C ~ -34.4°C	200 mm or more.
	-15°C ~ -25°C : With outdoor unit function code setting. (O.DN : 058 / Setting value : 2), Available at least 20 mm or more. Setting is required for each outdoor unit of the same refrigerant piping group. For details on how to set the O.DN, see 11 Applicable control settings.

- For other refrigerant piping groups, keep at least 200 mm apart.

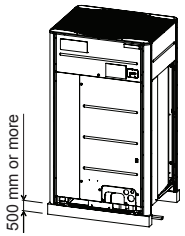
- Anchor bolt positions are as shown below:

Unit : mm

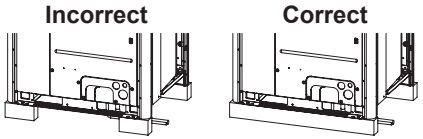


L
Recommendation 200, at least 20 or more.

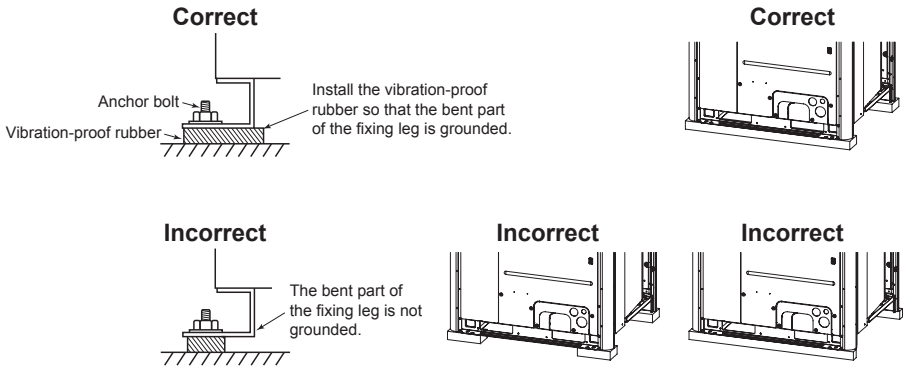
2. When drawing out the refrigerant pipe from the underside, set the height of the stand to 500 mm or more.



3. Do not use 4 stands on the corner to support the outdoor unit.



4. Mount the vibration-proof rubber (including vibration-proof blocks) so that it fits under the whole clamping leg.

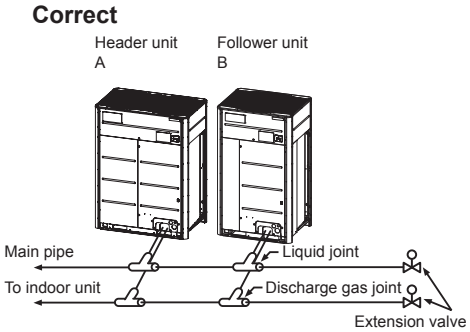


5. Be careful of the connecting arrangement of the header unit and follower units. Set the outdoor units in order of capacity from the one with the largest capacity. (A (Header unit) ≥ B ≥ C)

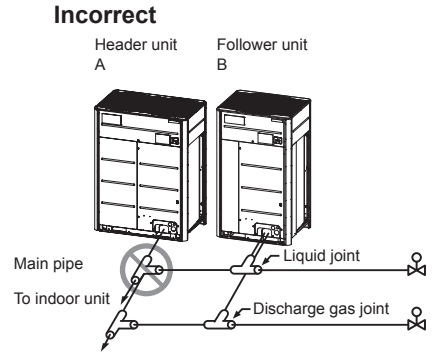
- Be sure to use a header unit for the leading outdoor unit to be connected to the main pipe. (Figure 1 and 3)
- Be sure to use a outdoor unit connection piping kit (RBM-BT14FE/RBM-BT24FE : separately purchased) to connect each outdoor unit.
- Be careful of the direction of the Outdoor unit connection piping kit for the liquid side. (As shown in Figure 2, a Outdoor unit connection piping kit cannot be attached so that the refrigerant of the main pipe flows directly into the header unit.)

Discharge gas / Liquid pipes

▼ **Figure 1**

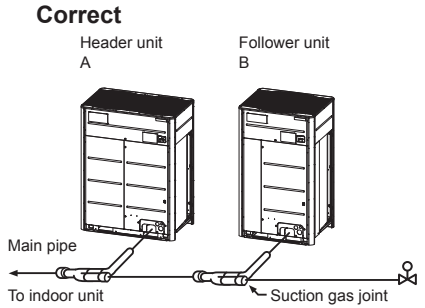


▼ **Figure 2**



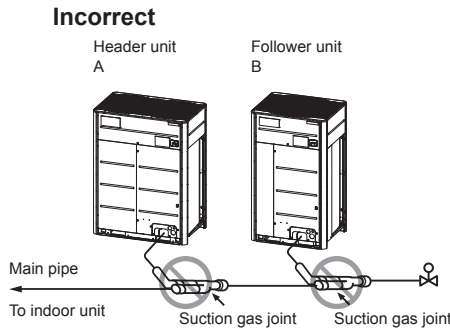
Suction gas

▼ **Figure 3**

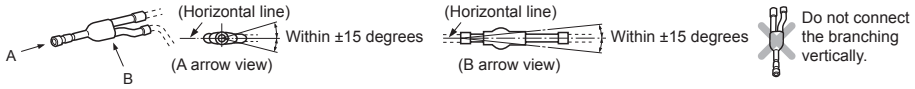


[Inverse connection of a gas-side branch unit]

▼ **Figure 4**

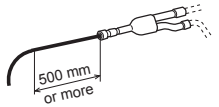


- When attaching a Y-shaped branching joint for the gas side, attach it level with the ground (Be sure not to exceed ±15 degrees.). Regarding a T-shape branching joint for the liquid side, there is no restriction for its angle.



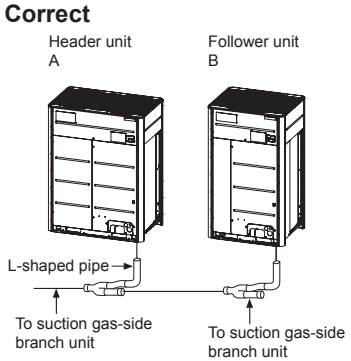
At a level position

- In case of using the Y-shaped branching joint for connecting between outdoor units (Discharge gas joint and Suction gas joint), please keep the straight part of at least 500 mm at the inlet.



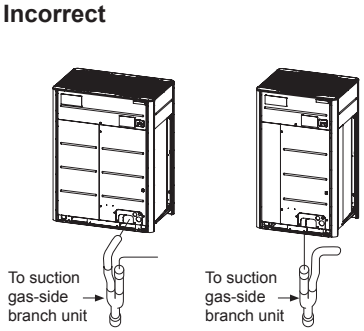
When drawing pipes downward

▼ **Figure 5**



[Vertical connection of branch units]

▼ **Figure 6**



- Adding only one follower unit is possible. Install the additional unit so that its position is opposite to the header unit. Use an extension valve for installation (See the figure above.).
  Specify the pipe diameter in advance to allow for adding another unit.

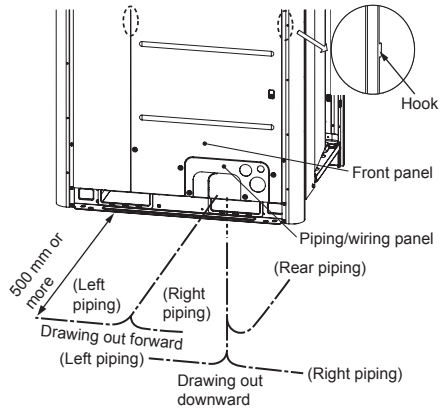
6 Refrigerant piping

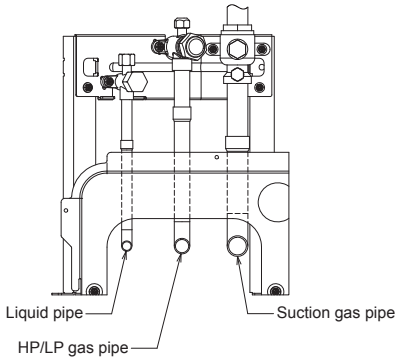
⚠ WARNING

- **If the refrigerant gas leaks during installation, ventilate the room.**
  If the leaked refrigerant gas comes into contact with fire, noxious gas may be generated.
- **After installation, check that the refrigerant gas does not leak.**
  If the refrigerant gas leaks into the room and comes into contact with fire such as a fan heater, stove, or kitchen range, noxious gas may be generated.

■ Connection of refrigerant pipe

- The refrigerant pipe connecting section is set in the outdoor unit. Remove the front panel and the piping/wiring panel. (M5: 8 pcs.)
  - As shown in the illustration on the right, the hooks are at the right and left sides of the front panel. Lift up and remove the front panel.
- Pipes can be drawn out forward or downward from the outdoor unit.
- When drawing out the pipe forward, draw it out to the outside via the piping/wiring panel, and leave a space of 500 mm or more from the main pipe connecting the outdoor unit with the indoor unit, considering service work or other work on the unit. (For replacing the compressor, 500 mm or more space is required.)
- When drawing out the pipe downward, remove the knockouts on the base plate of the outdoor unit, draw the pipes out of the outdoor unit, and perform piping on the right/left or rear side.
- Do not apply any load to the pipes.





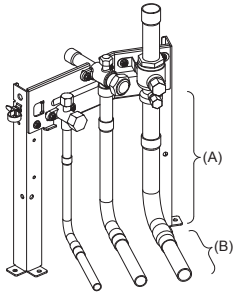
REQUIREMENT

- For a welding work of the refrigerant pipes, be sure to use nitrogen gas in order to prevent oxidation of the inside of the pipes; otherwise clogging of the refrigerating cycle due to oxidized scale may occur.
- Use clean and new pipes for the refrigerant pipes and perform piping work so that water or dust does not contaminate the refrigerant.

Pipe connection method of valve (Example)

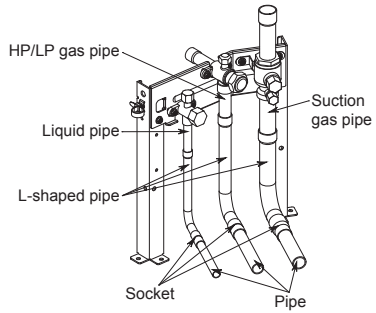
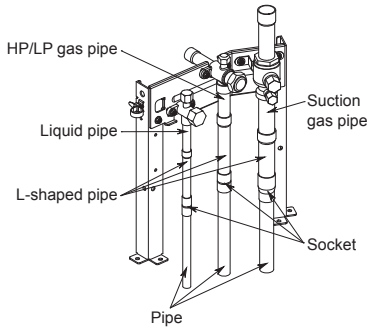
[(A) Valve side piping diameter → (B) Main piping diameter]

Model name	Liquid side (mm)	HP/LP gas side (mm)	Suction gas side (mm)**
MMY-MUP0801F∗	Ø12.7 → Ø12.7	Ø19.1 → Ø19.1	Ø25.4 → Ø19.1*
MMY-MUP100, 120, 1401F∗	Ø12.7 → Ø12.7	Ø19.1 → Ø19.1	Ø25.4 → Ø22.2*
MMY-MUP1601F∗	Ø15.9 → Ø15.9	Ø19.1 → Ø22.2*	Ø25.4 → Ø28.6*
MMY-MUP180, 2001F∗	Ø15.9 → Ø15.9	Ø19.1 → Ø22.2*	Ø25.4 → Ø28.6*
MMY-MUP220, 2401F∗	Ø15.9 → Ø15.9	Ø19.1 → Ø22.2*	Ø25.4 → Ø28.6*



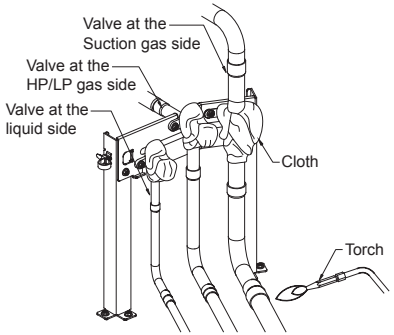
* Even when the piping connection diameter on the outdoor unit side differs from the main piping diameter, prepare and use socket procured locally with a different diameter.

** It is also possible to use an accessory pipe to change the pipe diameter from Ø25.4 on the suction gas side.

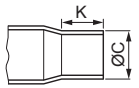
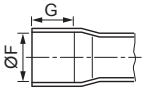
Draw-out forward	Draw-out downward
Cut the L-shaped pipe, then braze the socket and piping procured locally.	Cut the L-shaped pipe, then braze the socket and piping procured locally.
	

⚠ CAUTION

Wrap all the valves in wet cloth to keep them cool and prevent the heat from the torch from damaging it when connecting the pipe to all the valves.



Coupling size of brazed pipe

Connected section	
External size	Internal size
	

Standard outer dia. of connected copper pipe	Connected section					Min. thickness of coupling
	External size	Internal size	Min. depth of insertion		Oval value	
	Standard outer dia. (Allowable difference)					
	C	F	K	G		
mm	mm	mm	mm	mm	mm	mm
6.35	6.35 (±0.03)	6.45 ($^{+0.04}_{-0.02}$)	7	6	0.06 or less	0.50
9.52	9.52 (±0.03)	9.62 ($^{+0.04}_{-0.02}$)	8	7	0.08 or less	0.60
12.7	12.70 (±0.03)	12.81 ($^{+0.04}_{-0.02}$)	9	8	0.10 or less	0.70
15.88	15.88 (±0.03)	16.00 ($^{+0.04}_{-0.02}$)	9	8	0.13 or less	0.80
19.05	19.05 (±0.03)	19.19 ($^{+0.03}_{-0.03}$)	11	10	0.15 or less	0.80
22.2	22.22 (±0.03)	23.36 ($^{+0.03}_{-0.03}$)	11	10	0.16 or less	0.82
28.58	28.58 (±0.04)	28.75 ($^{+0.06}_{-0.02}$)	13	12	0.20 or less	1.00
34.92	34.90 (±0.04)	35.11 ($^{+0.04}_{-0.04}$)	14	13	0.25 or less	1.20
41.28	41.28 (±0.05)	42.28 ($^{+0.08}_{-0.02}$)	15	14	0.28 or less	1.35

■ Selection of pipe materials and sizes

◆ Selection of pipe materials

Materials : Phosphorus deoxidation seam-less pipe. Minimum wall thickness for R410A application.

Soft	Half hard or hard	OD (mm)	Minimum wall thickness
✓	✓	6.35	0.80
✓	✓	9.52	0.80
✓	✓	12.70	0.80
✓	✓	15.88	1.0
	✓	19.05	1.0
	✓	22.22	1.0
	✓	28.58	1.0
	✓	34.92	1.2
	✓	41.28	1.45

◆ Capacity code of indoor and outdoor units

- For the indoor unit, the capacity code is decided at each capacity rank. (Table 1)
- The capacity codes of the outdoor units are decided at each capacity rank. The maximum number of connectable indoor units and the total value of capacity codes of the indoor units are also decided. (Table 2-1, Table 2-2)

NOTE

Compared with the capacity code of the outdoor unit, the total value of capacity codes of the connectable indoor units differs based on the height difference between the indoor units.

- When the height difference between the indoor units is 15 m or less: Up to 200% of the capacity code (Equivalent to HP) of the outdoor unit.
- When the height difference between the indoor units is over 15 m: Up to 105% of the capacity code.
- If MMU-UP ✻✻✻ H is include in the system, total indoor capacity code must be between 50% and 105% of outdoor unit capacity.
- If the system diversity is more than 135%, check the maximum number of indoor unit connections in table 2-1, 2-2, and then turn on DIP switch 3 of SW103 on the interface P.C. Boards.

Table 1

Indoor unit capacity rank	Capacity code	
	Equivalent to HP	Equivalent to capacity
003	0.3	0.9
005	0.6	1.7
007	0.8	2.2
009	1	2.8
012	1.25	3.6
015	1.7	4.5
018	2	5.6
024	2.5	7.1
027	3	8.0
030	3.2	9.0
036	4	11.2
048	5	14.0
056	6	16.0
072	8	22.4
096	10	28.0

Table 2-1 [Diversity: 135%]

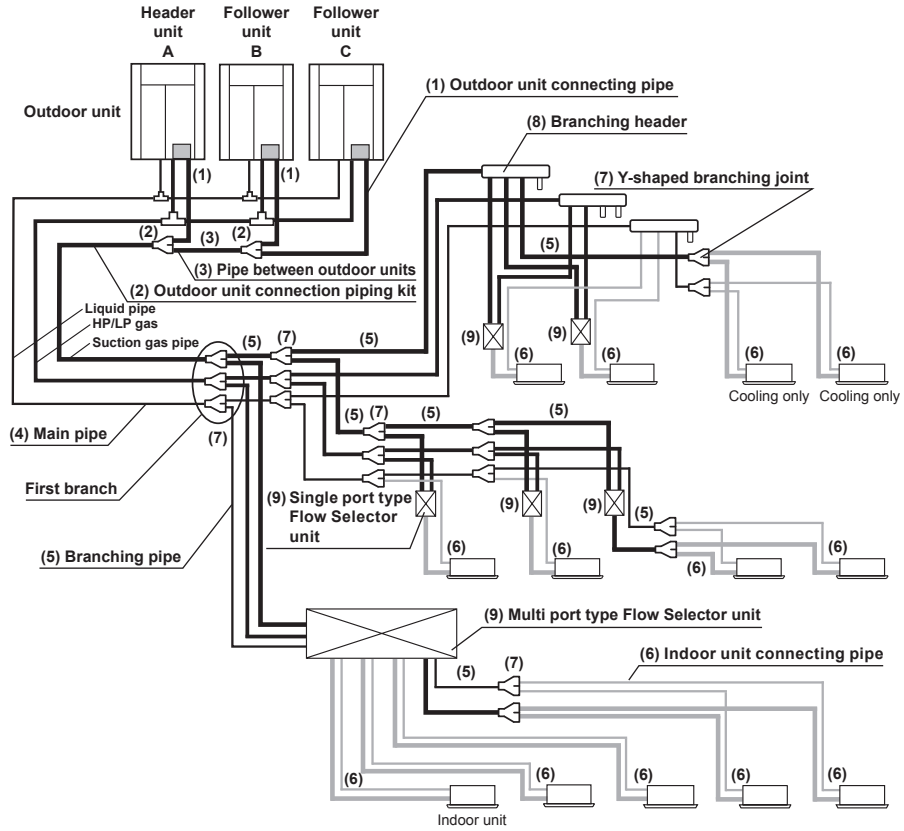
Model name (MMY-) [Standard]	Capacity code		Max. No. of indoor units ※	Total capacity of indoor units	Diversity (%)
	Equivalent to HP	Equivalent to capacity			
MUP0801✻	8	22.4	18 (23)	30.2	135%
MUP1001✻	10	28.0	22 (28)	37.8	135%
MUP1201✻	12	33.5	27 (34)	45.2	135%
MUP1401✻	14	40.0	31 (39)	54.0	135%
MUP1601✻	16	45.0	36 (46)	60.7	135%
MUP1801✻	18	50.4	40 (51)	68.0	135%
MUP2001✻	20	56.0	45 (57)	75.6	135%
MUP2201✻	22	61.5	49 (62)	83.0	135%
MUP2401✻	24	67.0	54 (69)	90.4	135%
UP2611✻	26	73.5	58 (74)	99.2	135%
UP2811✻	28	80.0	63 (80)	108.0	135%
UP3011✻	30	83.9	64 (81)	113.2	135%
UP3211✻	32	89.5	65 (83)	120.8	135%
UP3411✻	34	96.0	66 (84)	129.6	135%
UP3611✻	36	100.5	67 (85)	135.6	135%
UP3811✻	38	107.0	68 (87)	144.4	135%
UP4011✻	40	112.0	69 (88)	151.2	135%
UP4211✻	42	117.4	70 (89)	158.4	135%
UP4411✻	44	123.0	71 (90)	166.0	135%
UP4611✻	46	128.5	72 (92)	173.4	135%
UP4811✻	48	134.0	73 (93)	180.9	135%
UP5011✻	50	140.5	74 (94)	189.6	135%
UP5211✻	52	147.0	75 (96)	198.4	135%
UP5411✻	54	152.0	76 (97)	205.2	135%
UP5611✻	56	156.5	77 (98)	211.2	135%
UP5811✻	58	163.0	78 (99)	220.0	135%
UP6011✻	60	167.5	79 (101)	226.1	135%

※ ( ) = Maximum indoor units when 0.3 HP indoor units only are connected.

