



شركة البدرى لأعمال التهوية والتبريد والتكييف والتدفئة

إحدى شركات مجموعة البدرى للتجارة والامتياز

BADRY HVAC Works Co.

Project Installation Work Plan:

ERC Refinery Project / Operator Shelters
PO-530000045 - 8 Split Daikin AC units
EX-Machinery EX /ATEX-Z2 Modification

Location:

ERC Operator Shelters
Mostorod, Cairo

Prepared for:

ERC / EPROM
Egyptian Refining Company
Division of HSEQ Quality
Mostorod, Cairo

BADRY Project No. 1798

Mar. 2020

BADRY
Group

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Appendix 1 – Health and Safety Plan

1.0 Introduction and Purpose

The Installation Work Plan defines the major Project work tasks and activities. It consists of a planned schedule for the Project's completion of key tasks and activities towards the achievement of Project milestones and deliverables.

Start and end dates are assigned for each task and associated milestone, and dependencies between tasks and milestones are reflected for all work streams. The plan also includes documentation of the Project deliverables including acceptance criteria.

This Installation Work Plan (herein after referred to as the "IWP") presents a portion of the part / phase of work for installation Air Conditioners (AC Units) of number Eight (8 AC) @ No of eight Operator Shelters of ERC Refinery Project as listed from Engineering / HSEQ Departments of Egyptian Refining Company (ERC / EPROM) in Mostorod Site.

BADRY HVAC as the subcontractor of P.O / Contract is required to submit the Installation Work Plan for ERC/EPROM; HSEQ Department review and acceptance that Plan (IWP).

This Installation Work Plan "IWP" is being submitted for only # 8 ATEX AC Units installations in order to expedite the installation work during spring of 2020.

The "IWP" is:

- A documented installations work analysis of primary tasks that are deemed necessary and appropriate to complete a scope of work within a subcontract
- Considered a supplement to the BADRY's Worker Protection Plan (WPP).

The work analysis process is accomplished by utilizing the following five functions and incorporating the appropriate WPP and Occupational Safety and Health (OSH) program elements included in the subcontract:

- Define the Scope of Work
- Analyze the Work TASKs
- Develop and Implement TASKs Controls
- Perform the Work within Established Controls
- Provide Feedback and Continuous Improvement.

The "IWP" includes a break-down of tasks and controls that are based on the scope of work and subcontractor management's determination of required primary tasks.

BADRY prepares that IWP, with considers, identifies and analyze the installation work tasks to be completed within the scope of work known at the time of award

BADRY completed, submitted IWP to ERC/EPROM for review and acceptance prior to start of work.



2.0 Site Description and History

The “Site”, for the purposes of this Installation Work Plan, is limited to the no. of eight Operator Shelters of ERC Refinery Project. One ATEX AC Unit will be installed to each one operator Shelter.

3.0 Objectives

The objective of the project is to install eight (8) new Daikin ATEX modified AC unit including coating at strategic locations of the Site limited to the no. of eight Operator Shelters of ERC Refinery Project.

ERC will notify BADRY the eight locations of Operator Shelters to follow.

- AC Unit # 01, will be placed beside Location # 01 / Operator Shelter # 01
- AC Unit # 02, will be placed beside Location # 02 / Operator Shelter # 02
- AC Unit # 03, will be placed beside Location # 03 / Operator Shelter # 03
- AC Unit # 04, will be placed beside Location # 04 / Operator Shelter # 04
- AC Unit # 05, will be placed beside Location # 05 / Operator Shelter # 05
- AC Unit # 06, will be placed beside Location # 06 / Operator Shelter # 06
- AC Unit # 07, will be placed beside Location # 07 / Operator Shelter # 07
- AC Unit # 08, will be placed beside Location # 08 / Operator Shelter # 08

ERC will deliver to BADRY each AC Unit (Including Indoor & Outdoor Units) beside or attached to its Location / Operator Shelter – ready for start installation.



4.0 Installation Work Tasks

Task 1: Preparation of the Installation

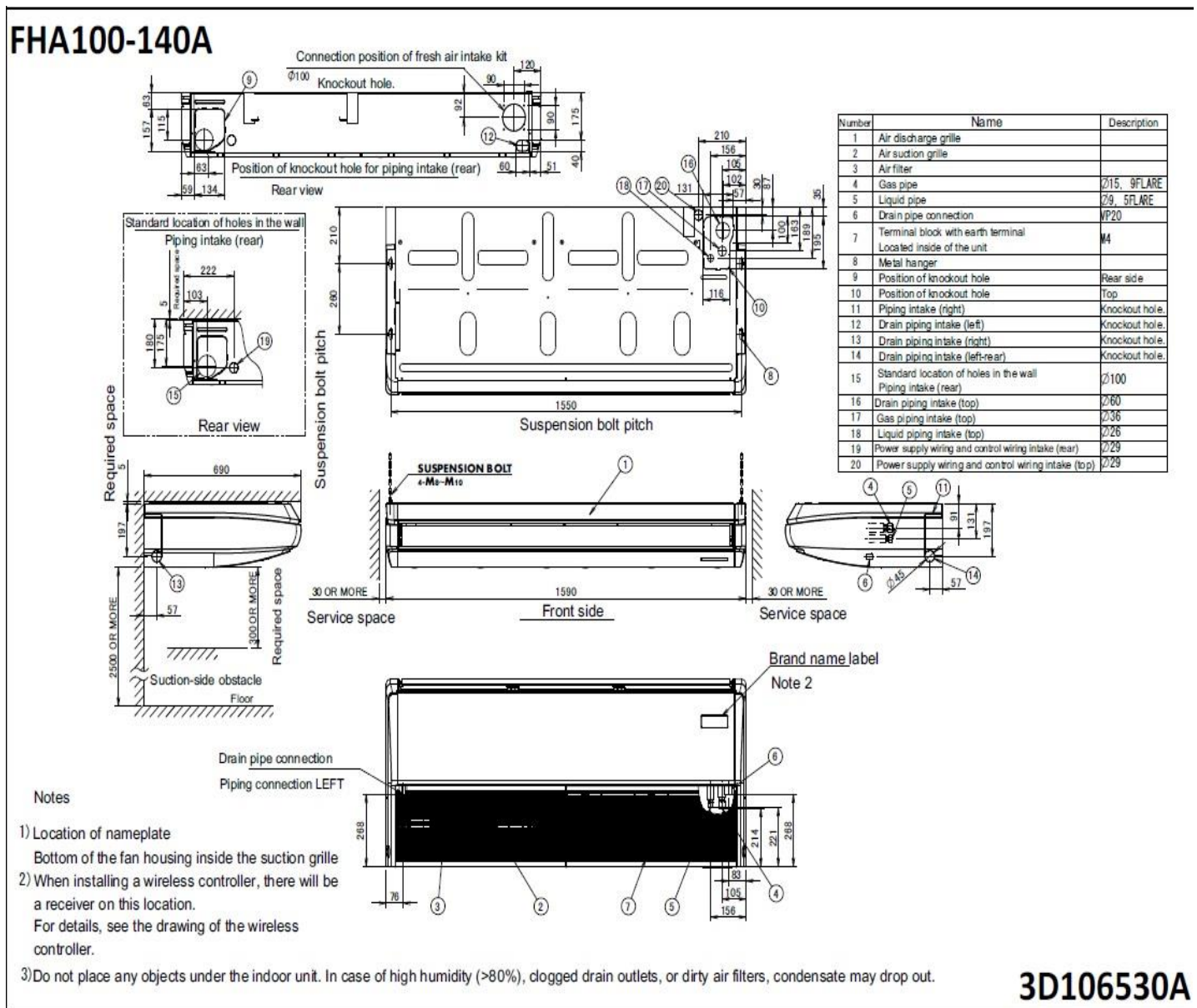
This task describes what we have to do before going on-site. It contains information about:

- A- Preparing the Installation Site
- B- Preparing the Refrigerant Piping
- C- Preparing the Electrical Wiring

A. Preparation of the Installation Site

A.1 Preparing the Installation of AC Indoor Unit

The Dimensional Drawings of the indoor unit as follows:



3D106530A

A.2 Preparing the Installation of AC Outdoor Unit

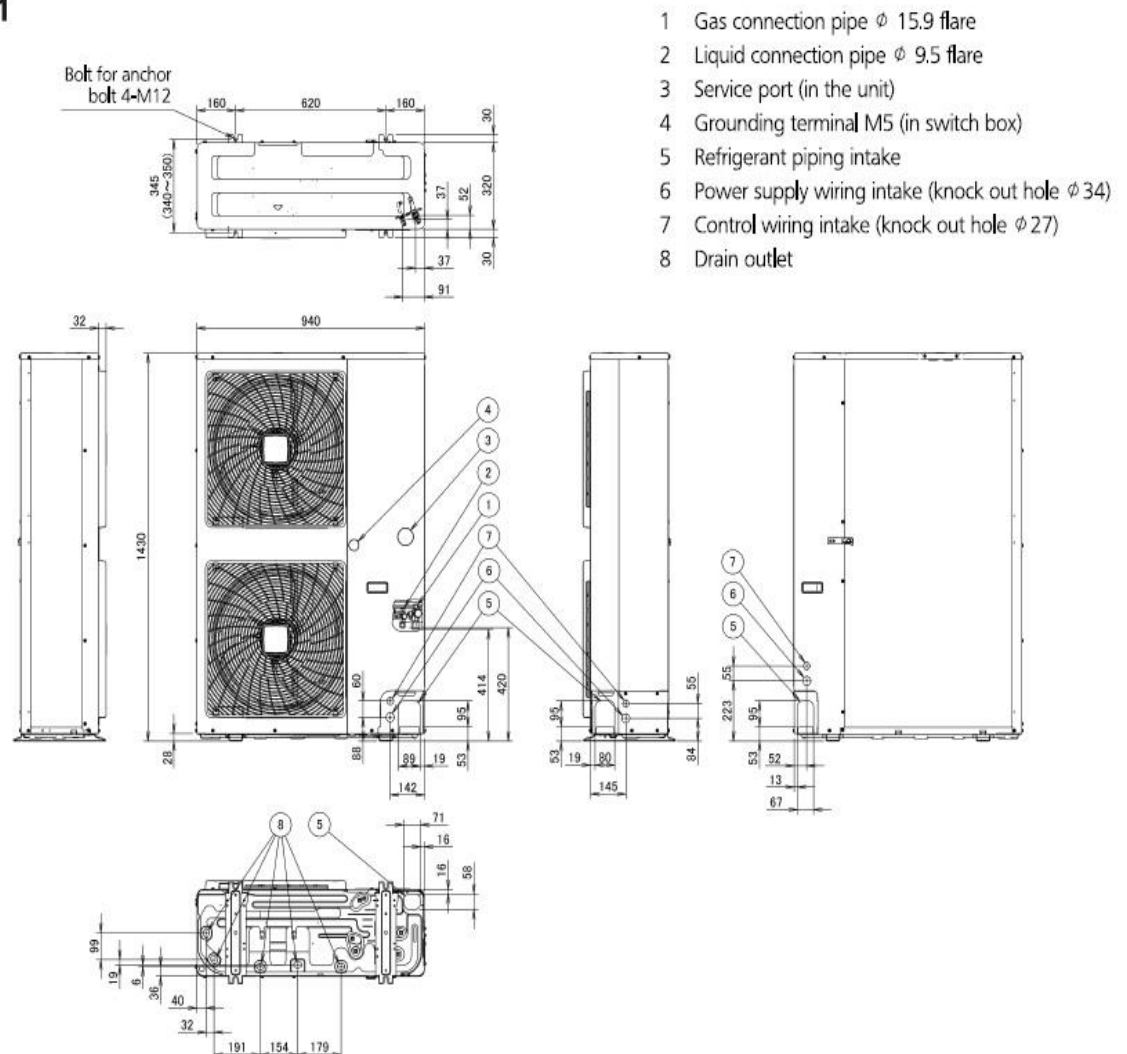
The outdoor unit is designed for outdoor installation only, and for ambient temperatures ranging:

Model	Cooling	Heating
RZQG	-15~50°C	-20~15.5°C

The following requirements to be checked and verified:

- i. Do NOT install the AC outdoor unit in places often used as work place.
- ii. Select a place where rain can be avoided as much as possible.
- iii. Take care that in the event of a water leak, water cannot cause any damage to the installation space and surroundings.
- iv. Choose a location where the hot/cold air discharged from the unit will NOT disturb anyone.
- v. Heat exchanger fins are sharp and injury is possible. Choose an installation location where there is no risk for injury.
- vi. Do NOT install the unit in Strong winds (≥ 18 km/h) blowing against the outdoor unit's air outlet causes short circuit (suction of discharge air)

RZQG100-140LY1



- 1 Gas connection pipe ϕ 15.9 flare
- 2 Liquid connection pipe ϕ 9.5 flare
- 3 Service port (in the unit)
- 4 Grounding terminal M5 (in switch box)
- 5 Refrigerant piping intake
- 6 Power supply wiring intake (knock out hole ϕ 34)
- 7 Control wiring intake (knock out hole ϕ 27)
- 8 Drain outlet

B. Preparation of the Refrigerant Piping

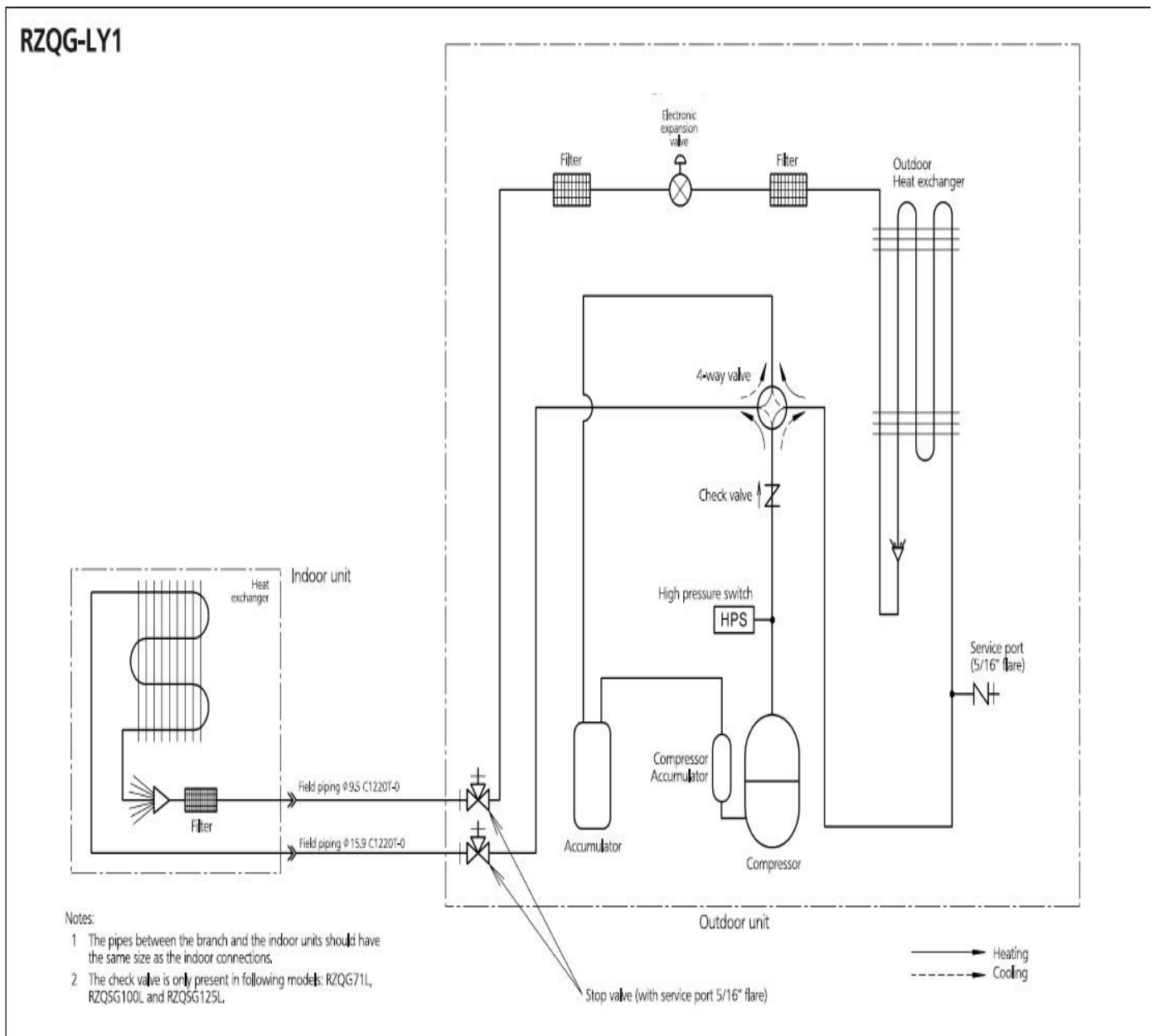
B.1 Preparing the Material of Refrigerant Piping

The following requirements to be checked and verified:

- Reusing piping is not allowed in our new AC Units installations
- The refrigerant piping material requirement as in following table:

Model	L1 liquid piping	L1 gas piping
RZQG-140	Ø9.5 mm	Ø15.9 mm
Temper Grade	Annealed (O)	Annealed (O)
Thickness (t)	0.8 mm	1.0 mm

- The Insulation of refrigerant pipes to be polyethylene foam insulation material with a heat resistance of 120°C and 20 mm thickness to.