Table 2-2 [Diversity 150-200%]

Model name (MMY-) [Standard]	Capacity code		Max. No. of indoor units ※	Total capacity of indoor units	Diversity (%)
	Equivalent to HP	Equivalent to capacity			
MUP0801∗	8	22.4	12	44.8	200%
MUP1001∗	10	28.0	15	56.0	200%
MUP1201∗	12	33.5	18	67.0	200%
MUP1401∗	14	40.0	21	80.0	200%
MUP1601∗	16	45.0	24	90.0	200%
MUP1801∗	18	50.4	27	100.8	200%
MUP2001∗	20	56.0	30	112.0	200%
MUP2201∗	22	61.5	33	123.0	200%
MUP2401∗	24	67.0	36	134.0	200%
UP2611∗	26	73.5	52	110.2	150%
UP2811∗	28	80.0	57	120.0	150%
UP3011∗	30	83.9	58	125.8	150%
UP3211∗	32	89.5	59	134.2	150%
UP3411∗	34	96.0	59	144.0	150%
UP3611∗	36	100.5	60	150.7	150%
UP3811∗	38	107.0	61	160.5	150%
UP4011∗	40	112.0	62	168.0	150%
UP4211∗	42	117.4	63	176.1	150%
UP4411∗	44	123.0	64	184.5	150%
UP4611∗	46	128.5	65	192.7	150%
UP4811∗	48	134.0	66	201.0	150%
UP5011∗	50	140.5	67	210.7	150%
UP5211∗	52	147.0	68	220.5	150%
UP5411∗	54	152.0	68	228.0	150%
UP5611∗	56	156.5	69	234.7	150%
UP5811∗	58	163.0	70	244.5	150%
UP6011∗	60	167.5	71	251.2	150%

■ Selection of pipe size



(1) Outdoor unit connecting pipe (*11)

Outdoor unit capacity type	Liquid side	HP/LP gas side	Suction gas side
MMY-MUP0801∗	12.7 mm	19.1 mm	22.2 mm
MMY-MUP1001∗	12.7 mm	19.1 mm	22.2 mm
MMY-MUP1201∗	12.7 mm	19.1 mm	28.6 mm
MMY-MUP1401∗	15.9 mm	22.2 mm	28.6 mm
MMY-MUP1601∗	15.9 mm	22.2 mm	28.6 mm
MMY-MUP2001∗	15.9 mm	22.2 mm	28.6 mm
MMY-MUP2201∗	15.9 mm	22.2 mm	28.6 mm
MMY-MUP2401∗	15.9 mm	22.2 mm	28.6 mm

(2) Outdoor unit connection piping kit

Total capacity code of outdoor units at downstream side (HP) *1	Model name
Below 26	RBM-BT14FE
26 or more	RBM-BT24FE

(3) Pipe between outdoor units (*11)

Total capacity code of the outdoor units at downstream side (HP) *1	Liquid side	HP/LP gas side	Suction gas side
Below 22	15.9 mm	22.2 mm	28.6 mm
22 to below 36	19.1 mm	28.6 mm	34.9 mm
36 or more	22.2 mm	28.6 mm	41.3 mm

(4) Main pipe (*2) (*11)

Total capacity code of the outdoor (HP)	Liquid side		HP/LP gas side	Suction gas side
	Standard size	Refrigerant saving size (*3) and Farthest pipe length		
below 12	12.7 mm	9.5 mm (90 m)	19.1 mm	22.2 mm
12 to below 14		-		28.6 mm
14 to below 16	15.9 mm	12.7 mm (90 m)	22.2 mm	
16 to below 20				
20 to below 22		-		
22 to below 28	19.1 mm	15.9 mm (90 m)	28.6 mm	34.9 mm
28 to below 36		-		
36 or more	22.2 mm	19.1 mm (90 m)	34.9 mm	41.3 mm

(5) Branching pipe (*8) (*9) (*11)

Total capacity code of indoor units at downstream side *1 Equivalent Capacity code [HP]	Liquid side	HP/LP gas side	Suction gas side
Below 2.4	9.5 mm	12.7 mm	12.7 mm
2.4 to below 6.4	9.5 mm	12.7 mm	15.9 mm
6.4 to below 12.2	12.7 mm	19.1 mm	22.2 mm
12.2 to below 20.2	15.9 mm	22.2 mm	28.6 mm
20.2 to below 25.2	19.1 mm	28.6 mm	34.9 mm
25.2 to below 35.2	19.1 mm	28.6 mm	34.9 mm
35.2 or more	22.2 mm	34.9 mm	41.3 mm

(6) Indoor unit connecting pipe (*9)

Indoor unit capacity type [HP]	Liquid side	Suction gas side	Real liquid side piping length
0.3 - 1.25	6.4 mm	9.5 mm	15 m or less
	9.5 mm	12.7 mm	Exceeds 15 m
1.5 - 2	6.4 mm	12.7 mm	15 m or less
	9.6 mm	15.9 mm	Exceeds 15 m
2.25 - 6	9.6 mm	15.9 mm	
8, 10	12.7 mm	22.2 mm	
12	12.7 mm	28.6 mm	
14	15.9 mm	28.6 mm	

(7) Y-shaped branching joint (*4) (*5)

Total capacity code of indoor units (HP)	Model name	
	For 3 piping	For 2 piping
Below 6.4	RBM-BY55FE	RBM-BY55E
6.4 to below 14.2	RBM-BY105FE	RBM-BY105E
14.2 to below 25.2	RBM-BY205FE	RBM-BY205E
25.2 or more	RBM-BY305FE	RBM-BY305E

(8) Branching header (*4) (*5) (*6) (*7)

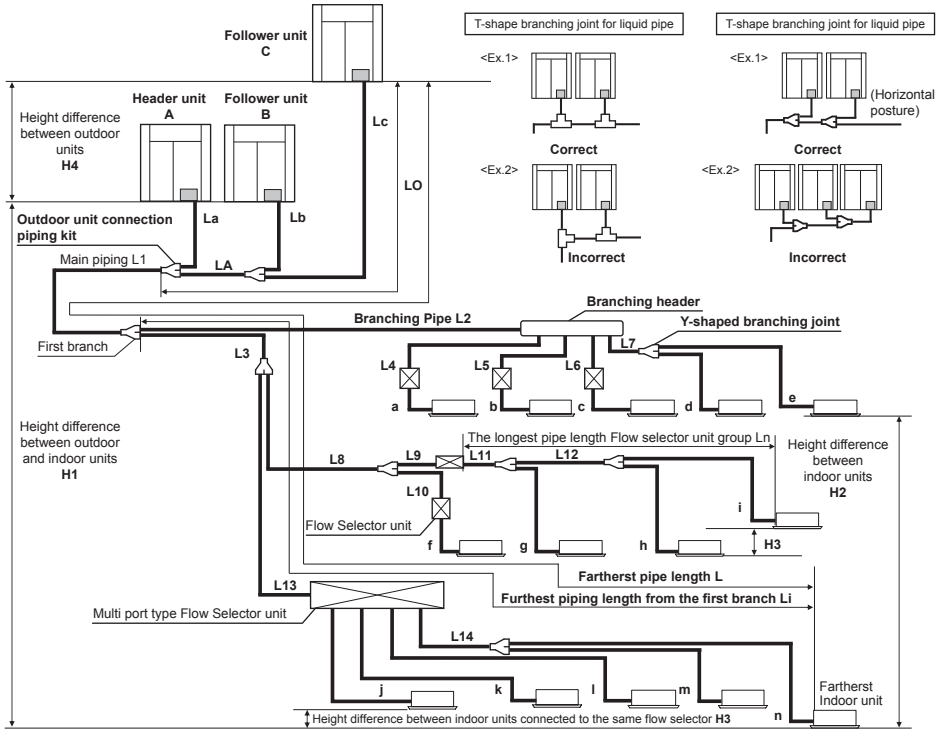
Number of branches	Total capacity code of indoor units	Model name	
		For 3 piping	For 2 piping
For 4 branching	Below 14.2	RBM-HY1043FE	RBM-HY1043E
	14.2 to below 25.2	RBM-HY2043FE	RBM-HY2043E
For 8 branching	Below 14.2	RBM-HY1083FE	RBM-HY1083E
	14.2 to below 25.2	RBM-HY2083FE	RBM-HY2083E

(9) Flow selector unit (*12)

Port type	Total capacity code of indoor units (HP)	Model name	Number of branches
Single port	Below 4.0	RBM-YP1121FUVPE	-
	4.0 to 6.4 or less	RBM-YP1801FUVPE	-
	6.4 to 10.0 or less	RBM-YP2801FUVPE	-
Multi port	Below 25.6 (1 branch: below 6.4)	RBM-YP1801FUW4PE	4
	Below 38.4 (1 branch: below 6.4)	RBM-YP1801FUW8PE	8
	Below 38.4 (1 branch: below 6.4)	RBM-YP1801FUW12PE	12

(*1) : The downstream starting point is the main pipe.
(*2) : Main pipe should be selected based on the capacity type of the outdoor unit.
(*3) : When making the liquid pipe of the main pipe a refrigerant saving size, make height difference between indoor units smaller than 15 m. In addition, the farthest real length pipe is also limited.
(*4) : The branch pipe of the first branch should be selected based on the total capacity code of the outdoor unit (HP).
(*5) : Select branching model based on the outdoor unit total capacity code, in case the indoor units total capacity code exceeds the outdoor unit total capacity code.
(*6) : In case using a branch header as the first branch in the system with outdoor unit total capacity code is **12 HP** to less than 26 HP, use **RBM-HY2043FE** (4 branches) and **RBM-HY2083FE** (8 branches) regardless the downstream indoor units total capacity code. In addition, the branching header cannot be used as the first branch if outdoor units total capacity code is 26 HP or larger.
(*7) : It is possible to select the indoor units that total capacity code up to 6 HP for each one branch of the branching header.
(*8) : If the pipe size is larger than the main pipe, use the same size as the main pipe.
(*9) : Since the liquid side pipe is not connected to the single port type FS unit, the pipe length is longer than the suction side gas pipe.
(*10) : Use a suction gas pipe and a liquid pipe for the two pipes branching downstream from the flow selector unit and the dedicated cooling circuit.
(*11) : If the pipe size is 19.1 mm or more, use a suitable material as detailed in the Installation Manual.
(*12) : Please contact our sales representative when merging downstream piping of multi port type.

■ Allowable length of refrigerant pipes and allowable height difference between units



◆ System restrictions

Outdoor unit combination			3 units
Max. capacity of outdoor unit			60 HP
Max. No. of connected indoor units			79 units
Max. capacity of combined indoor units	H2 ≦ 15 m	Single outdoor unit system	200% of outdoor unit capacity (*1)
		Multiple outdoor unit system	135% of outdoor unit's capacity
	H2 > 15 m		105% of outdoor unit's capacity

(1*): If it exceeds 135%, there is a limit to the maximum number of indoor units that can be connected.

◆ Allowable length and height difference of refrigerant piping

Item				Allowable value (m)	Pipe section
Pipe length	Total extension of pipe (Liquid pipe, Real length)		Single outdoor unit system	500	LA + La + Lb + Lc + L1 + L2 + L3 + L4 + L5 + L6 + L7 + L8 + L9 + L10 + L11 + L12 + L13 + L14 + a + b + c + d + e + f + g + h + i + j + k + l + m + n
			Multiple outdoor unit system	1200 (*2)	
	Furthest piping length **L** (*1)		Equivalent length	200	Lc + LA + L1 + L3 + L13 + L14 + n
			Real length	180	
	Max. main piping length	H2 ≦ 15 m	Equivalent length	120 (*3)	L1
			Real length	100 (*3)	
		H2 > 15 m	Equivalent length	100 (*3)	
			Real length	85 (*3)	
	Furthest equivalent piping length from 1st branch **Li**		H1 > 3 m	50	L3 + L13 + L14 + n
			H1 ≦ 3 m	65	
	Furthest equivalent piping length between outdoor units **LO**			15	LA + Lb, LA + Lc
	Max.Equivalent length of outdoor unit connecting piping			10	La, Lb, Lc
	Max. real pipe length of end branch to the indoor unit			50	L4 + a, L5 + b, L6 + c, d, e, L10 + f, g, h, i
	Max. equivalent pipe length between branches			50	L2, L3, L4, L5, L6, L7, L8, L9, L10
	Max. real pipe length from flow selector to the indoor unit **Ln**			50 (*8)	L11 + g, L11 + L12 + h, L11 + L12 + i, f, L14 + m, L14 + n, j, k, l
	Total pipe length from one Multi-port type flow selector to indoor units. (Real liquid pipe length)		4 branches	120	L14 + j + k + l + m + n
			8 or 12 branches (*4)	180	
Difference in height	Height difference between indoor and outdoor units **H1**	H2 ≦ 3 m	Upper outdoor unit	70	—
				90 (*5)	
			Lower outdoor unit	40	
		H2 > 3 m	Upper outdoor unit	50	
			Lower outdoor unit	40	
	Height difference between indoor units **H2**	Diversity ≦ 105% (*6)	Upper outdoor unit	40	—
			Lower outdoor unit	30	
				3 (*7)	
		Diversity > 105% (*6)	Upper outdoor unit	15	—
			Lower outdoor unit	15	
				3 (*7)	
	Height difference between indoor units connected to the same flow selector **H3**			15	—
	Height between outdoor units **H4**			5	—

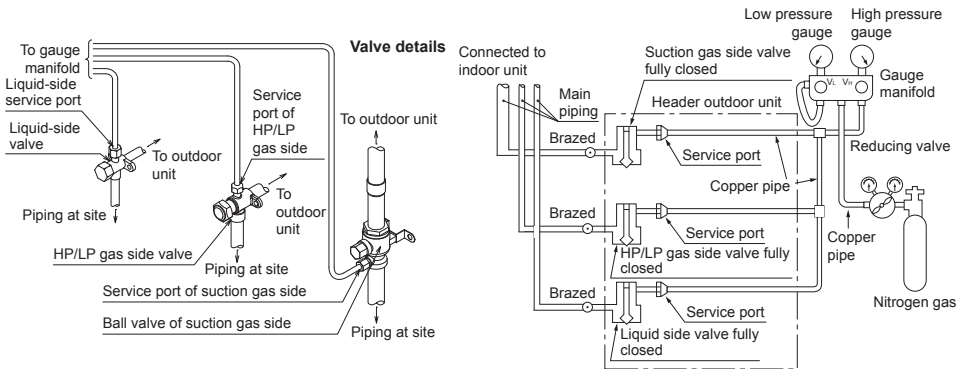
(*1) : C is furthest outdoor unit from the 1st branch and (n) is the furthest indoor unit from the 1st branch.
(*2) : Total amount refrigerant in the system should be 140 kg or less.
(*3) : If the max combinated outdoor unit capacity is 54 HP or more, max equivalent length is 70 m or less. (real length is 50 m or less)
(*4) : When using a Multi-port type flow selector, be sure to set the piping length between indoor unit and the flow selector at least 10 m.
If piping length is not secured 10 m or more, refrigerant noise generated from the Multi-port type flow selector may propagate to the indoor unit.
(*5) : Extension up till 90 m is possible with conditions below:
- Single outdoor unit system.
- Diversity is below 105%.
- Liquid side has been increased 1 size from standard size.
- Change the connection method of the indoor unit from flare connection to welding connection.
(*6) : Diversity is the ratio of the outdoor unit capacity code to the indoor unit capacity code.
(*7) : This limitation is for systems with three outdoor units connected.
(*8) : if the furthest piping length (actual length) exceeds 110 m, it will be limited to 35 m.

■ Airtightness test

After the refrigerant piping has been finished, execute an airtight test.
For an airtight test, connect a nitrogen gas canister as shown in the figure on this page and apply pressure.
- Be sure to apply pressure from the service ports of the packed valves (or ball valve) at the liquid side and (HP/LP, Suction) gas side.
- An airtight test can only be performed at the service ports at the liquid side and (HP/LP, Suction) gas side.
- Close the valves fully at the (HP/LP, Suction) gas side and liquid side. As there is a possibility that the nitrogen gas will enter into the cycle of outdoor units, re-tighten the valve rods at the liquid side before applying pressure.
- For each refrigerant line, apply pressure gradually in steps at the liquid side and (HP/LP, Suction) gas side.
Be sure to apply pressure at the (HP/LP, Suction) gas side and liquid side.

⚠ WARNING

Never use oxygen, flammable gases, or noxious gases in an airtight test.



Able to detect a serious leakage
1. Apply pressure 0.3 MPa for 5 minutes or more.
2. Apply pressure 1.5 MPa for 5 minutes or more.

Available to detect slow leakage
3. Apply pressure 4.15 MPa for approx. 24 hours.

- If there is no pressure decrease after 24 hours, the test is passed.

NOTE

However, if the environmental temperature changes from the moment of applying pressure to 24 hours after that, the pressure will change by about 0.01 MPa (0.1 kg/cm^{2}G) per 1°C. Consider the pressure change when checking the test result.

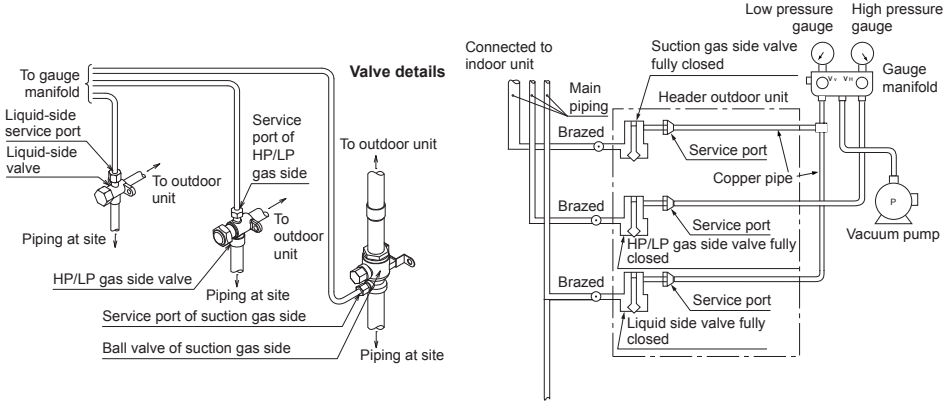
REQUIREMENT

When pressure decrease is detected in steps 1-3, check the leakage at the connecting points.
Check the leakage using a foaming agent or other measures and seal the leak with re-brazing, flare retightening or other methods. After sealing, execute an airtight test again.

■ Vacuum drying

- Before and during installation, do NOT turn on the power until vacuuming and refrigerant charging are completed.
- Be sure to perform vacuuming from both liquid and (HP/LP, Suction) gas side.
- Be sure to use a vacuum pump equipped with the counter-flow prevention function so that oil in the pump will not flow back into piping for air conditioners. (If oil in the vacuum pump enters in the air conditioner with R410A refrigerant, a problem may be caused in the refrigerating cycle.)