C. Preparation of the Electrical Wiring

C.1 General Notes on Electrical Wiring

The following notes to be checked and verified:

- i. Make sure to install an earth leakage breaker of 3N, 380V, 25A.
- ii. Do not turn on the power supply (of the indoor unit) until all the installation work is completed.
- iii. Make sure to earth the air conditioner.
- iv. Do not connect the earth wiring to gas / water pipes, lightning or telephone earth wiring.
- v. Never connect the power supply wiring to the terminal block for remote controller wiring, or otherwise the entire system may be damaged.
- vi. Carry out installation and wiring of the remote controller according to the “installation manual” attached to the remote controller.

C.2 Specification For Field Wiring

For the wiring of outdoor units, refer to the installation manual attached to the outdoor units. Remote controller and transmission wiring are field supply. (Refer to Table 2)

Table 2

Component	Specification
Transmission wiring (NOTE 1.)	4-core cable 1.5 mm ² ~2.5 mm ² and applicable for 220~240 V H05RN-F (60245 IEC 57)
Remote controller wiring (NOTE 2.)	Vinyl cords with 0.75 to 1.25 mm ² sheath or cables (2-core wires) Maximum 500 m* H03VV-F (60227 IEC 52)

* This will be the total extended length in the system when doing group control.

Wiring specifications are shown on the condition that the wiring has a voltage drop of 2%.

NOTE

1. It shows the case when conduit piping are used. When the conduit piping is not used, use H07RN-F (60245 IEC 66).
2. Sheathed vinyl cord or cable (insulation thickness: 1mm or more)

C.3 Preparing the Electrical Wiring for AC Outdoor Unit

The following requirements to be checked and verified:

- vii. Check that N-Phase of power supply is founded and proper (Not missed nor wrong).
- viii. Earth the outdoor unit to specified power earth of grounding network
- ix. Connection to Earth Leakage C.B in DB Panel of Shelter
 - x. Always use Multicore Cables for power supplying.
 - xi. Secure electrical wiring with cable Ties.
- xii. Don't install a phase advancing capacitor as outdoor unit equipped with an inverter.

Task 2: Installation

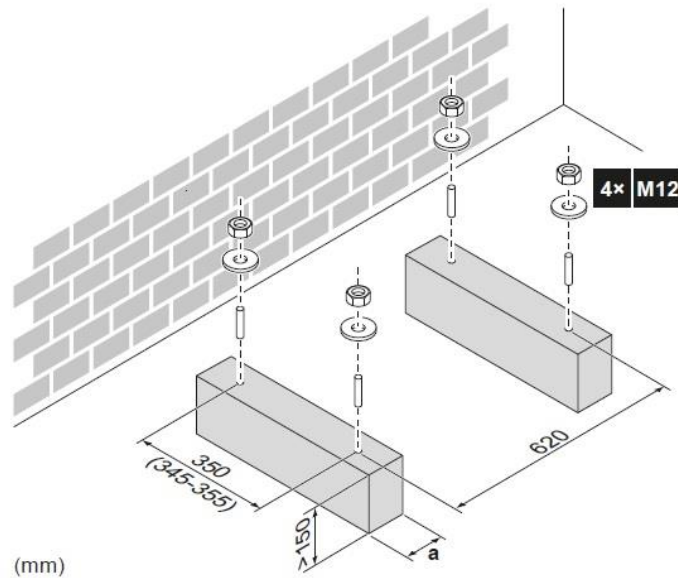
This task describes what we have to do on-site to install the system. It contains information about:

- **A- Mounting AC Units**
- **B- Erection of Piping Works**
- **C- Erection of Electrical Works**

A. Mounting of the AC Units

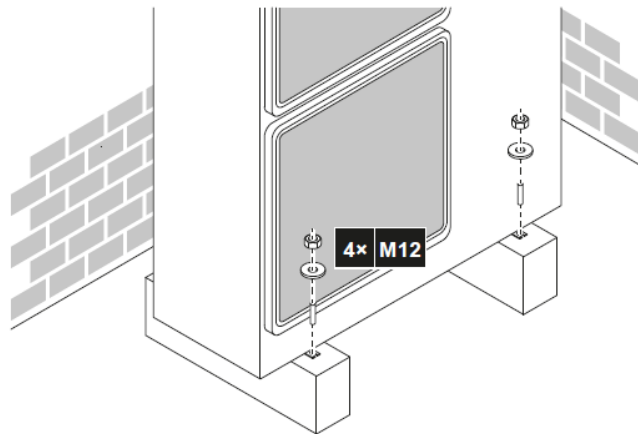
A.1 Providing the Installation Structure for Outdoor Unit

- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise.
- Fix the unit securely by means of foundation bolts in accordance with the foundation drawing.
- Prepare 4 sets of anchor bolts, nuts and washers (field supply) as follows:



a Make sure not to cover the drain holes.

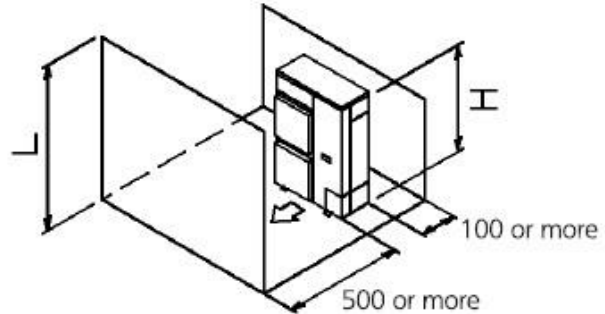
- Fix the outdoor unit to the foundation bolts using nuts with resin washers, If the coating on the fastening area is stripped off, the nuts rust easily.



A.2 Installation Within Obstacles for Outdoor Unit

● No obstacle above

- ① Stand-alone installation
 - No obstacle above

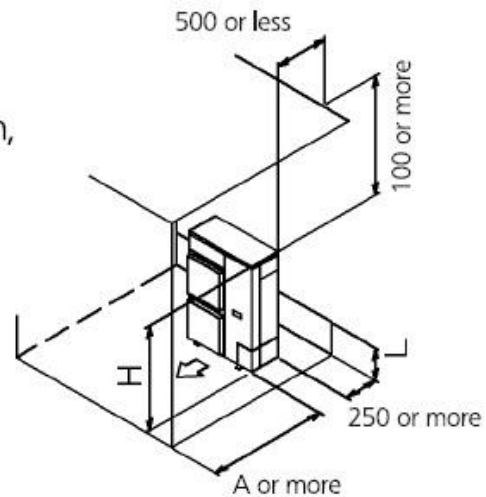


● Obstacle above, too

- ① Stand-alone installation (Note 2)
 - When there are obstacles on suction, discharge and top sides.

The relations between H, A and L are as follows.

	L	A
$L \leq H$	$L \leq 1/2 H$	750 or more
	$1/2 H < L \leq H$	1000 or more
$L > H$	Set the stand as : $L \leq H$ Refer to the column of $L \leq H$ for A	

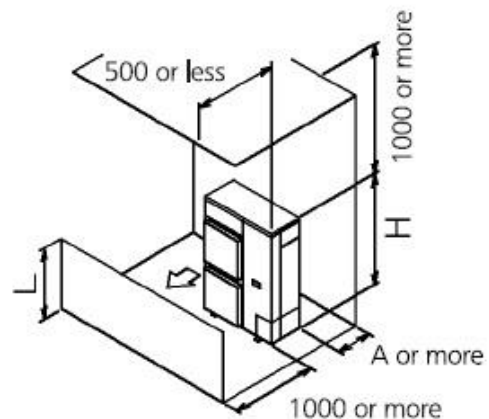


● Obstacle above, too

- ① Stand-alone installation (Note 2)
 - When there are obstacles on suction, discharge and top sides.

The relations between H, A and L are as follows.

	L	A
$L \leq H$	$L \leq 1/2 H$	100 or more
	$1/2 H < L \leq H$	200 or more
$L > H$	Set the stand as : $L \leq H$ Refer to the column of $L \leq H$ for A	



A.3 Installation for the Indoor Unit

- Select the installation location that meets the more suitable conditions
- Use hanging bolts for installation
- This indoor unit can be installed up to 4.3m of Ceiling Height for that 140 class
- Determine the locations of hanging bolts, piping outlet, drain piping outlet and electric wiring inlet. And make the hole.
- Make holes for hanging bolts, piping outlet, drain piping outlet, and electric wiring inlet.
- Remove the parts of the indoor unit (Suction Grille, Decoration Side-panel, and Hanger).
- Install the hanging bolts (M10) as in Fig. 10.
- Fix the hanger to the hanging bolt as in Fig. 10.

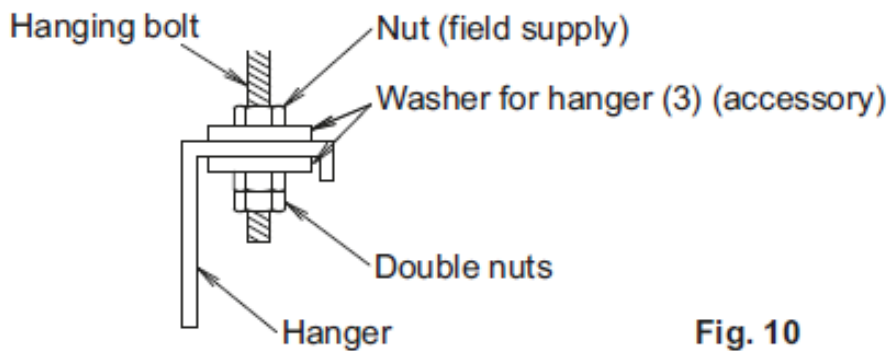


Fig. 10

- Lift up the indoor unit, slide from the front and put the hanger installing bolt (M8) into the securely for temporary hanging. (Refer to Fig. 11)
- Tighten the hanger fixing screws (M5) at 2 places, which were removed, as they were before. (Refer to Fig. 11). It is necessary to prevent misalignment of the indoor unit.
- Tighten the hanger installing bolts (M8) at 4 places properly. (Refer to Fig. 11)
- When hanging the indoor unit, make sure to use the level to have better drainage and install it horizontally. Also, if it is possible at the installation site, install so that the drain piping side is slightly lower. (Refer to Fig. 12)

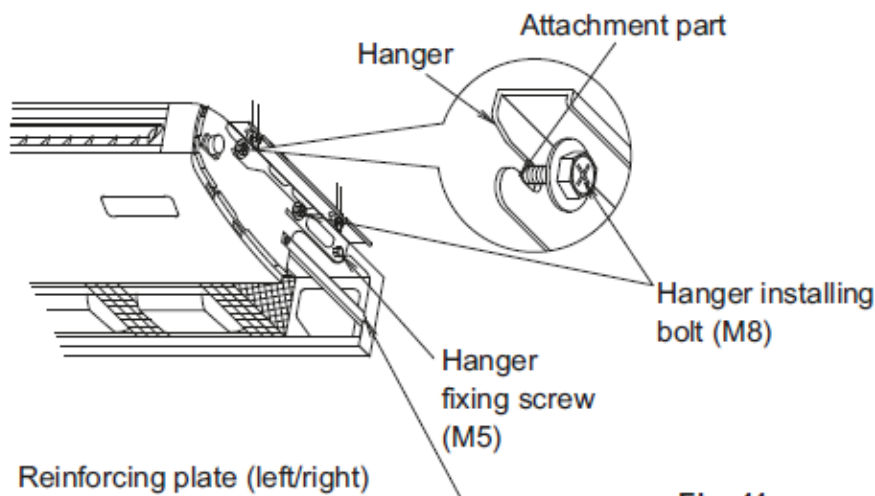


Fig. 11

When carrying the indoor unit,
do not hold the reinforcing plates.

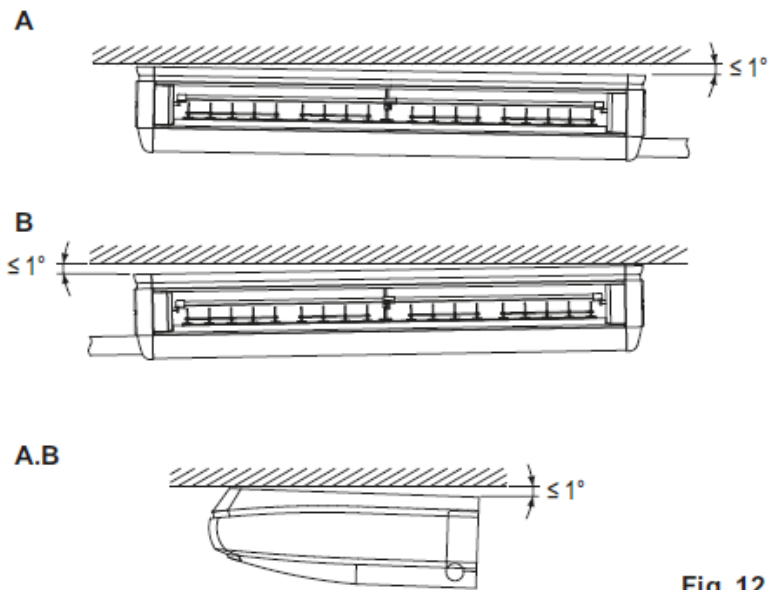


Fig. 12

- A.** When the drain piping is tilted to the right, or to the right and back. Place it level, or tilt it slightly to the right or the back. (Within 1°)
- B.** When the drain piping is tilted to the left, or to the left and back. Place it level, or tilt it slightly to the left or the back. (Within 1°)

A.4 Providing the Drainage (Drain Piping Work)

- Carry out drain piping so that drainage is ensured.
- Drain piping can be connected from the following directions: For right rear/right side, refer to Fig. 18, and for left rear/left side, refer to Fig. 20

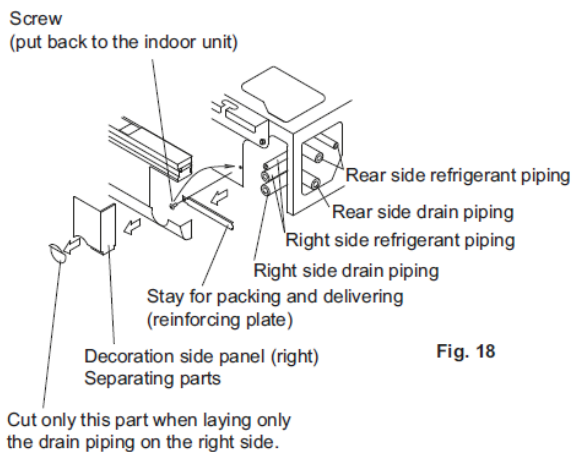


Fig. 18

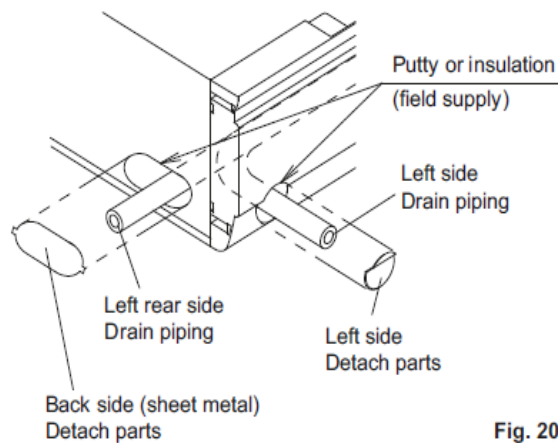


Fig. 20

- When conducting left rear / left side drain piping, remove the protection net. Then, remove the drain socket cap and insulation material applied to left side drain socket and apply them to the right side drain socket. When doing this, insert the drain socket cap all the way in to prevent a water leakage.

- After the drain hose installing, attach the protection net by reversing the steps taken to remove it. (Refer to Fig. 21)

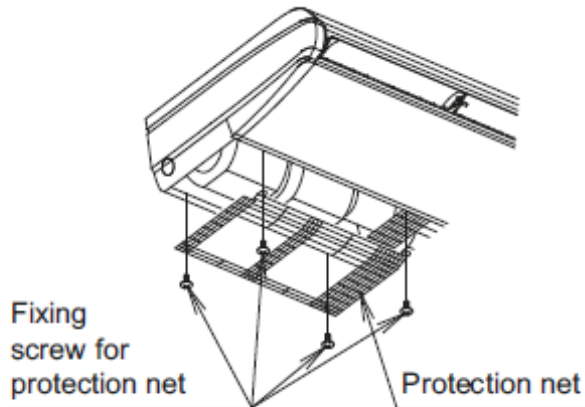


Fig. 21

- Select the piping diameter equal to or larger than that of the drain hose (PVC; polyvinyl chloride piping, nominal diameter 20mm, outside diameter 26mm).
- Install the drain piping as short as possible with downward inclination of 1/100 or more by avoiding air stagnation. (Refer to Fig. 22 and Fig. 23)
(It may cause abnormal sound such as bubbling noise.)