After finishing the airtight test and discharging nitrogen gas, connect the gauge manifold to the service ports of the liquid side and (HP/LP, Suction) gas side and connect a vacuum pump as shown in the figure below. Be sure to perform vacuuming for the liquid and (HP/LP, Suction) gas pipe sides.



- Use a vacuum pump with a high vacuuming degree [-100.7 kPa (5 Torr, -755 mmHg)] and large exhaust gas amount (40 L/minute or larger).
- Perform vacuuming for 2 or 3 hours, though the time differs depending on the pipe length. Check that all the packed valves at the liquid side and (HP/LP, Suction) gas side are fully closed.
- If the pressure does not reach -100.7 kPa or less, continue vacuuming for 1 hour or more. If the pressure does not reach -100.7 kPa after 3 hours of vacuuming, stop vacuuming and check for air leakage.
- If the pressure reaches -100.7 kPa or less after vacuuming for 2 hours or more, close the valves VL and VH on the gauge manifold fully and stop the vacuum pump. Leave it as it is for 1 hour to confirm that the vacuuming degree does not change.
  If the degree of vacuum loss is large, moisture may remain in the pipes. In that case, inject dry nitrogen gas and apply pressure to 0.05 MPa and perform vacuuming again.
- After finishing the above procedure of vacuuming, exchange the vacuum pump with a refrigerant canister and advance to the additional charging of refrigerant.

■ Adding refrigerant

After finishing vacuuming, exchange the vacuum pump with a refrigerant canister and start additional charging of refrigerant.

Calculation of additional refrigerant charge amount
Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipes at the local site. For refrigerant to be charged in pipes at the local site, calculate the amount and charge it additionally.

NOTE

If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without additional refrigerant.

Outdoor unit type	MUP0801	MUP1001	MUP1201	MUP1401	MUP1601	MUP1801	MUP2001	MUP2201	MUP2401
Charging amount (kg)	6.0				9.0				

Additional refrigerant charge amount at site = [1] + ([2] × [A]) + [3] + [4]

[1] Compensation by system HP (Table 1)*
[2] Real Length of liquid pipe x additional refrigerant charge amount per 1 m liquid pipe. (Table 2)
[A] Correction factor based on the indoor unit connection capacity.
[3] Corrective amount of refrigerant depending on the Indoor units. (Table 3-1, 3-2 and 3-3)
[4] Corrective amount of refrigerant depending on the outdoor unit diversity (Connected ratio of indoor units to outdoor units). (Table 4)
* If combination of the outdoor units is not same as listed at Table 1, calculate the correction amount refrigerant of the combination outdoor units refers to the each outdoor unit's additional refrigerant.

Table 1

System HP	Combination outdoor units			Compensation by System HP (kg)
	Unit 1 HP	Unit 2 HP	Unit 3 HP	
8	8	—	—	1.0
10	10	—	—	1.0
12	12	—	—	1.0
14	14	—	—	1.0
16	16	—	—	1.0
18	18	—	—	1.5
20	20	—	—	2.0
22	22	—	—	2.0
24	24	—	—	2.0
26	14	12	—	2.0
28	14	14	—	2.0
30	16	14	—	2.0
32	20	12	—	3.0
34	20	14		3.0

System HP	Combination outdoor units			Compensation by System HP (kg)
	Unit 1 HP	Unit 2 HP	Unit 3 HP	
36	20	16	—	3.0
38	20	18	—	3.5
40	20	20	—	4.0
42	14	14	14	3.0
44	20	14	10	4.0
46	20	14	12	4.0
48	20	14	14	4.0
50	20	20	10	5.0
52	20	20	12	5.0
54	20	20	14	5.0
56	20	20	16	5.0
58	20	20	18	5.5
60	20	20	20	6.0

Table 2

Liquid pipe diameter	6.4 mm	9.5 mm	12.7 mm	15.9 mm	19.1 mm	22.2 mm
Additional refrigerant amount per 1 m liquid pipe (kg/m)	0.025	0.055	0.105	0.160	0.250	0.350

Table A

Diversity	Factor
Less than 135%	1.3
135% or more	1.2

Table 3-1

Corrective amount of refrigerant varies according to indoor unit capacity rank.

Indoor unit capacity rank	003	005	007	008	009	010	012	014
Capacity code (Equivalent to HP)	0.3	0.6	0.8	0.9	1	1.1	1.25	1.5
Corrective amount of refrigerant (kg)	0.2							

Indoor unit capacity rank	015	018	020	024	027	030	036	048	056	072	096
Capacity code (Equivalent to HP)	1.7	2	2.25	2.5	3	3.2	4	5	6	8	10
Corrective amount of refrigerant (kg)	0.4						0.6			1.0	

- If the Fresh Air Intake Indoor Unit (MMD-UP****HFP*) is connected, the correction amount refrigerant for Fresh Air Intake Indoor Unit is 0 kg.

Table 3-2

Corrective amount of refrigerant varies for DX Coil Interface TCB-IFDMR01UP-E, TCB-IFDMX01UP-E.

Capacity code (Equivalent to HP)	8	10	12
Corrective amount of refrigerant (kg)	1.4	0.6	0.8

*TF Type : The corrective amount of refrigerant is 0 kg.

Table 3-3

Corrective amount of refrigerant varies for Hot Water Module.

Indoor unit Capacity rank	024	048
Capacity code (Equivalent to HP)	2.5	5
Corrective amount of refrigerant (kg)	0.2	

Table 3-4

Corrective amount of refrigerant varies for (MMU-UP***H-E) High Efficiency 4 way cassette.

Indoor unit Capacity rank	009	012	015	018	024	027	030	036	048	056
Capacity code (Equivalent to HP)	1	1.25	1.7	2	2.5	3	3.2	4	5	6
Corrective amount of refrigerant (kg)	0.2		0.6							

Table 4

Corrective amount of refrigerant.

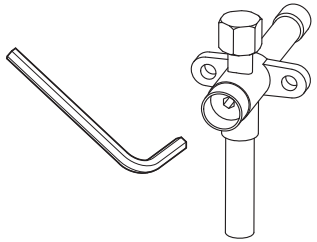
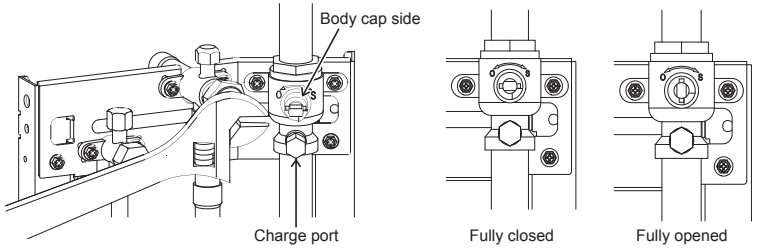
Diversity D (%)	Corrective amount of refrigerant (kg)
50% ≦ D < 60%	-4.5
60% ≦ D < 70%	-3.5
70% ≦ D < 80%	-2.5
80% ≦ D < 90%	-1.5
90% ≦ D < 95%	-0.5
95% ≦ D	0

Charging of refrigerant

- Keeping the valve of the outdoor unit, be sure to charge the liquid refrigerant into the service port at the liquid side.
- If the specified of refrigerant cannot be charged, fully open the valves of the outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode, and then charge refrigerant into service port at the suction gas side. In this time, choke the refrigerant slightly by operating the valve of the canister to charge liquid refrigerant.
- The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.

■ Full opening of the valve

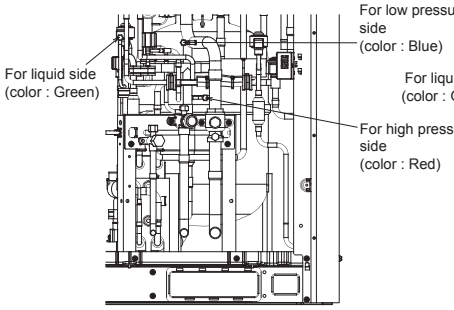
Open the valves of the outdoor unit fully.

Liquid side HP/LP gas side	**Packed valve** Using a 5 mm-hexagonal wrench, turn the valve shaft counterclockwise fully to open it. 
Suction gas side	**Ball valve** Using a wrench, turn it counterclockwise by 90° until it hits the stopper. (Full open) For the ball valve with the stopper, release the stopper to opened or closed the ball valve. When finished working, to set the stopper. Pay attention so that the wrench does not come into contact with the charge port when the body cap is opened or closed. 

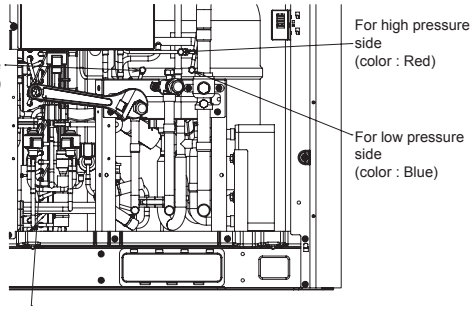
■ Position of the Check-joint

The figure below shows the position of the check-joint.

MMY-MUP08, 10, 12, 1401F*



MMY-MUP16 ,18, 20, 22, 2401F*



When opening and closing the cap with a wrench, be careful not to turn the wrench vigorously as it may come into contact with surrounding parts.

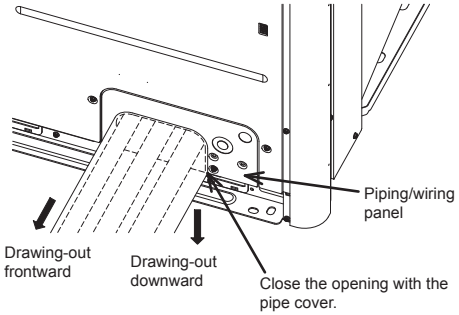
■ Heat insulation for pipe

- Apply heat insulation of pipe separately at the liquid, gas, and balance sides.
- Be sure to use thermal insulator resistant up to 120°C or higher for pipes at the gas side.

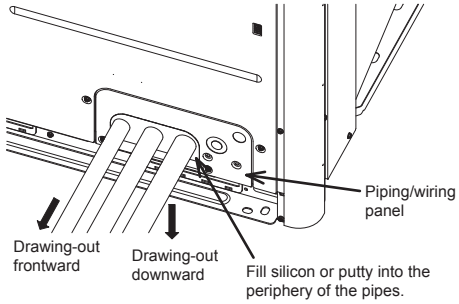
■ Finishing after connecting pipes

- After piping connection work has been finished, cover the opening of the piping/wiring panel with the piping cover, or fill silicon or putty into the space between the pipes.
- In case of drawing-out the pipes downward, also close the openings of the base plate.
- Under the opened condition, a problem may be caused due to the entering of water or dust.

When using the piping cover



When not using the piping cover



■ F-GAS label

This product contains fluorinated greenhouse gases.

- Chemical Name of Gas R410A.
- Global Warming Potential (GWP) of Gas 2088 (ex. R410A ref. AR4).

⚠ CAUTION

1. Stick the enclosed refrigerant label adjacent to the service ports for charging or recovering location and where possible adjacent to existing nameplates or product information label.
2. Clearly write the charged refrigerant quantity on the refrigerant label using indelible ink. Then, place the included transparent protective sheet over the label to prevent the writing from rubbing off.
3. Prevent emission of the contained fluorinated greenhouse gas. Ensure that the fluorinated greenhouse gas is never vented to the atmosphere during installation, service or disposal. When any leakage of the contained fluorinated greenhouse gas is detected, the leak shall be stopped and repaired as soon as possible.
4. Only qualified service personnel are allowed to access and service this product.
5. Any handling of the fluorinated greenhouse gas in this product, such as when moving the product or recharging the gas, shall comply under (EU) Regulation No. 517/2014 on certain fluorinated greenhouse gases and any relevant local legislation.
6. Periodical inspections for refrigerant leaks may be required depending on European or local legislation.
7. Contact dealers, installers, etc., for any questions.

7 Electric wiring

⚠ WARNING

The appliance shall be installed in accordance with national wiring regulations.
Capacity shortages of the power circuit or an incomplete installation may cause an electric shock or fire.

⚠ CAUTION

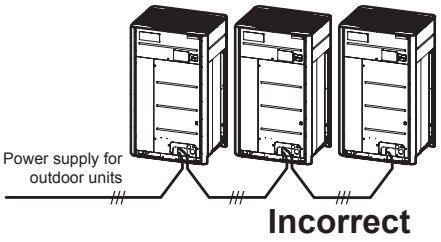
- Perform wiring of power supply complying with the rules and regulations of the local electric company.
- Do not connect 380 V - 415 V power to the terminal blocks for control cables (Uv (U1, U2), Uh (U3, U4), Uc (U5, U6)); otherwise, the unit may break down.
- Be sure that electric wiring does not come into contact with high-temperature parts of piping; otherwise, the coating of cables may melt and cause an accident.
- After connecting wires to the terminal block, take off the traps and fix the wires with cord clamps.
- Process both electric wiring and refrigerant piping into the same system.
- Do not conduct power to indoor units until vacuuming of the refrigerant pipes has finished.
- For the power supply wiring of indoor units, follow the instructions in the Installation Manual of each indoor unit.

NOTE

- Use copper supply wires only.
- Use wiring with insulation rated for the highest voltage involved for communication and power wiring.

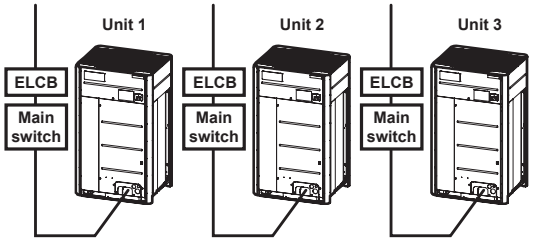
■ Power supply specifications

Do not bridge the power between outdoor units through the equipped terminal blocks (L_1, L_2, L_3).



◆ Power wiring selection

1 Single unit



MCA: Minimum Circuit Amps
MOCP: Maximum Overcurrent Protection (Amps)

Model name	Phase supply	MCA	MOCP
MMY-MUP0801∗	3N ~ 50 Hz 380 - 400 - 415 V	17	20
MMY-MUP1001∗		23	32
MMY-MUP1201∗		27	32
MMY-MUP1401∗		31	40
MMY-MUP1601∗		34	40
MMY-MUP1801∗		38	50
MMY-MUP2001∗		40	50
MMY-MUP2201∗		57	63
MMY-MUP2401∗		60	80

2 Combination of outdoor unit

MCA: Minimum Circuit Amps
MOCP: Maximum Overcurrent Protection (Amps)

Model name	Phase supply	Unit 1			Unit 2			Unit 3		
			MCA	MOCP		MCA	MOCP		MCA	MOCP
MMY-UP2611∗	3N ~ 50 Hz 380 - 400 - 415 V	MMY-MUP1401∗	31	40	MMY-MUP1201∗	27	32	-	-	-
MMY-UP2811∗		MMY-MUP1401∗	31	40	MMY-MUP1401∗	31	40	-	-	-
MMY-UP3011∗		MMY-MUP1601∗	34	40	MMY-MUP1401∗	31	40	-	-	-
MMY-UP3211∗		MMY-MUP2001∗	40	50	MMY-MUP1201∗	27	32	-	-	-
MMY-UP3411∗		MMY-MUP2001∗	40	50	MMY-MUP1401∗	31	40	-	-	-
MMY-UP3611∗		MMY-MUP2001∗	40	50	MMY-MUP1601∗	34	40	-	-	-
MMY-UP3811∗		MMY-MUP2001∗	40	50	MMY-MUP1801∗	38	50	-	-	-
MMY-UP4011∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	-	-	-
MMY-UP4211∗		MMY-MUP1401∗	31	40	MMY-MUP1401∗	31	40	MMY-MUP1401∗	31	40
MMY-UP4411∗		MMY-MUP2001∗	40	50	MMY-MUP1401∗	31	40	MMY-MUP1001∗	23	32
MMY-UP4611∗		MMY-MUP2001∗	40	50	MMY-MUP1401∗	31	40	MMY-MUP1201∗	27	32
MMY-UP4811∗		MMY-MUP2001∗	40	50	MMY-MUP1401∗	31	40	MMY-MUP1401∗	31	40
MMY-UP5011∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	MMY-MUP1001∗	23	32
MMY-UP5211∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	MMY-MUP1201∗	27	32
MMY-UP5411∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	MMY-MUP1401∗	31	40
MMY-UP5611∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	MMY-MUP1601∗	34	40
MMY-UP5811∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	MMY-MUP1801∗	38	50
MMY-UP6011∗		MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50	MMY-MUP2001∗	40	50

■ Communication line

TU2C-LINK models (U series) can be combined with TCC-LINK models (other than U series).
But SHRM-u (Outdoor unit) can NOT be combined with TCC-LINK models (other than U series).
For details of communication type, refer to the following table.