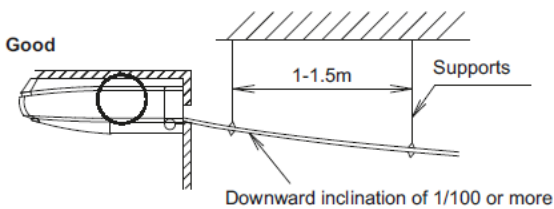


Fig. 22

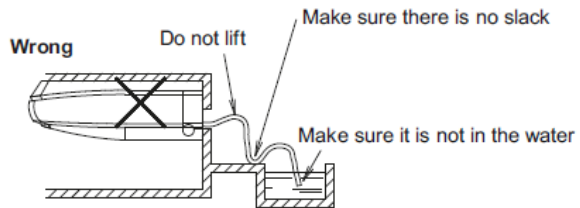


Fig. 23

- Make sure to use the attached drain hose and metal clamp. Also, insert the drain hose into the root of the drain socket, and tighten the metal clamp at the root of the drain socket tightly. (Refer to Fig. 24 and Fig. 25)

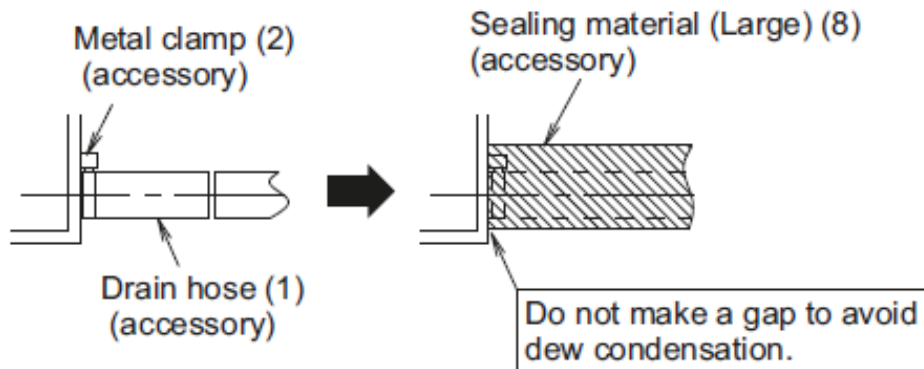


Fig. 24

- Install the metal till the tightening part is in the range of about 45° as shown in the Fig. 25

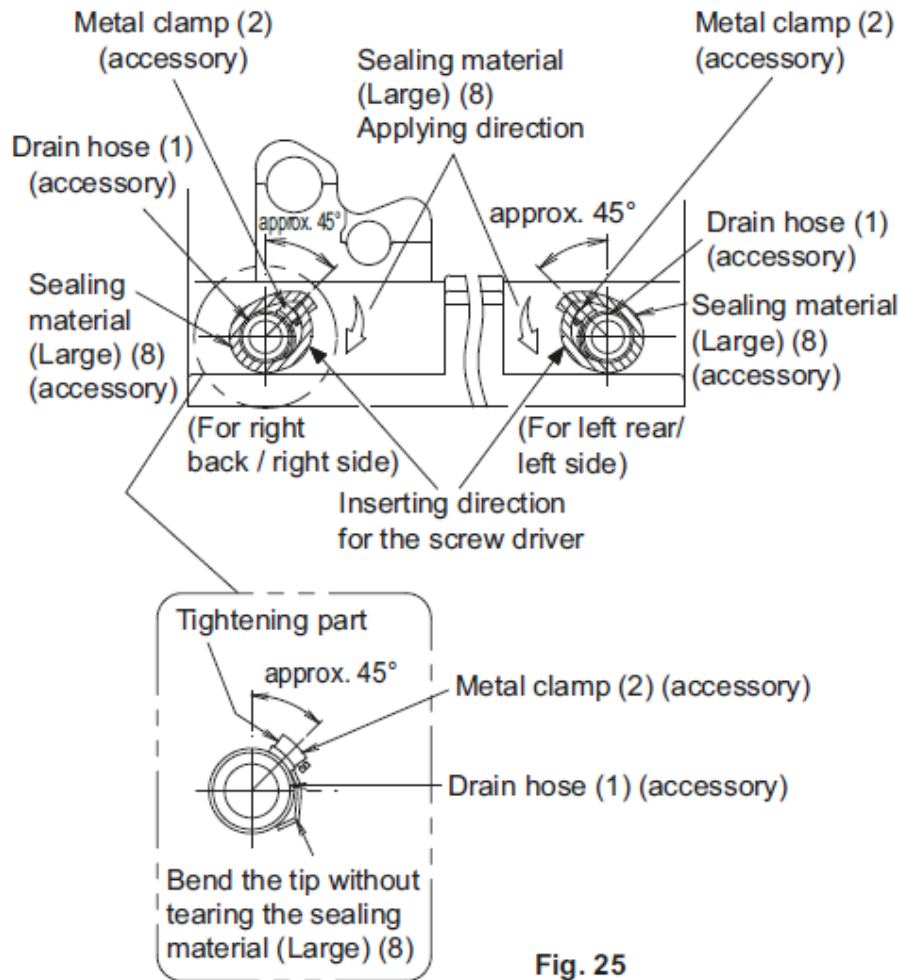


Fig. 25

- Do not bond the drain socket and drain hose. If so, maintenance and inspection for the heat exchanger and others cannot be conducted.
- Bend the tip of the metal clamp so that the sealing material does not bulge. (Refer to Fig. 25)
- When performing insulation, wind the large sealing material (Large) attached starting from the base of the metal clamp and drain hose in the direction of the arrow. (Refer to Fig. 24 and Fig. 25)
- Be sure to insulate all drain piping running indoors.
Do not deflect the drain hose inside of the indoor unit. (Refer to Fig. 26), It may cause abnormal noise such as bubbling noise. If the drain hose is deflected, it may damage the suction grille.

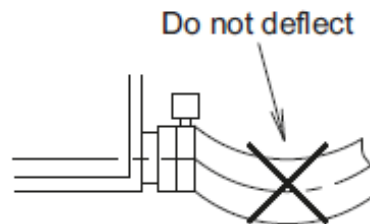


Fig. 26

- Install supports at a distance of 1 to 1.5m so that the piping may not deflect. (R.To Fig. 22)
- To avoid the attached drain hose getting excessive force, do not bend nor twist it. (It may cause water leakage.)
- When conducting the centralized drain piping, follow the instructions in Fig. 27. For the diameter of the centralized drain piping, select the diameter matching the capacity of the indoor unit to be connected.

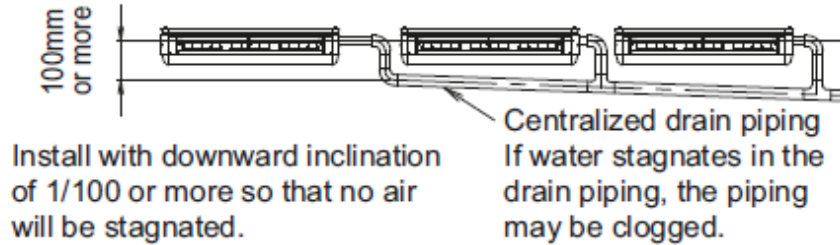
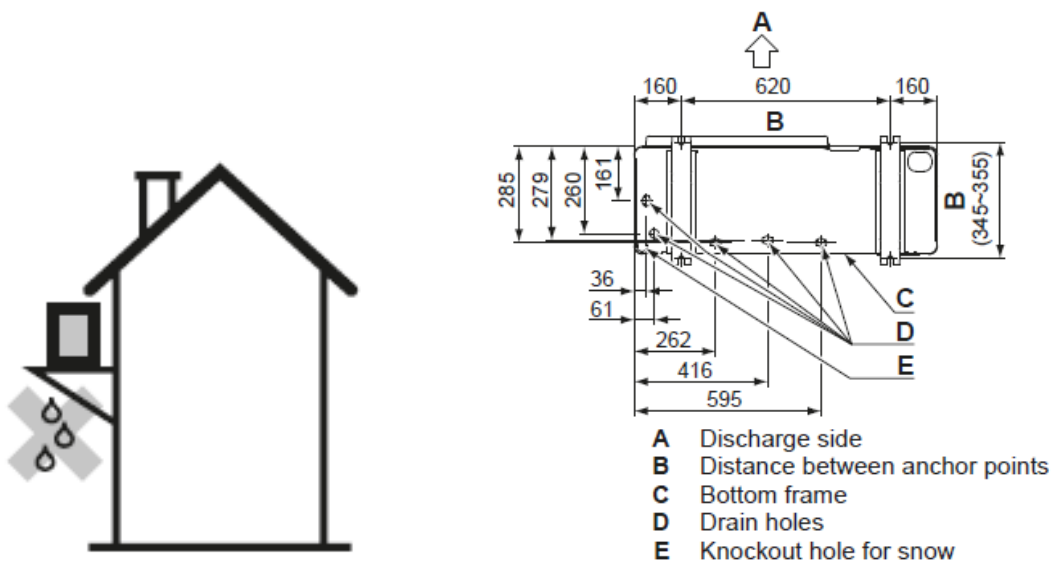