Communication type and model names

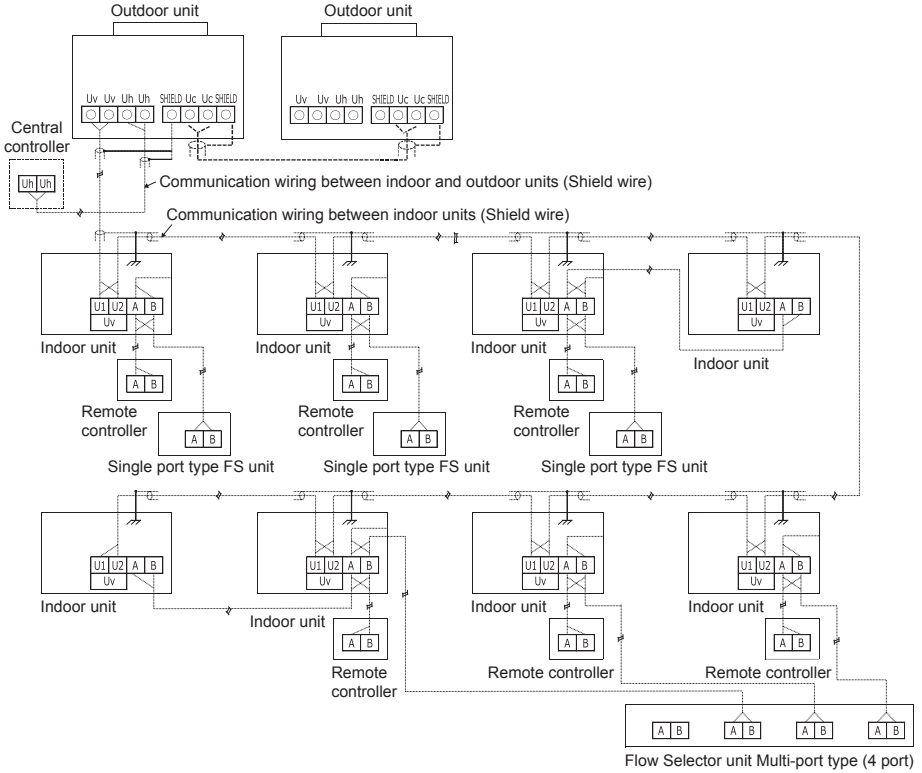
Communication type	TU2C-LINK (U series future models)	TCC-LINK (Other than U series)
Outdoor unit	MMY-MUP∗∗∗ ↑ This letter indicates U series model. MMY-MUP∗∗∗FT∗P∗ ↑ This letter indicates Heat recovery model.	Other than U series MMY-MAP∗∗∗ MCY-MAP∗∗∗
Indoor unit	MM∗-UP∗∗∗ ↑ This letter indicates U series model.	Other than U series MM∗-AP∗∗∗
Flow selector unit	RBM-Y∗∗∗FUP∗ ↑ This letter indicates U series model. RBM-Y∗∗∗FU∗P∗ ↑ This letter indicates U series model.	Other than U series RBM-Y∗∗∗F∗ RBM-Y∗∗∗F∗P∗
Wired remote controller	RBC-A∗∗U∗∗∗ ↑ This letter indicates U series model.	Other than U series
Wireless remote controller kit & receiver unit	RBC-AXU∗∗∗ ↑ This letter indicates U series model.	Other than U series

U series outdoor unit : SMMS-u (MMY-MUP∗∗∗)
SHRM-u outdoor unit : MMY-MUP∗∗∗FT
Other than U series outdoor unit : SMMS-i, SMMS-e etc. (MMY-MAP∗∗∗, MCY-MAP∗∗∗)

■ Specifications for communication wiring

◆ Design of communication wiring

Summary of communication wiring



- Communication wiring and central control wiring use 2-core non-polarity wires.
  Use 2-core shield wires to prevent noise trouble.
- Connecting the closed end terminal of shield wire. (Connected to all connecting sections in each unit)
- Use 2-core non-polarity wire for remote controller. (A, B terminals)
  Use 2-core non-polarity wire for Flow Selector unit Multi-port type and Flow Selector unit Single-port type. (A, B terminals)
  Use 2-core non-polarity wire for wiring of group control. (A, B terminals)

Table-1 Uv line

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	0.75 mm^2 to 1.25 mm^2 : Up to 1000 m

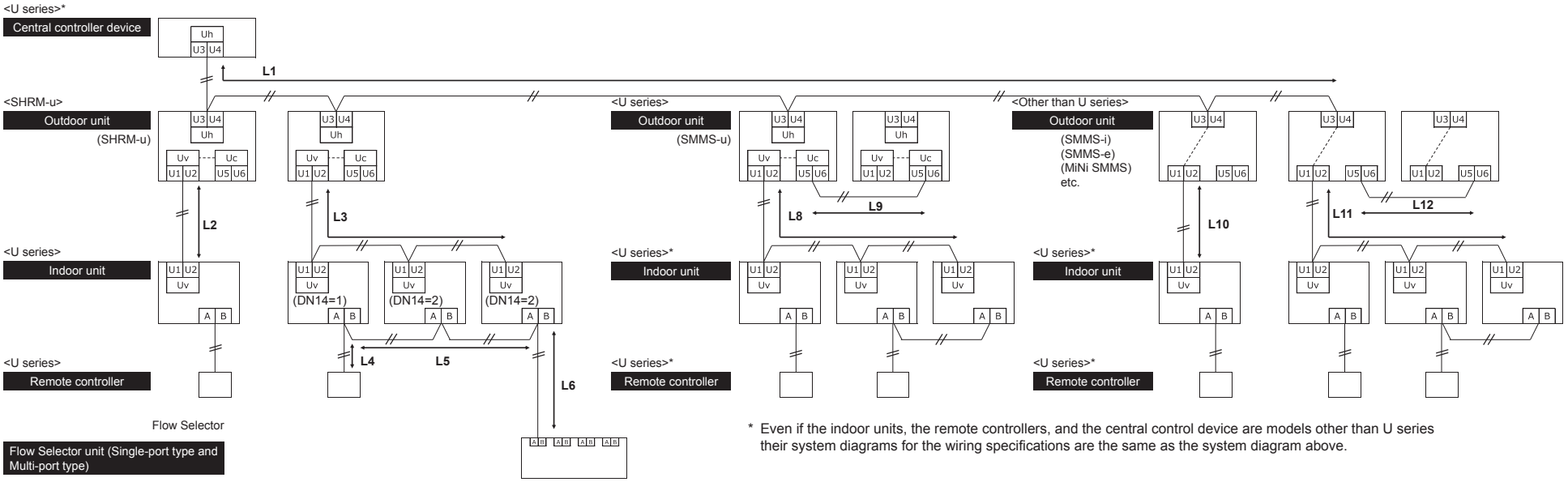
Table-2 Uh line

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	0.75 mm^2 to 1.25 mm^2 : Up to 1000 m 2.0 mm^2 : Up to 2000 m

Table-3 Remote controller wiring, Flow Selector unit Multi-port type and Single - port type wiring

Wiring	2-core, non-polarity
Type	0.5 mm^2 to 2.0 mm^2
Size/Length	Up to 300 m (L4+L5+L6) Up to 400 m in case of wireless remote controller in group control. Up to 200 m total length of communication wiring between indoor units and FS unit (Multi-port type and Single-port type) (L5+L6) Up to 300 m (L4)

- U (v, h, c) line means of control wiring.
  Uv line: Between indoor and outdoor units.
  Uh line: Central control line.
  Uc line: Between outdoor and outdoor units.



* Even if the indoor units, the remote controllers, and the central control device are models other than U series their system diagrams for the wiring specifications are the same as the system diagram above.

REQUIREMENT

- For the central control line (L1) when U-series outdoor units and outdoor units other than U-series are connected to the central control device, follow the communication wiring specifications for outdoor unit other than U-series.
- Using the same wire type and size, wire each line below.
  If the different wire types and sizes are mixed in each line, communication trouble is caused.
  - Central control line and wiring between indoors and outdoor units other than SHRM-u and U-series.
  - Uv line (wiring between indoor and outdoor units) and Uc line (wiring between outdoor and outdoor units) in SHRM-u and U-series.
  - Wiring between outdoor and outdoor units other than SHRM-u and U-series.
- For communication wiring specifications for outdoor unit other than SHRM-u, refer to the Installation Manual attached to the outdoor unit to be connected.

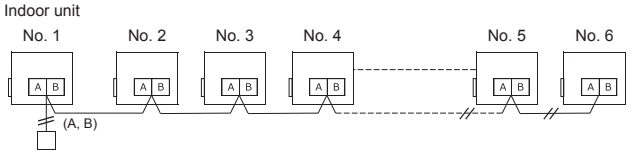
[Uh-line and line / wiring between outdoor and indoor units other than SHRM-u and U series]
Up to 2000 m **(L1 + L10 + L11)**

[Uv line and Uc line in U series]
Up to 1000 m **(L2, L3)**
Up to 1000 m **(L8 + L9)**

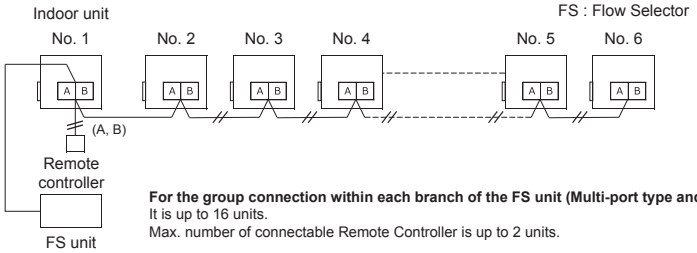
Between outdoor and outdoor units other than SHRM-u and U series
Up to 100 m **(L12)**

◆ Group control through a remote controller

SHRM-u cannot connect to the model other than SHRM-u and U series (TCC-LINK).



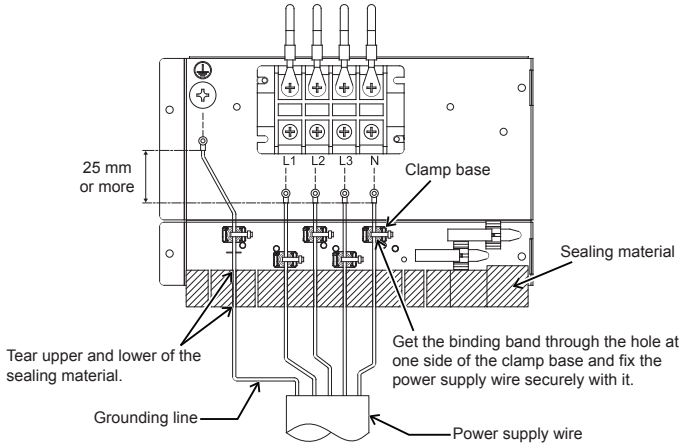
For the group connections without using FS units (Multi-port type, Single-port type) :
It is up to 16 units.
Max. number of connectable Remote Controller is up to 2 units.



For the group connection within each branch of the FS unit (Multi-port type and Single-port type) :
It is up to 16 units.
Max. number of connectable Remote Controller is up to 2 units.

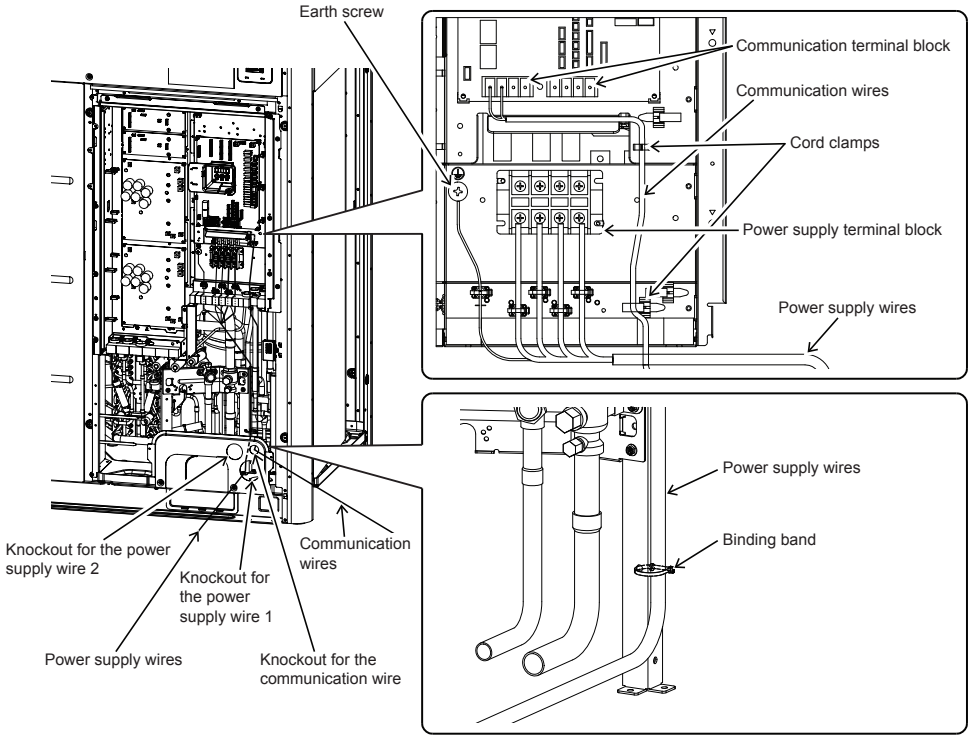
◆ Power supply wire connection

1. Insert the power supply wires from lower right of the electrical control box and connect them to the power terminal blocks and the grounding line to the grounding screw, and then fix each of the five wires with each cord clamp and binding band.
2. When finished wiring the power supply wires, get each of five wires through the cutout on the sealing material (black) under the cord clamp to pull it outside the electrical control box. Tear upper and lower of the cutout on the sealing material with your hands before getting the wires through the cutout.
3. Get the binding band through two holes in the right part of the valve fixing plate and fix the power supply wires with it.



■ Connection of power supply wires and communication wires

Remove knockouts on the piping / wiring panel on the front of the unit and the panel on the bottom to get the power and communication wires through the holes.



NOTE

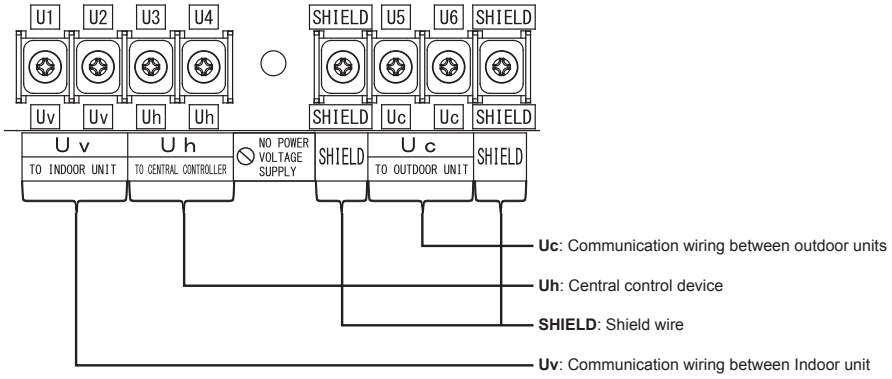
Be sure to separate the power supply wire and communication wires.
Bundle the control wires in the cutout so that they do not get caught in the electrical control box cover.

Screw size and tightening torque

	Screw size	Tightening torque (N•m)
Power supply terminal	M6	2.5 to 3.0
*Grounding screw	M8	5.5 to 6.6

◆ Communication wire connection

1. Insert the communication wires from lower right of the electrical control box and connect them to the communication terminal blocks.
2. Fix the communication wires with the cord clamp on the right of the terminal block and fix them with the cord clamp on the sealing material under the electrical control box, and then get the wires through the cutout on the sealing material to pull them outside the electrical control box. Tear upper and lower of the cutout on the sealing material with your hands before getting the wires through the cutout.



Screw size and tightening torque

	Screw size	Tightening torque (N•m)
Communication wire terminal	M4	1.2 to 1.4

8 Address setting

On this unit, it is required to set the addresses of the indoor units before starting air conditioning.
Set the addresses following the steps below.

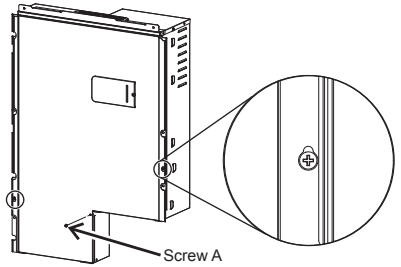
⚠ CAUTION

- Be sure to complete the electric wiring before setting the addresses.
- If you turn on the outdoor unit before turning on the indoor units, the CODE No. [E19] is indicated on the 7-segment display on the interface P.C. Board of the outdoor unit until the indoor units are turned on. This is not a malfunction.
- It may take up to ten minutes (normally about five minutes) to address one refrigerant line automatically.
- Settings on the outdoor unit are required for automatic addressing. (Address setting is not started simply by turning on the power.)
- Running the unit is not required for address setting.

Before setting the address, set the DIP-SW on the header outdoor unit interface P.C. Board.

1. Follow the steps below to open the electrical control box cover

(1) Loosen the screws on the left and right side of the electrical control box cover.
(2) Remove the screw A for MMY-MUP22, 24F∗.
(There are no screws other than the above.)



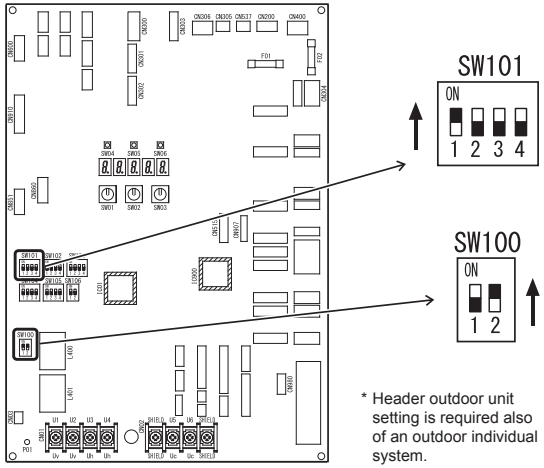
(3) Hold the lower side of the electrical control box cover to draw it toward you while lifting it up, and remove the electrical control box cover.

2. Follow the steps below to set the DIP switch on the header outdoor unit interface P.C. Board.

2-1. Header outdoor unit setting

Turn on DIP switch 1 of SW101 on the header outdoor unit interface P.C. Boards.
And, turn on DIP switch 2 of SW100.

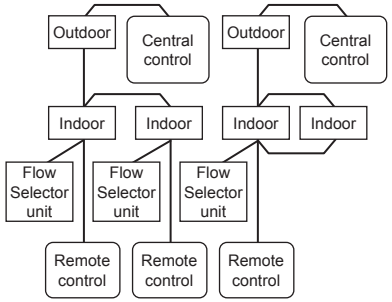
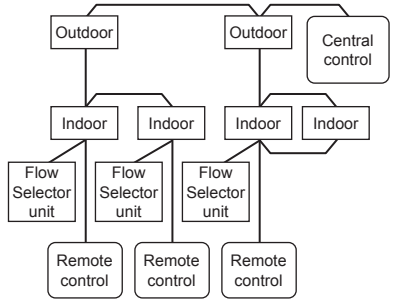
Interface P.C. Board on the header outdoor unit

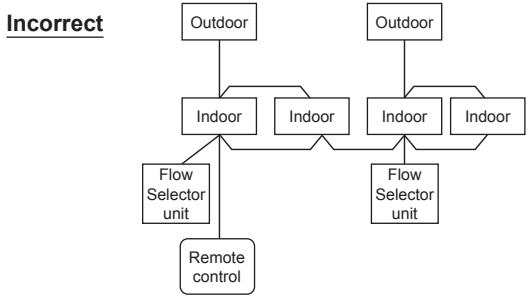


* Header outdoor unit setting is required also of an outdoor individual system.

2-2. Line (system) address setting

For the central control among two or more refrigerant lines or group control among two or more refrigerant lines, set the line (system) address.

(Example)	Controlling a single refrigerant line centrally	Controlling 2 or more refrigerant lines centrally
System wiring diagram		
Line (system) address setting	No	Set the address

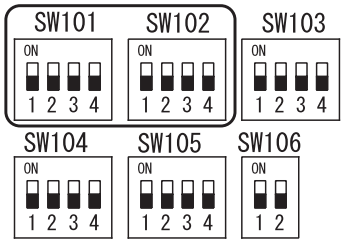
(Example)	Controlling 2 or more refrigerant lines as a group is not permitted
System wiring diagram	

(1) Set a line (system) address for each system using SW101 and 102 on the interface P.C. Board on the header outdoor unit of each system. (Factory default : Address 1)

NOTE

Be sure to set a unique address on each system. Do not use a same address as another system (refrigerant line).

Interface P.C. Board on the header outdoor unit



Switch settings for a line (system) address on the interface P.C. Board on the outdoor unit
(○: switch ON, × : switch OFF)

Line (system) address	SW101				SW102			
	1	2	3	4	1	2	3	4
1	-	×	×	×	×	×	×	×
2	-	×	×	×	×	×	×	○
3	-	×	×	×	×	×	○	×
4	-	×	×	×	×	×	○	○
5	-	×	×	×	×	○	×	×
6	-	×	×	×	×	○	×	○
7	-	×	×	×	×	○	○	×
8	-	×	×	×	×	○	○	○
9	-	×	×	×	○	×	×	×
10	-	×	×	×	○	×	×	○
11	-	×	×	×	○	×	○	×
12	-	×	×	×	○	×	○	○
13	-	×	×	×	○	○	×	×
14	-	×	×	×	○	○	×	○
15	-	×	×	×	○	○	○	×
16	-	×	×	×	○	○	○	○
17	-	×	×	○	×	×	×	×
18	-	×	×	○	×	×	×	○
19	-	×	×	○	×	×	○	×
20	-	×	×	○	×	×	○	○
21	-	×	×	○	×	○	×	×
22	-	×	×	○	×	○	×	○
23	-	×	×	○	×	○	○	×
24	-	×	×	○	×	○	○	○
25	-	×	×	○	○	×	×	×
26	-	×	×	○	○	×	×	○
27	-	×	×	○	○	×	○	×
28	-	×	×	○	○	×	○	○

NOTE

Beware that if the setting is different from what is shown in the table above, the line (system) address will be 28. Because the SW101 bit 1 is a dedicated switch for the header outdoor unit, it is not used for line (system) address setting.

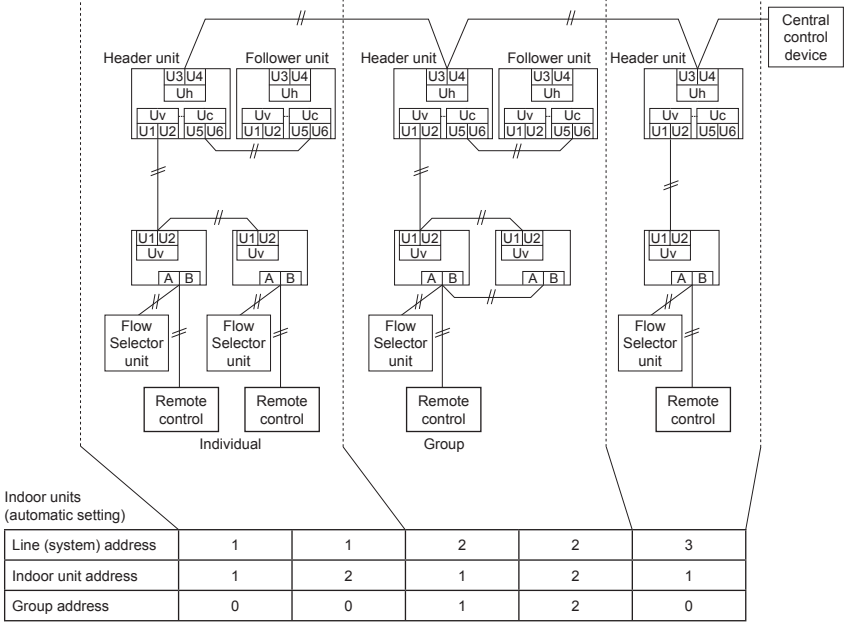
(2) Turn on DIP switch 1 of SW100 on the header outdoor unit interface P.C. Board of the lowest system address number.

Switch setting (setting example when controlling 2 or more refrigerant lines centrally)

Outdoor units (setting manually)

*Must be set manually.

Outdoor unit's interface P.C. Board	Header unit	Follower unit	Header unit	Follower unit	Header unit	Factory default
SW101, 102 (line (system) address	1	(No setting required)	2*	(No setting required)	3*	1
DIP switch 1 of SW100 (Terminator of central control line)	Set to ON*	(No setting required)	(No setting required)	(No setting required)	(No setting required)	OFF



Indoor units (automatic setting)					
Line (system) address	1	1	2	2	3
Indoor unit address	1	2	1	2	1
Group address	0	0	1	2	0

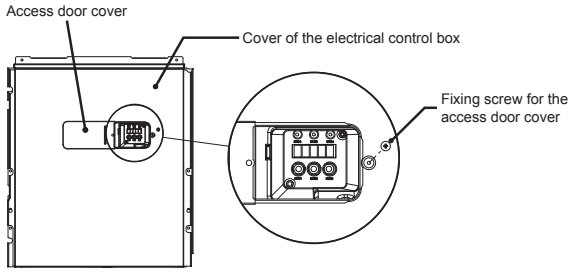
3. Attach the electrical control box cover.

4. Open the access door cover and follow the steps below to set the address.

REQUIREMENT

- High voltage parts exist in the electrical control box.
  If you set addresses on an outdoor unit, operate the unit through the access door as shown in the illustration below to avoid electric shock. Do not remove the cover of electrical control box.

* After finishing operations, close the access door cover and fix it with the screw.



1 **Turn on indoor units first, and then turn on outdoor units.**

2 **About 1 minute after turning the power on, confirm that the 7-segment display on the interface P.C. Board of the header outdoor unit indicates** **U. 1. Err (U. 1. flash)** **and** **L08** **alternately at 1 second intervals.**

3 **Push SW06 for more than 1 second to start the automatic address setting.**
(It may take up to 10 minutes (normally about 5 minutes) to complete one line's setting.)

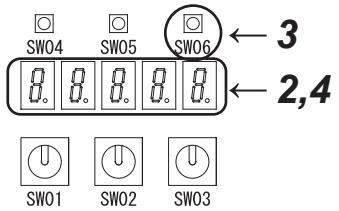
4 **The 7-segment display indicates** **Auto 1 → Auto 2 → Auto 3**.
The setting is complete when the display changes to **U. 1. - - - (U. 1. flash)** **or** **U. 1. - - - (U. 1. light)**.

* When either indoor unit or equipment that is incompatible with TU2C-LINK is connected, "L02" will be displayed.
If "L02" is displayed, check if the connected indoor unit and equipment are compatible with TU2C-LINK.

5 **Repeat steps *2* to *4* for other refrigerant lines.**

6 **Set the central control address.**
(For the setting of the central control address, refer to the Installation Manuals of the central control devices.)

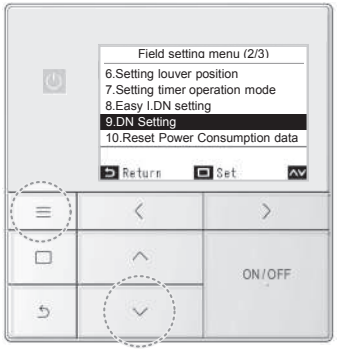
Interface P.C. Board on the header outdoor unit



■ Changing the indoor unit address using a remote control

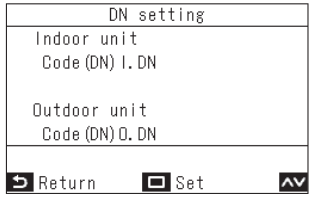
To change an indoor unit address using a wired remote control.

▼ The method to change the address of an individual indoor unit (the indoor unit is paired with a wired remote controller one-tone), or an indoor unit in a group. (The method is available when the addresses have already been set automatically.)



1 **Push [Menu] to open the "Menu".**

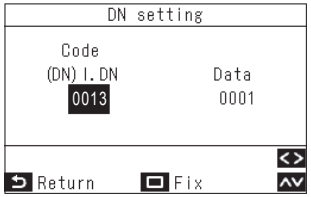
2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu".**
→ Push and hold 4 seconds.

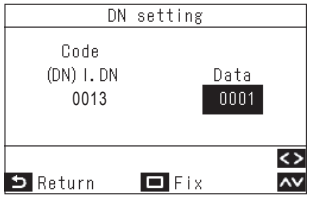


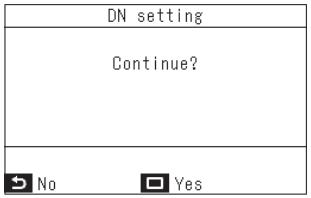
3 **In the "Field setting menu" screen, push [ ] and [ ] to select "DN setting", and then push [Set/Fix].**

4 **Push [ ] and [ ] to select "Indoor unit", and the push [Set/Fix].**
→ "Indoor unit" was selected, the fans and louvers of the indoor units operate.

When doing group connections:
→ The fans and louvers of the selected indoor units operate.







5 **Push [ ] to black highlight the code (DN), and then push [ ] and [ ] to set the code number to [0013]*.**

6 **Push [ ] to black highlight the data, and then push [ ] and [ ] to set the data.**

7 **After finishing setting the data of the code (DN), push [Set/Fix].**
→ "Continue?" is displayed.

8 **To set the data of other codes (DN), push [Set/Fix].**
To not do other settings, push [Return].
→ The changes are fixed, and the "Field setting menu" screen returns.
→ "⌛" appears while data is changing.

When doing group connections:
→ Push [Return] to open the unit selection screen. In the unit selection screen, push [Return] to briefly display "⌛", and then return to the "Field setting menu" screen.

9 **To change settings of another indoor unit, repeat from Procedure *1*.**

* When setting the line (system) address or group address, set the code number to [0012] and [0014] respectively.
Group address [0014] is set as follows.

Individual	: 0000	
Header unit	: 0001	In case of group control
Follower unit	: 0002	

NOTE

1. Check code [E04] (Indoor / outdoor communication trouble) will appear if line (system) addresses are mistakenly set.
2. If you set addresses to indoor units in 2 or more refrigerate lines manually using the remote control and will control them centrally, set the header outdoor unit of each line as below.
   - Set a system address for the header outdoor unit of each line with SW101 and 102 of their interface P.C. Boards.
   - Turn on DIP switch 1 of SW100 on the header outdoor unit interface P.C. Board of the lowest system address number.
   - After finishing all the settings above, set the address of the central control devices. (For the setting of the central control address, refer to the Installation Manuals of the central control devices.)

■ Resetting the address (Resetting to the factory default (address undecided))

Method 1
Clearing each address separately using a wired remote control.
Set the system address, indoor unit address and group address to "00Un" using a wired remote control.
(For the setting procedure, refer to the address setting procedures using the wired remote control on the previous pages.)

Method 2
Clearing all the indoor unit addresses on a refrigerate line at once from the outdoor unit.

1 **Turn off the indoor and outdoor units of the refrigerant line to reset to the factory default and set the header outdoor unit of the line as below.**

2 **Turn on the indoor and outdoor units of the refrigerant line for which you want to initialize the addresses. About one minute after turning on the power, confirm that the 7-segment display on the header outdoor unit indicates "U.1. - - -" and operate the interface P.C. Board on the header outdoor unit of the refrigerant line as follows.**

SW01	SW02	SW03	SW04	Clearable addresses
2	1	2	Confirm that the 7-segment display indicates "A.d.buS" and turn SW04 ON for more than five seconds.	System / indoor unit / group address
2	2	2	Confirm that the 7-segment display indicates "A.d.nEt" and turn SW04 ON for more than five seconds.	Central control address

3 **Confirm that the 7-segment display indicates "A.d.c.L." and set SW01, SW02 and SW03 to 1, 1, 1 respectively.**

4 **After finished clearing the address successfully, "U.1.Err" and "L08" appear alternatively at 1 second intervals on the 7-segment display.**

5 **Set the addresses again after finishing the clearance.**

9 Communication setting

This product needs setting TU2C-LINK communication after the address setting.
Follow the procedure below for the communication setting.
TCC-LINK communication has been set as the factory default.

⚠ CAUTION

- Be sure to complete the electric wiring before setting the addresses.
- It may takes approximately 1 to 3 minutes to address one refrigerant line.
- Settings on the outdoor unit are required for communication setting.
  (Communication setting is not started simply by turning on the power.)
- If outdoor units for which communication setting has already been made are connected, the setting cannot be made correctly.
  In this case, reset the communication setting and perform the setting again.

■ Communication setting

1 **Turn on indoor units first, and then turn on outdoor units.**

2 **Set the rotary switch of the interface P.C. Board on the header outdoor unit to SW01 = [2], SW02 = [16] and SW03 = [2].**

3 **The 7-segment display switches between “c.c. b p s” and “c.c. 0” at 1-second intervals.**

4 **Push and hold SW04 for more than 5 seconds.**

5 **The 7-segment display flashes “c.c.i n”.**

6 **The 7-segment display switches between “c.c. i n” and “c.c.∗∗∗” at 1-second intervals.**
The number of connected indoor unit is displayed in [∗∗∗], so if it is correct, proceed to “7”.
In parentheses are the measures to be taken when the number of indoor units is different.
(When the number of the connected indoor units differs from the number of indoor units displayed on the 7-segment display, clear the communication type setting to eliminate the cause.
To clear the communication type setting, push and hold the SW05 for 5 seconds or more.
The 7-segment display flashes “c.c.r S t”.
After a while, the 7-segment display switches between “c.c. b p s” and “c.c. 0”.

7 **Push and hold SW06 for more than 5 seconds.**

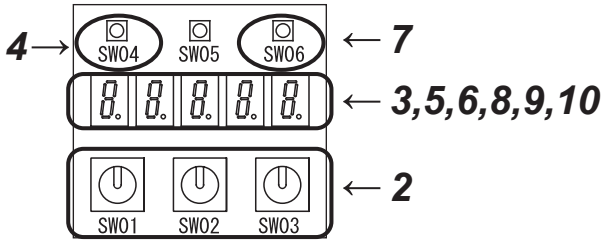
8 **The 7-segment display flashes “c.c.b p s”.**
After that, the setting is complete when the 7-segment display changes to “c.c F i n”.
(If the 7-segment display changes to “c.c. E r r”, try again.)
When either a TU2C-LINK incompatible device is connected, “L02” will be displayed for 30 minutes.
If “L02” is displayed, please check whether the connected device is a device compatible with TU2C-LINK.

9 **After a while, the 7-segment display switches between “c.c. b p s” and “c.c. 1” (or “c.c. o”) at 1- second intervals.**

10 **Set back the rotary switch on the interface P.C. Board of the header outdoor unit to SW01 = [1], SW02 = [1] and SW03 = [1].**

7-segment display		Communication type
[A] [c.c.] [c.c.]	[B] [b p s] [1]	TU2C-LINK (U series and future models)

Interface P.C. Board on the header outdoor unit



■ Resetting the communication (Return to factory default)

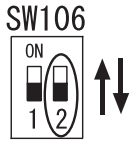
1 **Turn off indoor units first and then turn off outdoor units.**

2 **Set SW106-2 on the interface P.C. Board of the header outdoor unit to ON.**

3 **Turn on outdoor units first and then turn on indoor units.**
(Turn on the header unit, and then 20 seconds or more later, turn on the follower units and indoor units. If the follower units cannot be turned on after the header unit has been turned on, turn on both of them simultaneously. After that, turn on the indoor unit.)

4 **The 7-segment display indication “ - r S t. - ”. Check all the units have turned on more than approx. 1 minute. Turn off all the indoor and outdoor units.**

5 **Set SW106-2 on the interface P.C. Board of the header outdoor unit to OFF.**

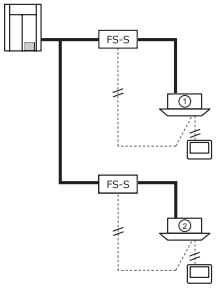


■ Flow Selector unit address setting

On this unit, it is required to set the addresses of Flow selector units before starting air conditioning.
Set the addresses following below procedure.
If all of the following device configurations are satisfied, Flow Selector unit address setting is not required.
Can be used with factory settings.

- Flow Selector unit Multi-port type are NOT connected to the same refrigerant system.
- Multiple indoor units are NOT connected to one single port FS unit.

For device configurations other than those listed above, FS unit address settings are required.



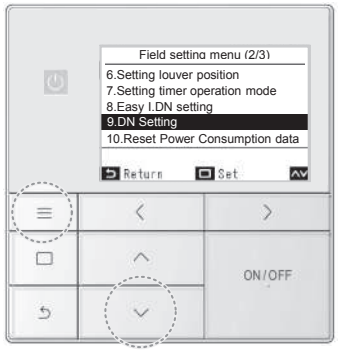
■ Before Flow Selector unit address settings

Complete “Indoor unit address setting” and “TU2C-LINK communication setting”.
Confirm the schematic of piping and wiring.

⚠ CAUTION

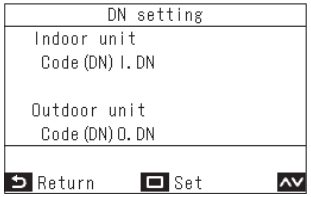
Set only the Code (DN) number shown in the following table: DO NOT set any other Code (DN) number.
If a Code (DN) number not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.

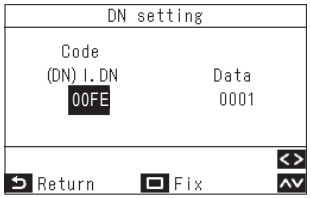
▼ The method to change the address of an individual indoor unit (the indoor unit is paired with a wired remote controller one to one), or an indoor unit in a group.
(The method is available when the addresses have already been set automatically.)

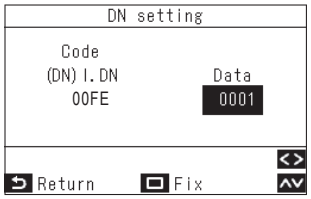


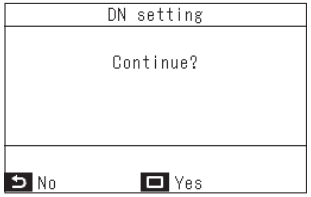
1 **Push [Menu] to open the “Menu”.**

2 **Push and hold [Menu] and [ ] at the same time to open “Field setting menu”.**
→ Push and hold 4 seconds.









3 **In the “Field setting menu” screen, push [ ] and [ ] to select “DN setting”, and then push [Set/Fix].**

4 **Push [ ] and [ ] to select “Indoor unit”, and the push [Set/Fix].**
→ “Indoor unit” was selected, the fans and louvers of the indoor units operate.

When doing group connections:
→ The fans and louvers of the selected indoor units operate.

5 **Push [ ] to black highlight the code (DN), and then push [ ] and [ ] to set the code number to [00FE], [0105], [0106].**

6 **Push [ ] to black highlight the data, and then push [ ] and [ ] to set the data.**

7 **After finishing setting the data of the code (DN), push [Set/Fix].**
→ “Continue?” is displayed.

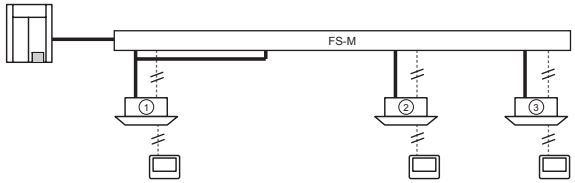
8 **To set the data of other codes (DN), push [Set/Fix].**
To not do other settings, push [Return].
→ The changes are fixed, and the “Field setting menu” screen returns.
→ “⧖” appears while data is changing.

When doing group connections:
→ Push [Return] to open the unit selection screen. In the unit selection screen, push [Return] to briefly display “⧖”, and then return to the “Field setting menu” screen.

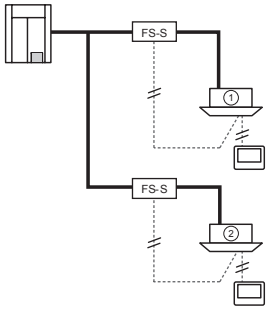
9 **To change settings of another indoor unit, repeat from Procedure *1*.**

Function	I.DN	Setting	Factory default
Flow Selector unit address	00FE	0000 to 0128 Set a unipue address for Flow Selector unit in the system. Should not be duplicate flow selector unit addresses in one system.	00Un
Flow Selector unit port address	0105	0001 to 0012 Set a unique address for each port in a Flow Selector unit Multi-port type. Should not be duplicate port addresses in one Flow Selector unit Multi-port type.	0000
Combining branches mode	0106	0000 : Invalid 0001 : Valid	0000

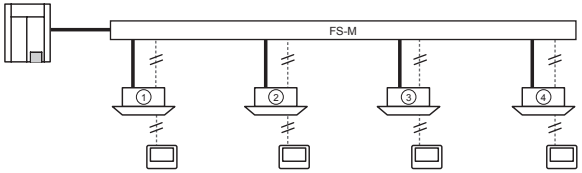
Examples of Flow Selector unit address setting



I. DN	Indoor unit		
	①	②	③
[00FE]	1	1	1
[0105]	1	3	4
[0106]	1	0	0

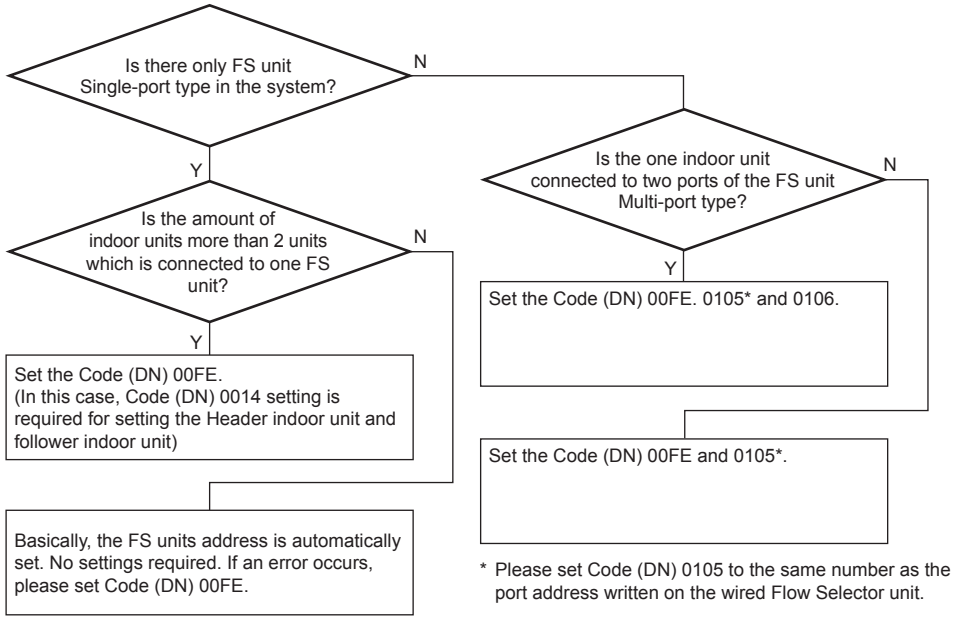


I. DN	Indoor unit	
	①	②
[00FE]	1	2
[0105]	1	1
[0106]	0	0



I. DN	Indoor unit			
	①	②	③	④
[00FE]	1	1	1	1
[0105]	1	2	3	4
[0106]	0	0	0	0

How to judge the setting of Code (DN)
The required settings of Code (DN) depend on system configuration.
Please follow below flow chart.