Fig. 27

- Do not connect the drain piping directly to the sewage that gives off ammonia odor. The ammonia in the sewage may go through the drain piping and corrode the heat exchanger of the indoor unit.
- Make sure that condensation water can be evacuated properly than outdoor unit.
- Install the outdoor unit on a base to make sure that there is a proper drainage in order to avoid ice accumulation.
- Prepare a water drainage channel around the foundation to drain waste water surrounding the outdoor unit.
- Avoid drain water flowing over the footpath, so that it does not become slippery in case of ambient freezing temperatures
- If installation of the outdoor unit will be on a frame, install a waterproof plate within 150 mm of the bottom side of the unit in order to prevent the invasion of water in the unit and to avoid the drain water dripping (see the following illustration);

Drain holes (dimensions in mm)



B. Erection of Piping Works

B.1 Notes on the Refrigerant Piping Works

- Piping works starts after the outdoor and indoor unit are mounted
- Connecting the refrigerant piping involves:
 - ✓ Connecting the refrigerant piping to the outdoor unit
 - ✓ Connecting the refrigerant piping to the indoor unit
 - ✓ Installing oil traps
 - ✓ Insulating the refrigerant piping

B.2 Precautions when Connecting the Refrigerant Piping

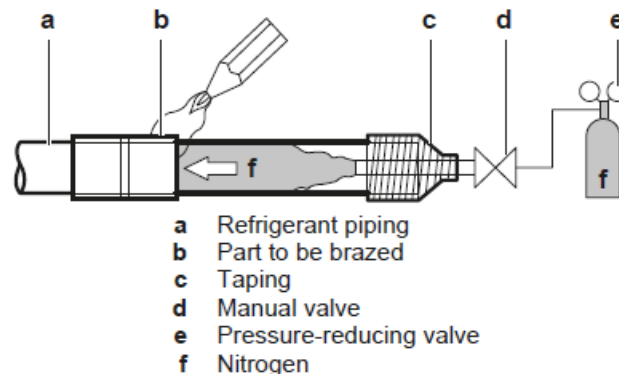
Taking the following precautions on refrigerant piping into account:

- Do NOT use mineral oil on flared part.
- NEVER install a drier to this R410A unit to guarantee its lifetime. The drying material may dissolve and damage the system.
- Avoid anything but the designated refrigerant to get mixed into the refrigerant cycle (for example, as air).
- Only use R410A when adding refrigerant.
- Only use installation tools (e.g. manifold gauge set) that are exclusively used for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils and moisture) from mixing into the system.
- Install the piping so that the flare is NOT subjected to mechanical stress.
- Protect the piping as described in the following table to prevent dirt, liquid or dust from entering the piping.
- Do NOT open the refrigerant stop valve "factory closed" before checking the refrigerant piping. When you need to charge additional refrigerant it is recommended to open the refrigerant stop valve after charging.

B.3 Brazing Pipe Ends

The indoor unit and outdoor unit have flare connections. Connect both ends without brazing. If brazing should be needed, take the following into account

- When brazing, blow through with nitrogen to prevent creation of large quantities of oxidized film on the inside of the piping. This film adversely affects valves and compressors in the refrigerating system and prevents proper operation.
- Set the nitrogen pressure to 20 kPa (0.2 bar; just enough so it can be felt on the skin) with a pressure-reducing valve.

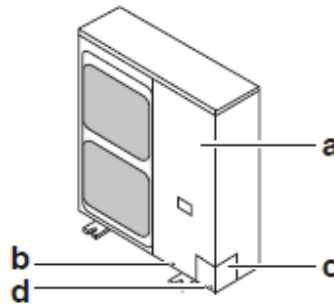


- Do NOT use anti-oxidants when brazing pipe joints.
- Residue can clog pipes and break equipment.
- Do NOT use flux when brazing copper-to-copper refrigerant piping. Use phosphor copper brazing filler alloy (BCuP), which does not require flux.
- Flux has an extremely harmful influence on refrigerant piping systems. For instance, if chlorine based flux is used, it will cause pipe corrosion or, in particular, if the flux contains fluorine, it will deteriorate the refrigerant oil.

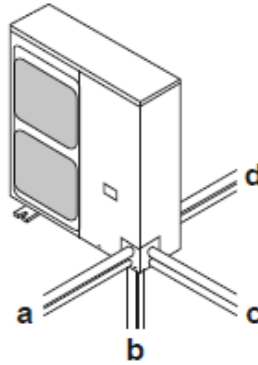
B.4 Connecting the Refrigerant Piping to the Outdoor Unit

1. Doing the Following

- Remove the service cover (a) with screw (b).
- Remove the piping intake plate (c) with screw (d).

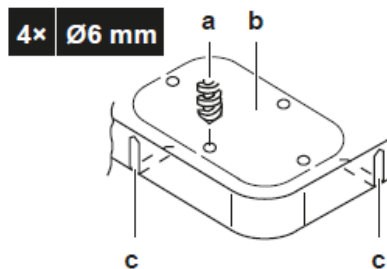


2. Choose a piping route (a, b, c or d)



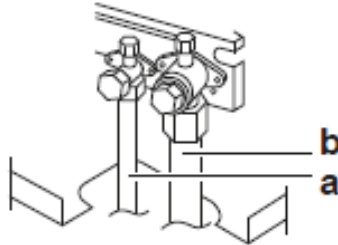
3. If you have chosen the downwards piping route:

- Drill (a, 4×) and remove the knockout hole (b).
- Cut out the slits (c) with a metal saw



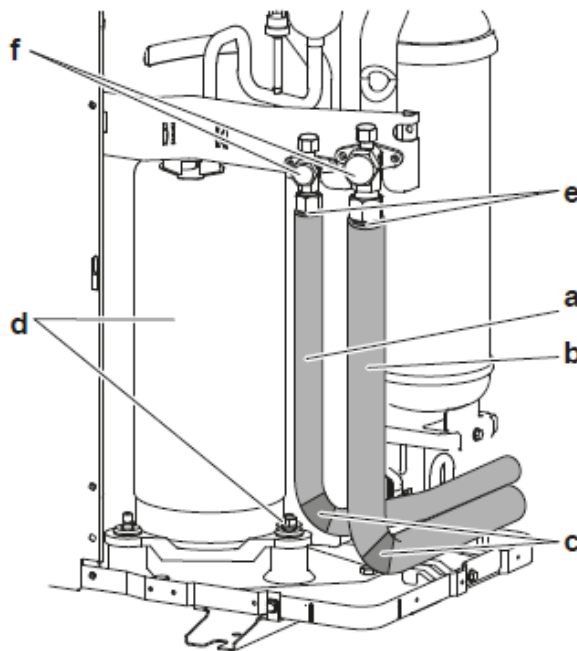
4. Do the following:

- Connect the liquid pipe (a) to the liquid stop valve.
- Connect the gas pipe (b) to the gas stop valve.

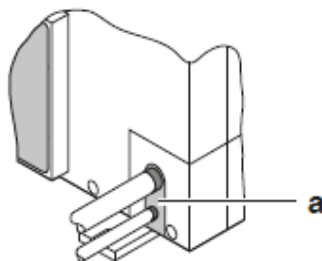


5. Do the following:

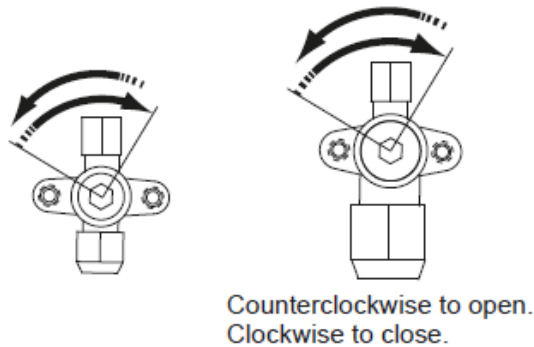
- Insulate the liquid piping (a) and the gas piping (b).
- Wind heat insulation around the curves, and then cover it with vinyl tape (c).
- Make sure the field piping does not touch any compressor components (d).
- Seal the insulation ends (sealant etc.) (e).