* Please set Code (DN) 0105 to the same number as the port address written on the wired Flow Selector unit.

[Connection rules]
- It is possible to branch after the port.
- It is possible to set the group of indoor units after the port.
- The Flow Selector unit Multi-port type can group indoor units with adjacent ports.
  1) Group settings across ports are allowed only adjacent (contiguous) ports.
  2) Only some indoor units in one port are not allowed to be grouped with the indoor units on other ports.
  (It is allowed to group all indoor units in one port with the indoor units of other ports.)
- Ports can be combined and used.
  1) Port combined use should be up to 2 ports, and combined use of 3 or more ports is not allowed.
  2) Port combined use is allowed only for adjacent ports.
- Group settings across Flow Selector units are not allowed.
- It is not possible to set the port combined use across the P.C. Board of the Flow Selector unit Multi-port type.
- Be sure to connect the No.1 port of the Flow Selector unit Multi-port type to the indoor unit.
  (If the indoor unit is not connected to No.1 port, the air conditioning system will not operate.)
- Connect one communication line between Header indoor unit and Flow Selector unit when Same group indoor units in the Flow Selector unit Multi-port type.
  (On the Flow Selector unit Multi-port type side, connect to the AB terminal with the lowest address in the same indoor unit group.)

: Outdoor unit

: Indoor unit

: Remote controller

FS-S : Single port type FS unit

FS-M : Multi port type FS unit

: Piping

--------- : Control wiring

◆ [Indoor Code DN number Setting example]

[0014] : Indoor unit Group address
- 0 : Individual (Factory default)
- 1 : Header unit
- 2 : Follower unit

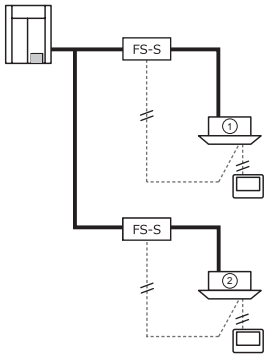
[00FE] : Flow selector unit address.
- Should not be duplicate in one system.
- Factory default : Un

[00FD] : Priority operation mode.
- 0 : Heating prioritized (Factory default)
- 1 : Cooling prioritized (The cooling is prioritized even if setting only one unit in one branching)

[0105] : FS unit port address (1~12)
- As for multi port type FS unit, set up within the range of 1~12.
- As for both single port type FS unit and shut-off valve unit, set up Code No. “105” to 1.

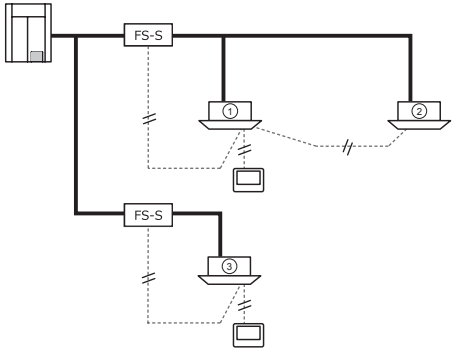
[0106] : Combining branches mode of the multi port type FS unit.
- 0 : NOT combining branches mode.
- 1 : Combining branches mode.

In case of connecting one indoor unit to single port type FS unit.



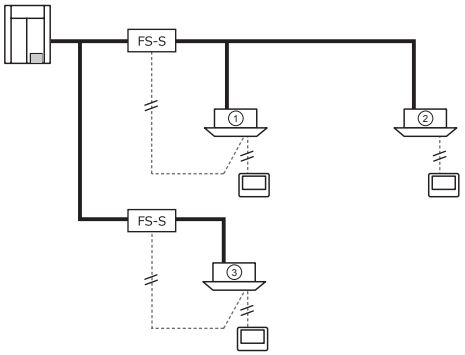
Indoor unit	①	②
[0014]	0	0
[00FE]	1	2
[00FD]	0	0
[0105]	1	1
[0106]	0	0

In case of connecting one group operation of indoor units to single port type FS unit.



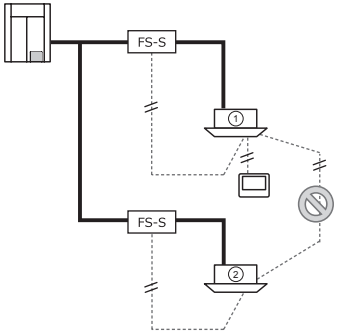
Indoor unit	①	②	③
[0014]	1	2	0
[00FE]	1	1	2
[00FD]	0	0	0
[0105]	1	1	1
[0106]	0	0	0

In case of connecting two indoor units to single port type FS unit.

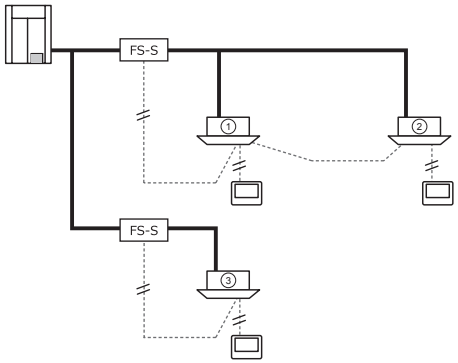


Indoor unit	①	②	③	
[0014]	0	0	0	
[00FE]	1	1	2	
[00FD]	0	0	0	
[0105]	1	1	1	It is not necessary to set up.
[0106]	0	0	0	It is not necessary to set up.

Incorrect connection example

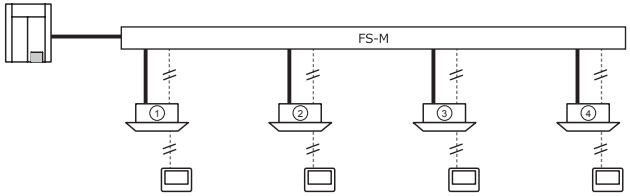


In case of connecting one group operation of indoor unit to single port type FS unit and two remote controller.



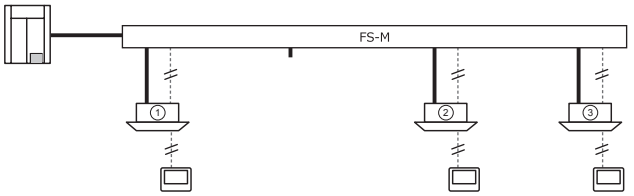
Indoor unit	①	②	③	
[0014]	1	2	0	
[00FE]	1	1	2	
[00FD]	0	0	0	
[0105]	1	1	1	It is not necessary to set up.
[0106]	0	0	0	It is not necessary to set up.

In case of connecting one indoor unit to one port of multi port type FS unit.



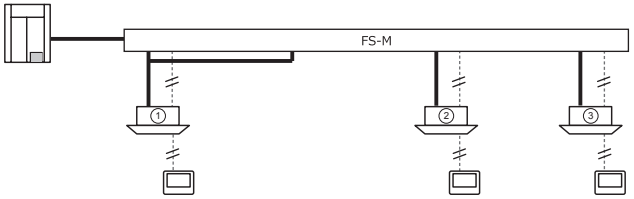
Indoor unit	①	②	③	④
[0014]	0	0	0	0
[00FE]	1	1	1	1
[00FD]	0	0	0	0
[0105]	1	2	3	4
[0106]	0	0	0	0

In case of connecting one indoor unit and not connecting indoor unit to one port of multi port type FS unit.



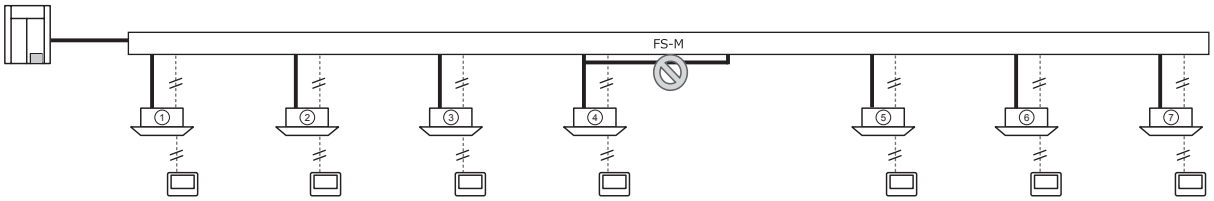
Indoor unit	①	②	③
[0014]	0	0	0
[00FE]	1	1	1
[00FD]	0	0	0
[0105]	1	3	4
[0106]	0	0	0

In case of connecting to combining branches of multi port type FS unit.

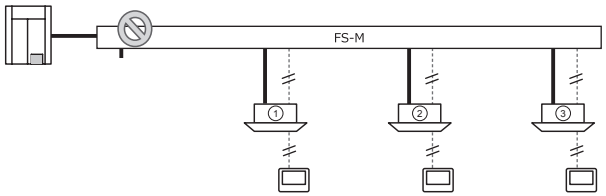


Indoor unit	①	②	③
[0014]	0	0	0
[00FE]	1	1	1
[00FD]	0	0	0
[0105]	1	3	4
[0106]	1	0	0

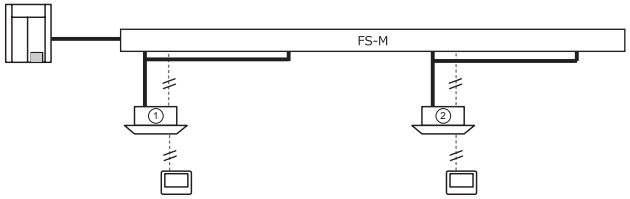
Incorrect connection



Incorrect connection

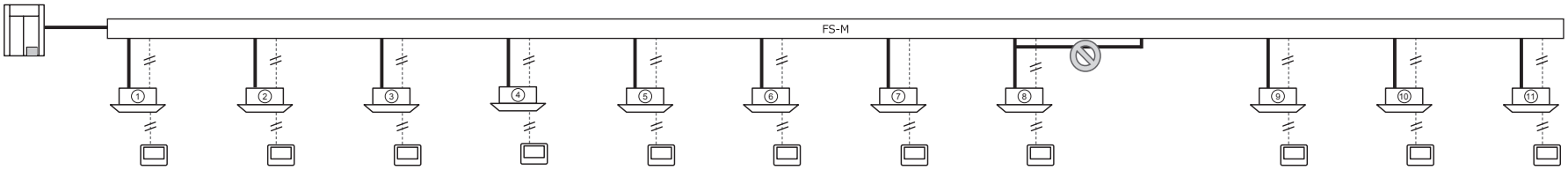


In case of connecting to combining branches of multi port type FS unit, and there are multiple in the system.

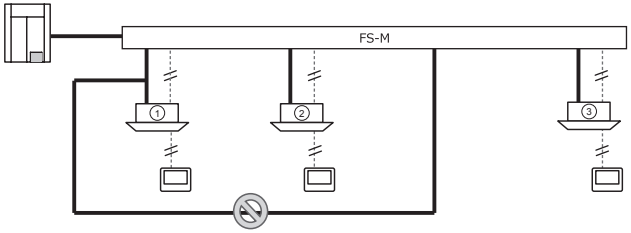


Indoor unit	①	②
[0014]	0	0
[00FE]	1	1
[00FD]	0	0
[0105]	1	3
[0106]	1	1

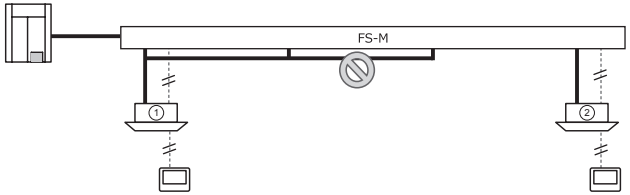
Incorrect connection



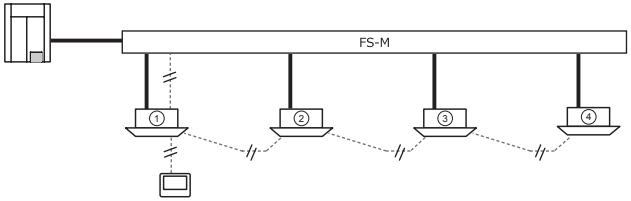
Incorrect connection



Incorrect connection

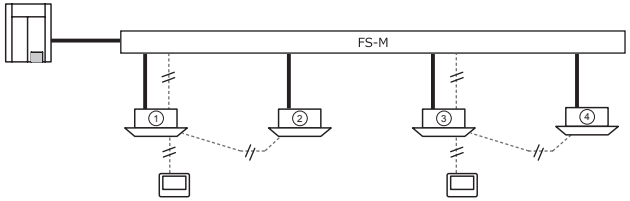


In case of one group operation of indoor units to multiple ports of multi port type FS unit.



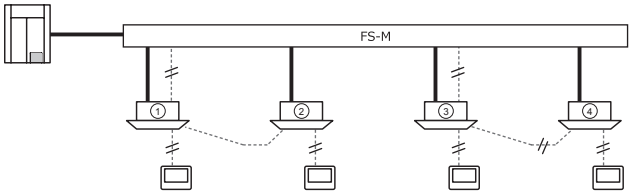
Indoor unit	①	②	③	④
[0014]	1	2	2	2
[00FE]	1	1	1	1
[00FD]	0	0	0	0
[0105]	1	2	3	4
[0106]	0	0	0	0

In case of two group operations of indoor units to multiple ports of multi port type FS unit.



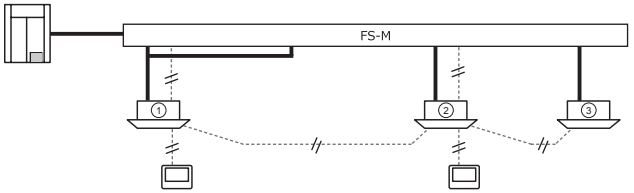
Indoor unit	①	②	③	④
[0014]	1	2	1	2
[00FE]	1	1	1	1
[00FD]	0	0	0	0
[0105]	1	2	3	4
[0106]	0	0	0	0

In case of connecting two group operation of indoor units to multiple ports of multi port type FS unit, and connecting two remote controllers to one group of indoor unit.



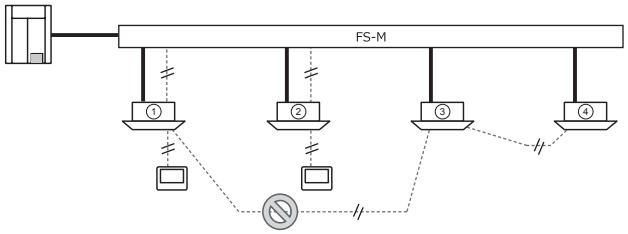
Indoor unit	①	②	③	④
[0014]	1	2	1	2
[00FE]	1	1	1	1
[00FD]	0	0	0	0
[0105]	1	2	3	4
[0106]	0	0	0	0

In case of connecting one group operation of indoor unit to mltiple port and combining branches of multi port type FS unit.

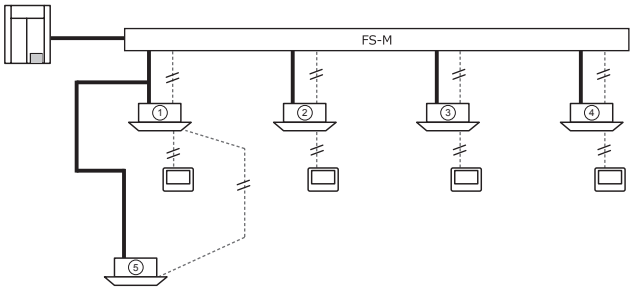


Indoor unit	①	②	③
[0014]	1	2	2
[00FE]	1	1	1
[00FD]	0	0	0
[0105]	1	3	4
[0106]	1	0	0

Incorrect connection

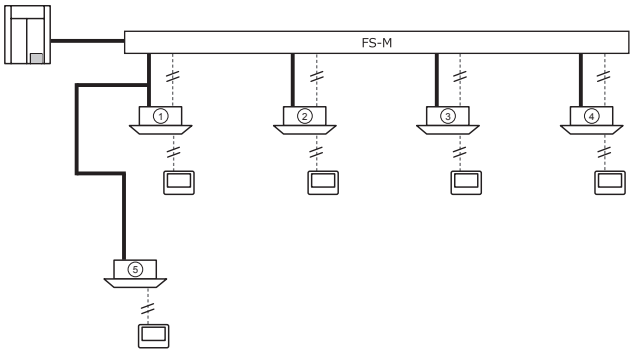


In case of connecting one group operation of indoor unit to one port of multi port type FS unit.



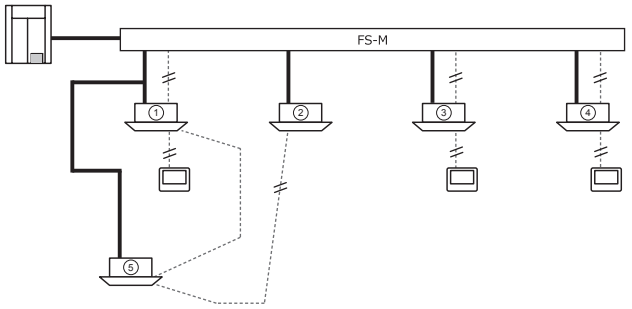
Indoor unit	①	②	③	④	⑤
[0014]	1	0	0	0	2
[00FE]	1	1	1	1	1
[00FD]	0	0	0	0	0
[0105]	1	2	3	4	5
[0106]	0	0	0	0	0

In case of connecting two indoor units to one port of multi port type FS unit.



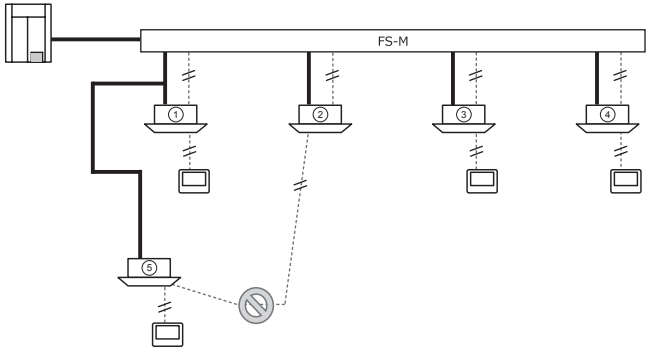
Indoor unit	①	②	③	④	⑤
[0014]	0	0	0	0	0
[00FE]	1	1	1	1	1
[00FD]	0	0	0	0	0
[0105]	1	2	3	4	1
[0106]	0	0	0	0	0

In case of connecting one group operation of indoor units to one port and multiple ports of multi port type FS unit.

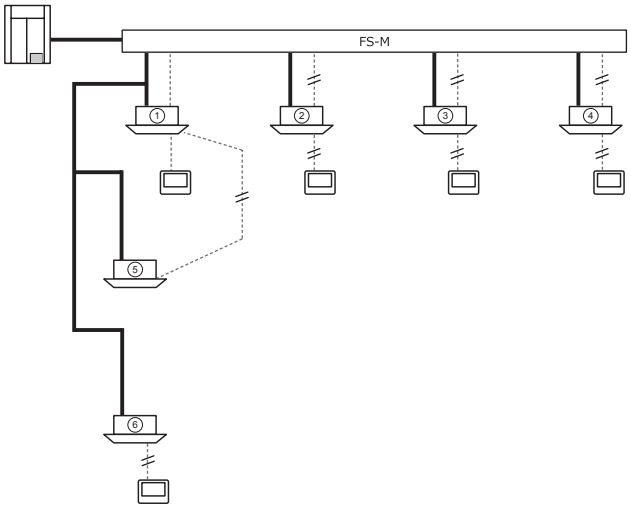


Indoor unit	①	②	③	④	⑤
[0014]	1	2	0	0	2
[00FE]	1	1	1	1	1
[00FD]	0	0	0	0	0
[0105]	1	2	3	4	1
[0106]	0	0	0	0	0

Incorrect connection

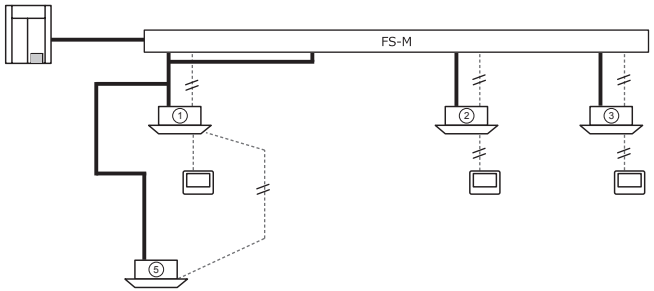


In case of connecting one group operation of indoor unit and one indoor unit to one port of multi port type FS unit.



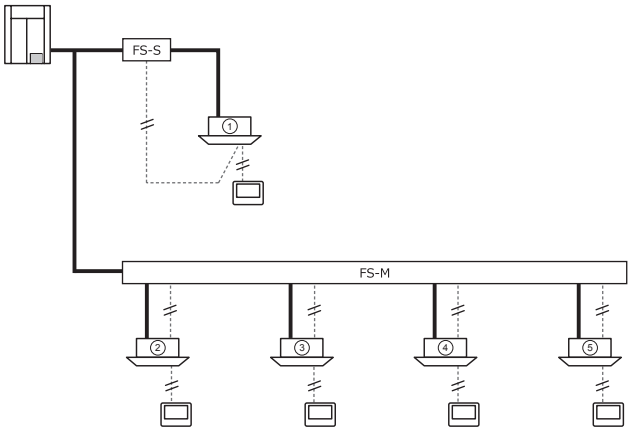
Indoor unit	①	②	③	④	⑤	⑥
[0014]	1	0	0	0	2	0
[00FE]	1	1	1	1	1	1
[00FD]	0	0	0	0	0	0
[0105]	1	2	3	4	1	1
[0106]	0	0	0	0	0	0

In case of connecting one group operation of indoor unit to combining branches of multi port type FS unit.



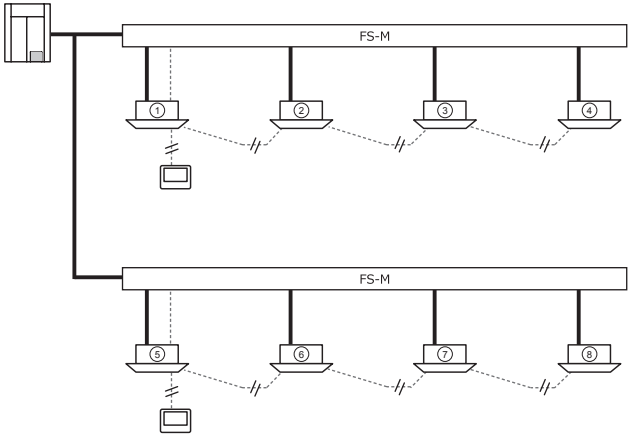
Indoor unit	①	②	③	④
[0014]	1	0	0	2
[00FE]	1	1	1	1
[00FD]	0	0	0	0
[0105]	1	3	4	1
[0106]	1	0	0	1

In case of connecting one indoor unit to single port type FS unit, and connecting one indoor unit to one port of multiple port type FS unit.



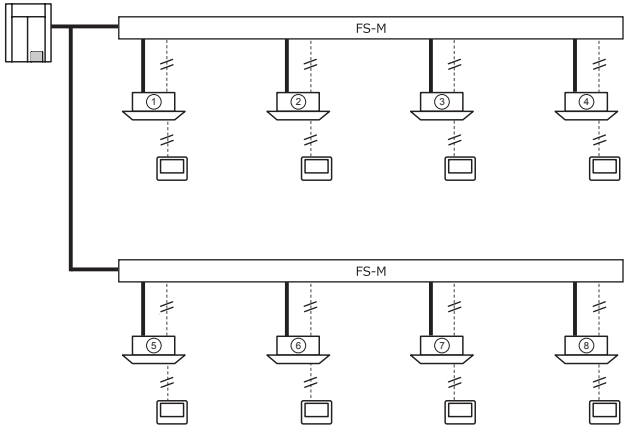
Indoor unit	①	②	③	④	⑤
[0014]	0	0	0	0	0
[00FE]	1	2	2	2	2
[00FD]	0	0	0	0	0
[0105]	1	1	2	3	4
[0106]	0	0	0	0	0

In case of connecting one group operation of indoor units to mltiple port of multi port type FS unit, and there are two multi port type FS units.



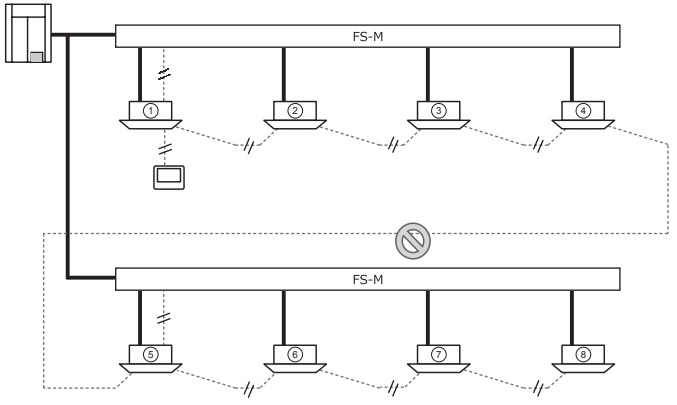
Indoor unit	①	②	③	④	⑤	⑥	⑦	⑧
[0014]	1	2	2	2	1	2	2	2
[00FE]	1	1	1	1	2	2	2	2
[00FD]	0	0	0	0	0	0	0	0
[0105]	1	2	3	4	1	2	3	4
[0106]	0	0	0	0	0	0	0	0

In case of connecting one indoor unit to one port of multi port type FS unit, and there are two multi port type FS units.



Indoor unit	①	②	③	④	⑤	⑥	⑦	⑧
[0014]	0	0	0	0	0	0	0	0
[00FE]	1	1	1	1	2	2	2	2
[00FD]	0	0	0	0	0	0	0	0
[0105]	1	2	3	4	1	2	3	4
[0106]	0	0	0	0	0	0	0	0

Incorrect connection



10 Applicable control settings

When connecting an optional P.C. Board (sold separately) for outdoor units, it is necessary to change the settings of the outdoor unit.
All are set to [Standard (factory setting)] at the time of shipment, so change the settings of the outdoor unit as necessary.
The settings can be changed by operating the switches on the interface board.
In the TU2C-LINK communication system, it can also be done by operating the wired remote control.

◆ Applicable control settings (Outdoor unit Code (DN) number settings)

(settings at the site)

Basic procedure
Be sure to stop the air conditioner before making settings.
(Change the setup while the air conditioner is not working.)

⚠ CAUTION

Set only the Code (DN) number shown in the following table: Do NOT set any other Code (DN) number.
If a Code (DN) number not listed is set, it may not be possible to operate the air conditioner or other trouble with the product may result.

When switching settings from the interface P.C. Board of the outdoor unit

1 **Set the rotary switch of the interface P.C. Board on the outdoor unit to SW01 = [9], SW02 = [1] and SW03 = [1].**

2 **The 7-segment display shows “d n.S E t”.**

3 **When SW04 is pushed, the 7-segment display switches to “d n.0 0 1” and the outdoor unit Code (DN) number [001] is displayed.**

4 **Change outdoor unit Code (DN) number [✻✻✻✻] with SW05 or SW06.**
Push SW05 to advance the code. Push and hold SW05 to advance in 5 steps.
Push SW06 to return the code. Push and hold SW05 to return in 5 steps.

5 **When SW04 is pushed, the 7-segment display blinks “d.* * * *” and the setting data [✻✻✻✻] being set is displayed.**

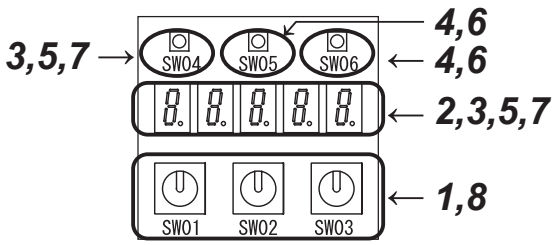
6 **Change setting data [✻✻✻✻] with SW05 or SW06.**
Push SW05 to advance the data. Push SW06 to return the setting data.

7 **Push and hold SW04 for more than 2 seconds.**
When the flashing stops and remain lit on the display, the setting is complete.
(To return to the item code setting after completing the setting, or to return to the item code setting without setting, push SW04 once.)

8 **Set the rotary switch on the interface P.C. Board of the outdoor unit back to SW01 = [1], SW02 = [1], SW03 = [1].**

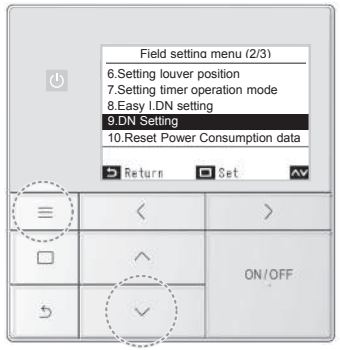
9 **Reset the power of the outdoor unit (power off for one minute or more).**

Interface P.C. Board of header unit



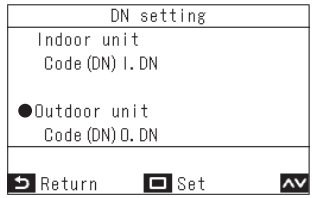
When switching from the wired remote control

Basic procedure
Be sure to stop the air conditioner before making settings.
(Change the setup while the air conditioner is not working.)



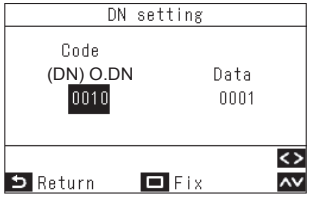
1 **Push [Menu] to open the “Menu”.**

2 **Push and hold [Menu] and [ ] at the same time to open “Field setting menu”.**
→ Push and hold 4 seconds.



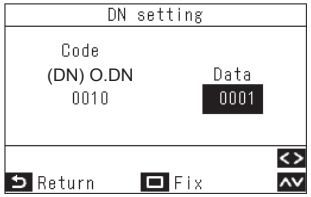
3 **In the “Field setting menu” screen, push [ ] and [ ] to select “DN setting”, and then push [Set/Fix].**

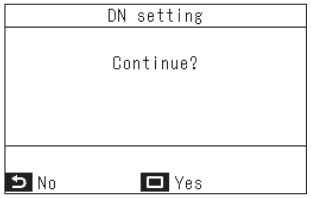
4 **Push [ ] and [ ] to select “Outdoor unit”, and the push [Set/Fix].**
- The fan of the selected outdoor unit runs. The outdoor unit can be confirmed for which to change settings.



5 **Push [ ] to black highlight the code (DN), and then push [ ] and [ ] to set the code number to [✻✻✻✻].**

6 **Push [ ] to black highlight the code (DN), and then push [ ] and [ ] to set the data to [✻✻✻✻].**





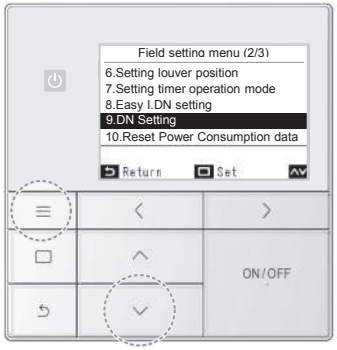
7 **After finishing setting the data of the code (DN) number, push [Set/Fix].**
→ "Continue?" is displayed.

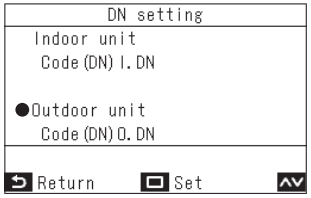
8 **To set the data of other codes (DN) number, push [Set/Fix].**
To not do other settings, push [Return].
→ The changes are fixed, and the "Field setting menu" screen returns.
→ "⧖" appears while data is changing.

- **To change settings of another outdoor unit, repeat from Procedure *1*.**

◆ Applicable control settings (Indoor unit Code (DN) number settings)

Basic procedure
Be sure to stop the air conditioner before making settings.
(Change the setting while the air conditioner is not working.)





1 **Push [Menu] to open the "Menu".**

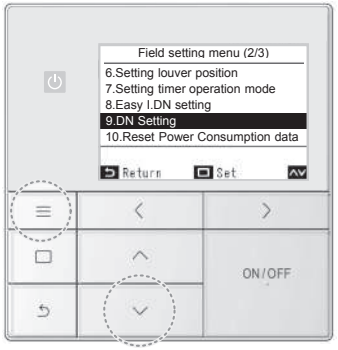
2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu".**
→ Push and hold 4 seconds.

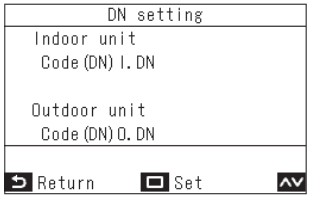
3 **In the "Field setting menu" screen, push [ ] and [ ] to select "DN setting", and then push [Set/Fix].**

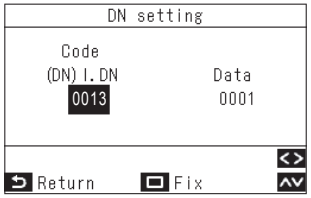
4 **Push [ ] and [ ] to select "Indoor unit", and the push [Set/Fix].**

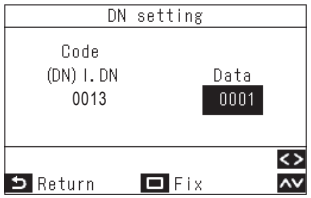
◆ Applicable control settings (Indoor unit Code (DN) number settings)

Basic procedure
Be sure to stop the air conditioner before making settings.
(Change the setting while the air conditioner is not working.)









1 **Push [Menu] to open the "Menu".**

2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu".**
→ Push and hold 4 seconds.

3 **In the "Field setting menu" screen, push [ ] and [ ] to select "DN setting", and then push [Set/Fix].**

4 **Push [ ] and [ ] to select "Indoor unit", and the push [Set/Fix].**
→ "Indoor unit" was selected, the fans and louvers of the indoor units operate.

When doing group connections:
→ The fans and louvers of the selected indoor units operate.

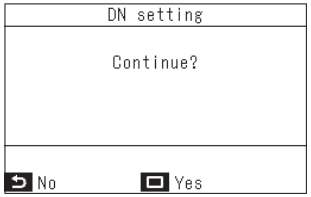
5 **Push [ ] to black highlight the code (DN), and then pushh [ ] and [ ] to set the code number to [****].**

6 **Push [ ] to black highlight the data, and then push [ ] and [ ] to set the data.**

7 **After finishing setting the data of the code (DN), push [Set/Fix].**
→ "Continue?" is displayed.

8 **To set the data of other codes (DN), push [Set/Fix].**
To not do other settings, push [Return].
→ The changes are fixed, and the "Field setting menu" screen returns.
→ "⧖" appears while data is changing.

When doing group connections:
→ Push [Return] to open the unit selection screen. In the unit selection screen, push [Return] to briefly display "⧖", and then return to the "Field setting menu" screen.



9 **To change settings of another indoor unit, repeat from Procedure *1*.**

■ Communication type *SHRM-u can not be combined with TCC-LINK models.

The Communication type setting of individual indoor units can be changed.

Follow to the basic opreration procedure
(***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6*** → ***7***).
- Specify **[00FC]** for the Code No. in Procedure ***4***.
- Select the Set data **[0003]** (TU2C-LINK) in Procedure ***5***.

Setting Data	0000 : TCC-LINK (Factory default) 0003 : TU2C-LINK

■ Terminating resistor setting for Indoor unit

The terminating resistor setting of individual indoor units can be changed.

Follow to the basic opreration procedure
(***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6*** → ***7***).
- Specify **[01FC]** for the Code No. in Procedure ***4***.
- Select the following data for the Set data in Procedure ***5***.

Setting Data	0000 : OFF (Factory default) 0001 : ON (Terminating resistor)

■ Cooling only Indoor unit setting

The Cooling only setting of individual indoor units can be changed.
When setting the specific indoor unit to Cooling Only unit without connecting to the flow selector unit, setup to the indoor unit to become the Cooling Only unit is necessary. Perform setup in the following procedure.
Setup to the indoor unit is performed by handling the wired remote controller.
Even if a wired remote controller is not used, attach a wired remote controller for setup.
Change the setup with the wired remote controller before using the air conditioner with a wireless remote controller.

Follow to the basic opreration procedure
(***1*** → ***2*** → ***3*** → ***4*** → ***5*** → ***6*** → ***7***).
- Specify **[000F]** for the Code No. in Procedure ***4***.
- Select the following data for the Set data in Procedure ***5***.

Setting Data	0000 : Heat pump (Factory default) 0001 : Cooling only

11 Test run

■ Before test run

Confirm that the valve of the refrigerate pipe of the outdoor unit is OPEN.
Before turning on the power, confirm that the resistance between the terminal block of power supply and the earth is more than 2 MΩ using a 500 V megohmmeter.
Do not run the unit if it is less than 2 MΩ)

⚠ CAUTION

- Turn on the power and turn on the case heater of the compressor.
  To save the compressor when it is activated, leave the power on for more than 12 hours.

■ Methods of test run

◆ When connecting an Flow Selector unit perform the following detailed inspection mode.

The detailed inspection mode is performed on the interface board of the outdoor unit.
Detailed inspection mode is completed in about 40 minutes in general and about 90 minutes at maximum.

<Detailed inspection mode start operation>

1 **Set the rotary switch on the interface board of the outdoor unit to SW01 = [2], SW02 = [15], SW03 = [16].**

7-segment display	
[A] [U1]	[B] [ ]

2 **Push SW04 for at least 2 seconds.**

7-segment display	
[A] [FS]	[B] [CH]

If the detailed inspection mode successfully completes, the following will be displayed.

7-segment display	
[A] [FS]	[B] [- -]

If there is an incorrect electrical wiring, incorrect piping connection, incorrect indication, etc., the following will be displayed.
If there are multiple indoor units with errors, Push SW06 to change the address display of the indoor unit. (If there is only one indoor unit with an error, the display remains the same.)