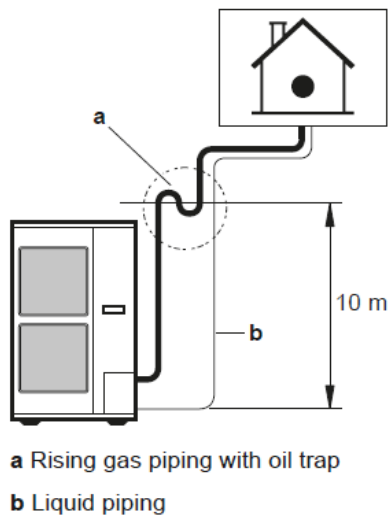
- Reattach the service cover and the piping intake plate.
- Seal all gaps (example: a) to prevent snow and small animals from entering the system



- Make sure to open the stop valves after installing the refrigerant piping and performing Vacuum drying. Running the system with the stop valves closed may break the compressor



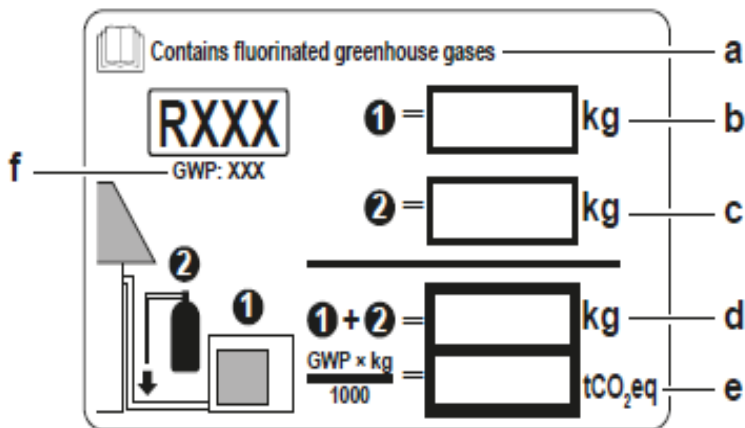
- Oil traps are required; when the indoor unit is installed higher than the outdoor unit.
If oil flows back into the outdoor unit's compressor, this might cause liquid compression or deterioration of oil return. Oil traps in the rising gas piping can prevent this
Install an oil trap every 10 m (height difference)



B.5 Charging the Refrigerant

- The outdoor unit's internal refrigerant piping has been factory tested for leaks.
- Only we have to check the outdoor unit's external refrigerant piping
- The outdoor unit is factory charged with refrigerant, but in some cases charging or re-charging might be necessary When the total liquid piping length is more / less than specified
- RZQG units: When piping length is <5 m, a complete recharge of the unit is required
- Amount of R-410a for Complete Recharge ($L1 \leq 5$ m) = 3 Kg.
- Amount of R-410a for Additional Charge ($L1 \geq 15.1$ m) by adding 0.5 Kg for each 5 meters length increasing, but no need to add additional charge if $L1 \leq 15$ m.
- Before completely recharging refrigerant, make sure the system is pumped down.

- To charge Refrigerant:
 - ✓ Only use R410A as refrigerant. Other substances may cause explosions and accidents.
 - ✓ R410A contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 2087.5. Do NOT vent these gases into the atmosphere.
 - ✓ When charging refrigerant, always use protective gloves and safety glasses
 - ✓ To avoid compressor breakdown, do NOT charge more than the specified amount of refrigerant
 - ✓ Connect the refrigerant cylinder to both the service port of the gas stop valve and the service port of the liquid stop valve.
 - ✓ Charge the additional refrigerant amount.
 - ✓ Open the stop valves
- Filling in the fluorinated greenhouse gases label, and fixing it to the inside of the outdoor unit.
 - ✓ Fill in the label as follows



- a** If a multilingual fluorinated greenhouse gases label is delivered with the unit (see accessories), peel off the applicable language and stick it on top of **a**.
- b** Factory refrigerant charge: see unit name plate
- c** Additional refrigerant amount charged
- d** Total refrigerant charge
- e** **Greenhouse gas emissions** of the total refrigerant charge expressed as tonnes CO₂-equivalent
- f** GWP = Global warming potential

- ✓ Fix the label on the inside of the outdoor unit. There is a dedicated place for it on the wiring diagram label

B.6 Insulation of the Refrigerant Piping

- Insulation of field piping must be carried out up to the connection inside the casing. If the piping is exposed to the atmosphere, it may cause sweating or burn due to touching the piping, electric shocks or a fire due to the wiring touching the piping.

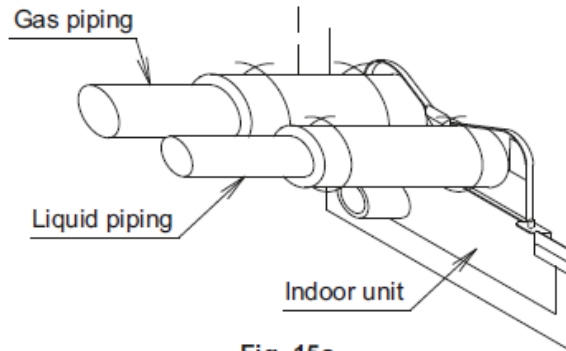
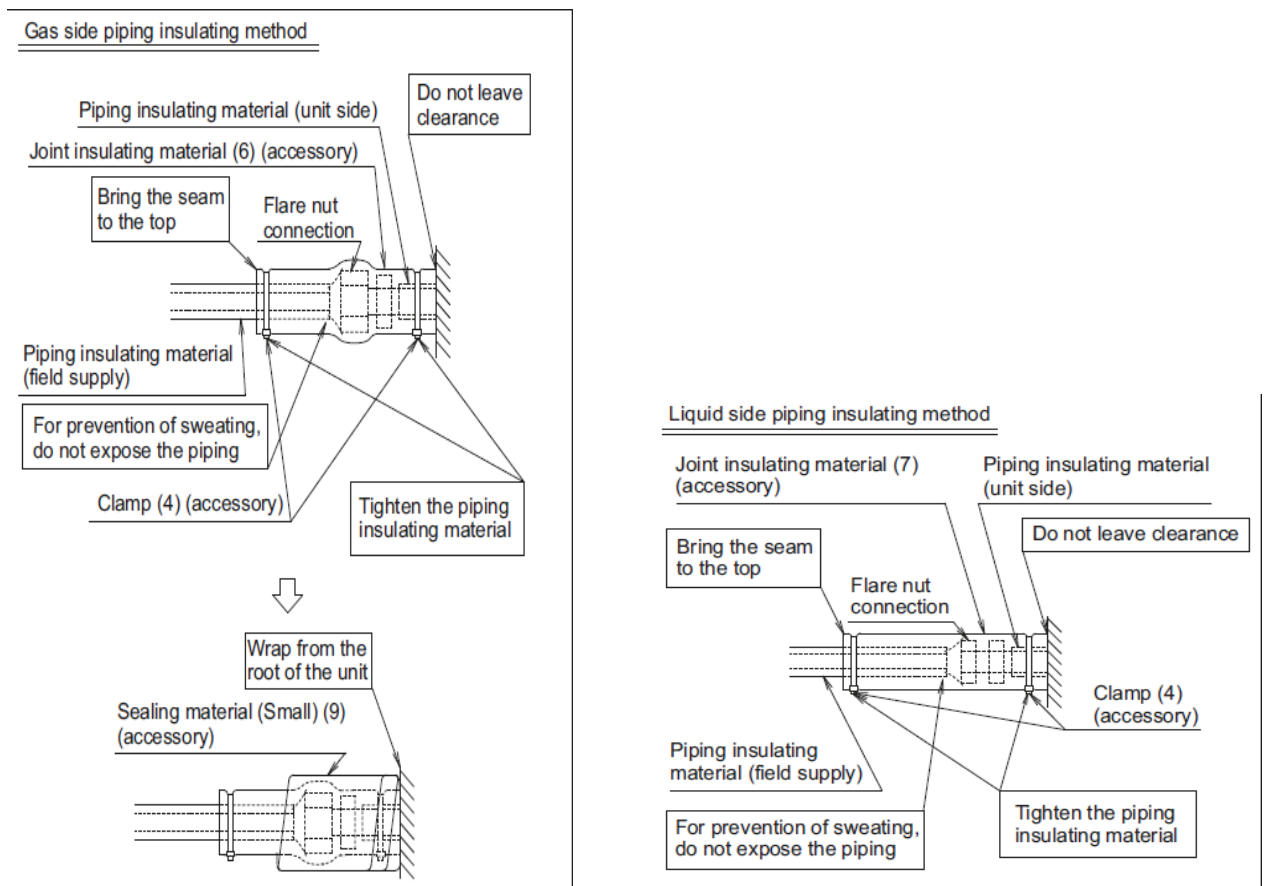