7-segment display	
[A] [FS]	[B] [Err] ⇕ [ ] The indication changes every 0.5 second. ↓ Address of the error indoor unit

If [Err] is indicated on 7-segment display, execute a cooling/heating test run for each indoor unit and check cool/hot air is blowing. Also, check the piping connection, wiring connections, and settings again.
If there is no problem after checking again, the system is normal.
When you modify piping connections, wiring connections, or settings, execute detailed inspection mode again.
Please contact a qualified service person if there is any trouble during test run.
[Err] on the 7-segment display disappears when the system power is reset.
*[Err] may be indicated even if there is no problem.
- When the temperature difference is large between in each indoor unit.
- When the FS unit is connected to the main pipe from the outdoor unit.
- A sound may be heard from the piping, Flow Selector unit during the test run, but this is not a malfunction.

◆ When executing a test run using a remote control

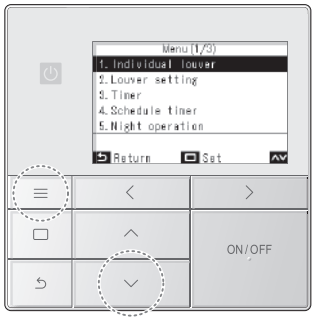
Operate the system normally to check the running condition using the wired remote control. Follow the instructions in the supplied Owner's Manual when operating the unit.
If you use a wireless remote control for operations, follow the instructions in the Installation Manual supplied with the indoor unit.
To execute a test run forcibly under the condition that the thermostat automatically turns the unit off due to the indoor temperature, follow the procedure below.
The forcible test run will automatically stop after 60 minutes to prevent continuous forcible running and return to normal running.

⚠ CAUTION

Do not use forcible running except for a test run as it overloads the unit.

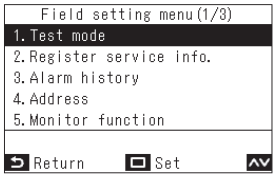
Wired remote control

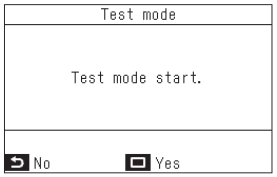
Be sure to stop the air conditioner before making settings.
(Change the setup while the air conditioner is not working.)



1 **Push [Menu] to open the "Menu".**

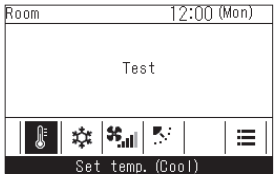
2 **Push and hold [Menu] and [ ] at the same time to open "Field setting menu".**
→ Push and hold 4 seconds.



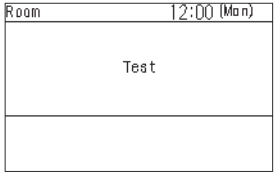


3 **In the "Field setting menu" screen, push [ ] and [ ] to select "Test mode", and then push [Set/Fix].**
→ Test mode is set, and returns to the "Field setting menu" screen. Push the [Return] button 2 times, to open screen (2).

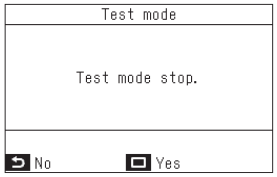
(1)



(2)



(3)



4 **Push [ON/OFF ON/OFF].**
→ Operation starts, and in test mode screen (1) opens. (While stopped, it is screen (2))
→ Test mode is done while the operating mode is set to "Cool" or "Heat".
→ The temperature cannot be set in test mode.
→ Check codes are displayed in the normal way.

5 **After completing test mode, in the "Field setting menu" screen, push [ ] and [ ] to select "Test mode", and then push [Set/Fix].**
→ Screen (3) appears.
→ Push [Set/Fix] to end test mode and do normal operation.

NOTE

Test mode ends 60 minutes after test mode was started, and the main screen returns.

◆ When executing a test run using the interface P.C. Board on the outdoor unit

You can execute a test run by operating switches on the interface P.C. Board of the header outdoor unit. "Individual trial", which tests each indoor unit separately, and "collective trial", which tests all the indoor units connected, are available.

<Individual test operation>

▼ Starting operation

1 **Set the running mode to "COOL" or "HEAT" on the remote control of the indoor unit to be tested.**
(The unit will run in the current mode unless you set the mode otherwise.)

7-segment display	
[A] [U1]	[B] [ ]

2 **Set the rotary switches on the interface P.C. Board of the header outdoor unit: SW01 to [16], SW02 and SW03 to the address of the indoor unit to be tested.**

SW 01	SW 02	SW 03	Indoor unit address	
16	1 to 16	1	1 to 16	Set number of SW02
16	1 to 16	2	17 to 32	Set number of SW02 + 16
16	1 to 16	3	33 to 48	Set number of SW02 + 32
16	1 to 16	4	49 to 64	Set number of SW02 + 48
16	1 to 16	5	65 to 80	Set number of SW02 + 64
16	1 to 16	6	81 to 96	Set number of SW02 + 80
16	1 to 16	7	97 to 112	Set number of SW02 + 96
16	1 to 16	8	113 to 128	Set number of SW02 + 112

7-segment display	
[A] [ ] ↓ Address display of the corresponding indoor unit	[B] [ ]

3 **Push and hold SW04 for more than 10 seconds.**

7-segment display	
[A] [ ] ↓ Address display of the corresponding indoor unit	[B] [ ] ↓ [FF] is displayed for 5 seconds.

NOTE

- The running mode follows the mode setting on the remote control of the target indoor unit.
- You cannot change the temperature setting during the test run.
- Errors are detected as usual.
- The unit does not perform test run for 3 minutes after turning the power on or stopping running.

▼ Finishing operation

1 **Set the rotary switches on the interface P.C. Board of the header unit back: SW01 to [1], SW02 to [1] and SW03 to [1].**

7-segment display	
[A] [U1]	[B] [ ]

<Collective trial>

▼ Start operation

1 **Set the rotary switches on the interface P.C. Board of the header outdoor unit as below.**
When in “COOL” mode: SW01 = [2], SW02 = [5], SW03 = [1].
When in “HEAT” mode: SW01 = [2], SW02 = [6], SW03 = [1].
When in “FAN” mode: SW01 = [2], SW02 = [9], SW03 = [1].

7-segment display	
[A] [C] [H] [F]	[B] [ ] [ ] [ ]

2 **Push and hold SW04 for more than 2 seconds.**

NOTE

- You cannot change the temperature setting during the test run.
- Errors are detected as usual.
- The unit does not perform test run for 3 minutes after turning the power on or stopping running.

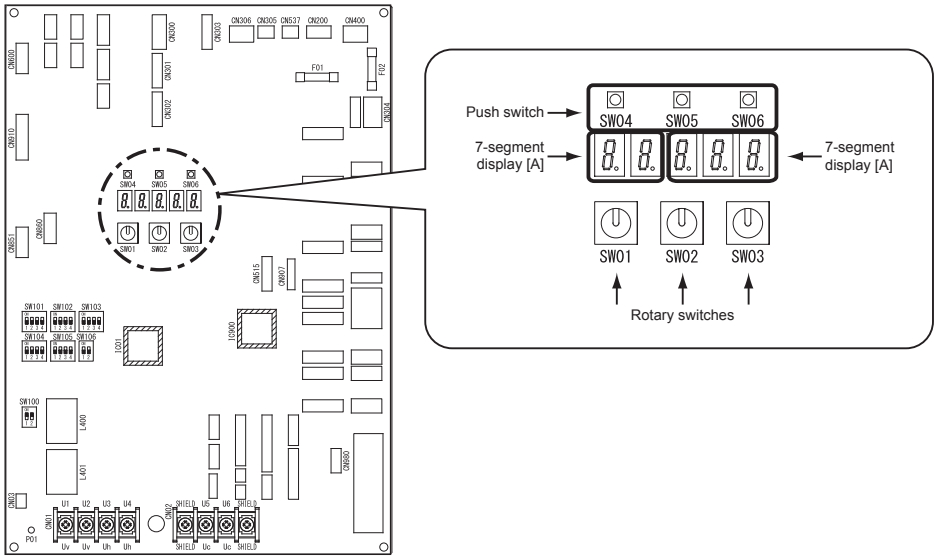
7-segment display	
[A] [C] [H] [F]	[B] [ ] [ ] [ ]

▼ Start operation

1 **Set the rotary switches on the interface P.C. Board of the header unit back:**
SW01 to [1], SW02 to [1] and SW03 to [1].

7-segment display	
[A] [U1]	[B] [ ]

Interface P.C. Board



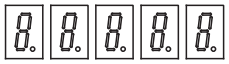
NOTE

- The test run is a forced run that ignores the set temperature. Be sure to stop the test run after work, paying attention to the room temperature.
- After 60 minutes, the test run will be completed to protect the equipment, and the normal operation will be started according to the set temperature. However, note that if the remote control less setting is set, some indoor models will not complete the test run even after 60 minutes have passed.

12 Troubleshooting

In addition to the Check code on the remote control of an indoor unit, you can diagnose failure type of an outdoor unit by checking the 7-segment display on the interface P.C. Board.
Use the function for various checks.

7-Segment display and check code

Rotary switch setting value			Indication	7-segment LED	
SW01	SW02	SW03			
1	1	1	Outdoor unit check code	Display contents	[U. ∗ .E r r] ⇔ [○○○.△△] Display alternately every 2 seconds ∗ : Outdoor Unit No. (1~3) ○○○ : Check code △△ : Sub code

* If a check code has an auxiliary code, the display indicates the check code for three seconds and the auxiliary code for one second alternately.

Check code (indicated on the 7-segment display on the outdoor unit)
Indicated when SW01 = [1], SW02 = [1], and SW03 = [1].

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
	Auxiliary code	
E06	Number of indoor units which received normally	• Decrease of number of indoor units • No indoor unit with a terminating resistor set
E07	—	Indoor / outdoor communication circuit trouble
E08	Duplicated indoor addresses	Duplication of indoor addresses
E12	01: Communication between indoor and outdoor units 02: Communication between outdoor units	Automatic addressing start trouble
E15	—	No indoor unit during automatic addressing
E16	00: Capacity over 01: Number of connected units	Capacity over / number of connected indoor units
E19	00: Header is not detected 02: 2 or more header units	Number of header outdoor unit trouble
E20	01: Other line outdoor connected 02: Other line indoor connected	Other lines connected during automatic addressing
E23	—	Sending error between outdoor units communication
E25	—	Duplicated follower outdoor address set up
E26	Number of outdoor units which received normally	Decrease of connected outdoor units
E28	Detected outdoor	Follower outdoor unit trouble
E31	Inverter quantity information(*1)	Inverter communication trouble
E31	80	Communication trouble between MCU and sub MCU
F04	—	TD1 sensor trouble
F05	—	TD2 sensor trouble
F06	01: TE1 sensor 02: TE2 sensor 03: TE3 sensor	TE1, TE2 or TE3 sensor trouble
F07	01: TL1 sensor 02: TL2 sensor 03: TL3 sensor	TL1, TL2 or TL3 sensor trouble
F08	—	TO sensor trouble
F09	01: TG1 sensor 02: TG2 sensor 03: TG3 sensor	TG1, TG2 or TG3 sensor trouble
F12	01: TS1 sensor 02: TS2 sensor 03: TS3 sensor	TS1, TS2 or TS3 sensor trouble
F13	1∗: Compressor 1 side 2∗: Compressor 2 side	TH (Heat sink) sensor trouble
F15	—	Outdoor Temperature sensor miswiring (TE1, TL1)
F16	—	Outdoor pressure sensor miswiring (Pd, Ps)
F23	—	Ps sensor trouble
F24	—	Pd sensor trouble
F31	—	Outdoor EEPROM trouble
H01	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor breaking down
H02	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor trouble (Locked)
H03	1∗: Compressor 1 side 2∗: Compressor 2 side	Current detection circuit system trouble
H05	—	TD1 sensor miswiring
H06	—	Low pressure protective operation
H07	—	Oil level down detection
H08	01: TK1 sensor trouble 02: TK2 sensor trouble	Temperature sensor trouble for oil level detection
H15	—	TD2 sensor miswiring
H16	01: TK1 oil circuit trouble 02: TK2 oil circuit trouble	Oil level detector circuit system trouble
H17	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor trouble (step out)
H28	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor motor winding trouble
L02	Detected indoor unit address	• Model mismatch of indoor and outdoor unit • Equipment incompatible with TU2C-LINK
L04	—	Outdoor system address duplication
L06	Number of prior indoor units	Duplication of indoor units with priority
L08	—	Indoor unit group/address unset
L10	—	Outdoor unit capacity unset.
L11	Detected indoor unit address	Flow Selector unit installation trouble
L13	Detected indoor unit address	Flow Selector unit miswiring and misconfiguration trouble
L17	—	Inconsistent models of outdoor units
L24	02: Indoor units operation mode priority setting	Flow Selector unit(s) setting trouble
L28	—	Outdoor units mismatch
L29	00: When there are many inverter P.C. Board ∗∗: Inverter number information(*1)	Inverter quantity trouble
L30	Detected indoor unit address	External interlock of indoor unit
L31	—	Other compressor troubles
P03	—	Discharge temperature TD1 trouble

Check code		Check code name
Indication on 7-segment display on the outdoor unit		
	Auxiliary code	
P04	1∗: Compressor 1 side 2∗: Compressor 2 side	High-pressure SW system operation
P05	1∗: Compressor 1 side 2∗: Compressor 2 side	Inverter DC voltage (Vdc) trouble (compressor) MG-CTT trouble
	00: Power outage detection 01: Open phase detection 02: Miswiring detection	Power outage detection Open phase detection Miswiring detection
P07	1∗: Compressor 1 side 2∗: Compressor 2 side 00: Compressor 1 side or Compressor 2 side	Heat sink overheating trouble
	04: Heat sink	Heat sink condensation trouble
P10	Detected indoor unit address	Indoor over flow error
P11	—	Outdoor heat exchanger freezing trouble
P13	01: PMV1, 2, 3 side (Follower outdoor unit) 02: PMV4 side (Follower outdoor unit) 03: PMV4 side 04: PMV1, 2, 3 side	Outdoor unit flow back trouble detected
P14	01: Outdoor unit valve is close	Another Refrigerant Cycle Protection
P15	01: TS condition 02: TD condition	Gas leak detection
P17	—	Discharge temperature TD2 trouble
P19	0#: 4-way valves 1#: 4-way valve 1 2#: 4-way valve 2 *Put in outdoor unit No. in [#] mark	4-way valve inverse trouble
P20	—	High-pressure protective operation
P22	1∗: Fan P.C. Board 1 2∗: Fan P.C. Board 2	Outdoor fan inverter trouble
P25	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor inverter P.C. Board trouble
P26	1∗: Compressor 1 side 2∗: Compressor 2 side	Compressor start up trouble
P29	11: Compressor 1 side 21: Compressor 2 side	Compressor position detecting circuit system trouble

A value from 0 to F is displayed in "∗".

***1 Inverter quantity information**

01: Compressor 1 trouble
02: Compressor 2 trouble
03: Compressor 1 and 2 trouble
08: Fan 1 trouble
09: Compressor 1, Fan 1 trouble
0A: Compressor 2, Fan 1 trouble
0B: Compressor 1 and 2, Fan 1 trouble
10: Fan 2 trouble
11: Compressor 1, Fan 2 trouble
12: Compressor 2, Fan 2 trouble
13: Compressor 1 and 2, Fan 2 trouble
18: Fan 1 and 2 trouble
19: Compressor 1, Fan 1 and 2 trouble
1A: Compressor 2, Fan 1 and 2 trouble
1B: Compressor 1 and 2, Fan 1 and 2 trouble

13 Machine card and logbook

■ Machine card

After test run, fill the items on the machine card and paste the card on an accessible place on the product securely before delivery to the customer.

Describe the following items on the machine card:
Name, address and telephone number of the installer, his service department, the service department of the party concerned or at any addresses and telephone numbers of fire department, police, hospitals and burn centres;

■ Logbook

Update the log periodically after maintenance.

Describe the following items on the logbook:
1. Details of the maintenance and repair works;
2. Quantities, kind of (new, reused, recycled) refrigerant which have been charged on each occasion, the quantities of refrigerant which have been transferred from the system on each occasion;
3. If there is an analysis of a reused refrigerant, the results shall be kept in the logbook;
4. Source of the reused refrigerant;
5. Changes and replacements of components of the system;
6. Result of all periodic routine tests;
7. Significant periods of non-use.

14 Appendix

■ Regulation of harmonic currents

This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to Ssc (*1) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to Ssc (*1).

Furthermore, when similar equipment or other equipment which may cause harmonic current emissions are to be connected to the same interface point with this equipment, to reduce the risk of possible problems which may be caused from addition of those harmonic current emissions, it is recommended to make sure that the short-circuit power Ssc at the interface point is greater than the sum of the minimum Ssc required by all the equipment which will be connected to the interface point.

Ssc (*1)

Model	Ssc (kW)
MMY-MUP0801FT8(J)P-E	1050
MMY-MUP1001FT8(J)P-E	1309
MMY-MUP1201FT8(J)P-E	1573
MMY-MUP1401FT8(J)P-E	1791
MMY-MUP1601FT8(J)P-E	2369
MMY-MUP1801FT8(J)P-E	2528
MMY-MUP2001FT8(J)P-E	2208
MMY-MUP2201FT8(J)P-E	2984
MMY-MUP2401FT8(J)P-E	3136

WARNINGS ON REFRIGERANT LEAKAGE

Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

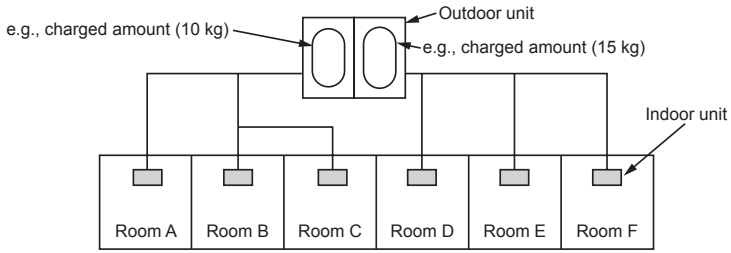
Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leq \text{Concentration limit (kg/m}^3\text{)}$$

Refrigerant Concentration Limit shall be in accordance with local regulations.

▼ NOTE 1
If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



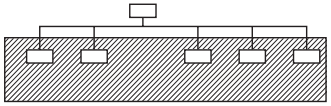
For the amount of charge in this example:
The possible amount of leaked refrigerant gas in rooms A, B and C is 10 kg.
The possible amount of leaked refrigerant gas in rooms D, E and F is 15 kg.

■ Important

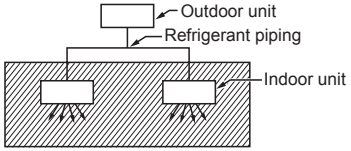
▼ NOTE 2

The standards for minimum room volume are as follows.

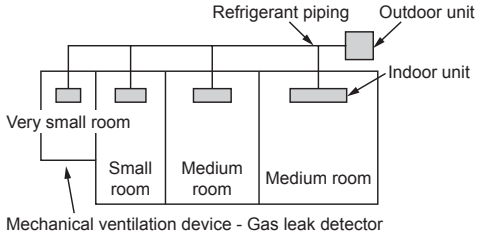
1) No partition (shaded portion)



2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).



3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object.
But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



CARRIER AIR CONDITIONING (THAILAND) CO., LTD.

144/9 MOO 5, BANGKADI INDUSTRIAL PARK, TIVANON ROAD, TAMBOL BANGKADI, AMPHUR MUANGPATHUMTHANI, PATHUMTHANI 12000, THAILAND

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