Fig. 15a

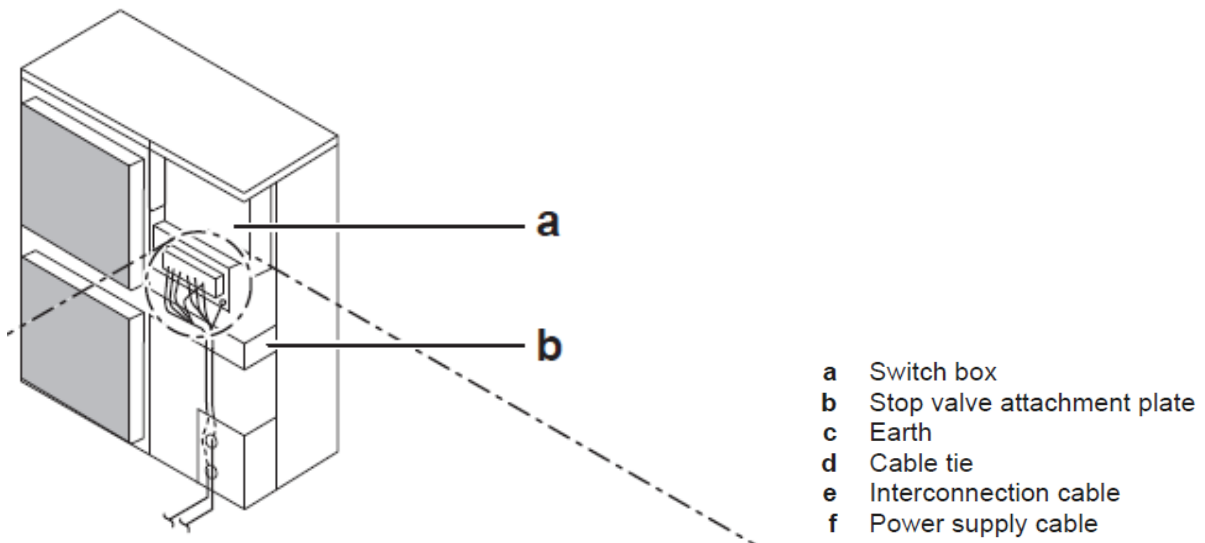
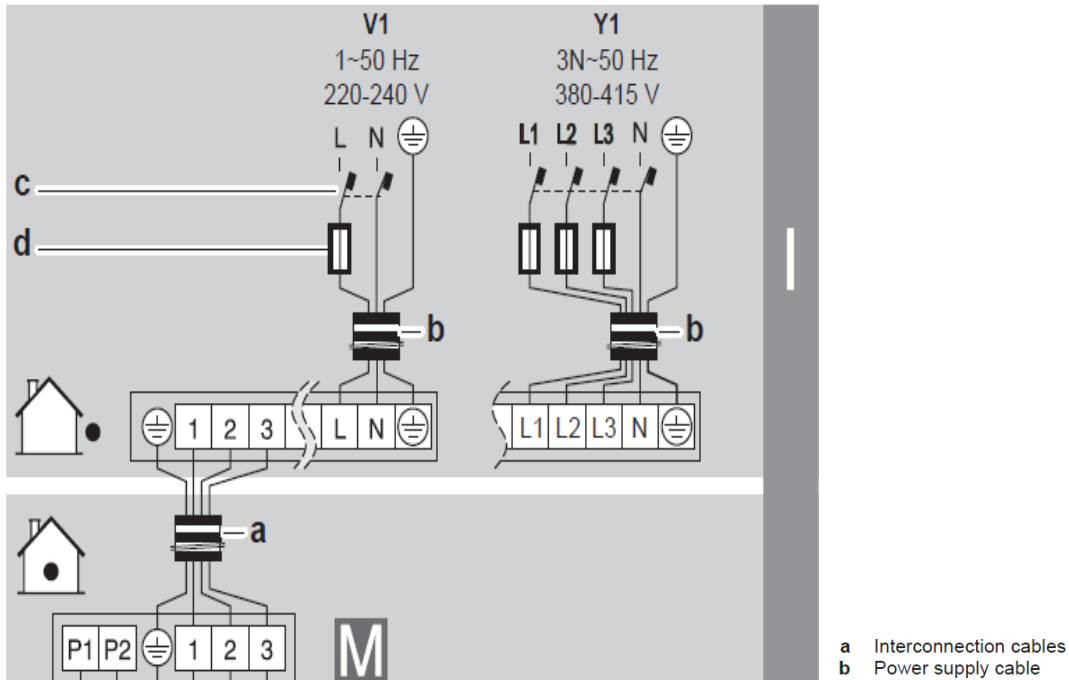
- After leak test, referring to Fig. 15, insulate both the gas and liquid piping connection with the attached joint insulating material to prevent the piping from getting exposed. Then, tighten the both ends of insulating material with the clamp.
- Wrap the sealing material (Small) around the joint insulating material (flare nut section), only the gas piping side.
- Make sure to bring the seam of joint insulating material to the top

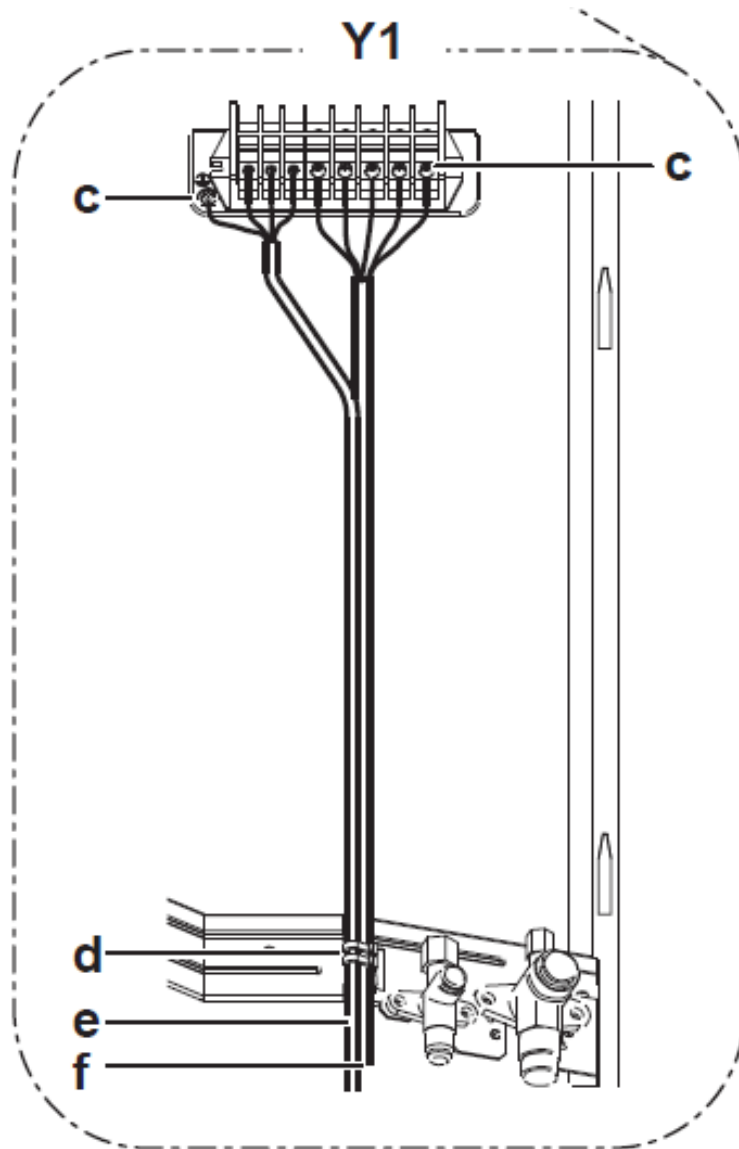


C. Erection of Electrical Works

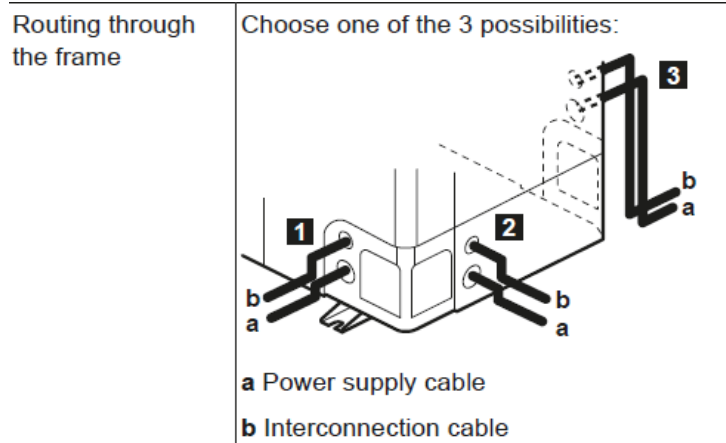
C.1 Notes on the Electrical Wiring Works

- Making sure the power supply system complies with the electrical specifications of the units
- Source to be Y1; 400V, 50HZ, 3N, 22.5A (MCA), 25A Recommended E.L C.B
- Follow the wiring diagram (delivered with the outdoor unit, located at the inside of the service cover)
- Remove the Service Cover of outdoor unit.
- Connect the interconnection cables and power supply as follows:

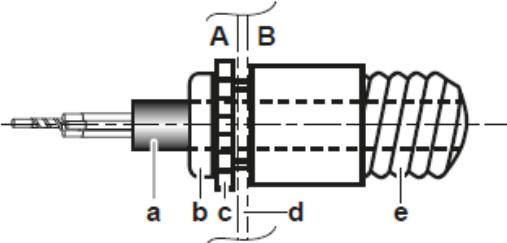




- Fix the cables (power supply and interconnection cable) with a cable tie to the stop valve attachment plate.
- Route the wiring through the frame and connect it to it.
- Routing through the frame as follows:



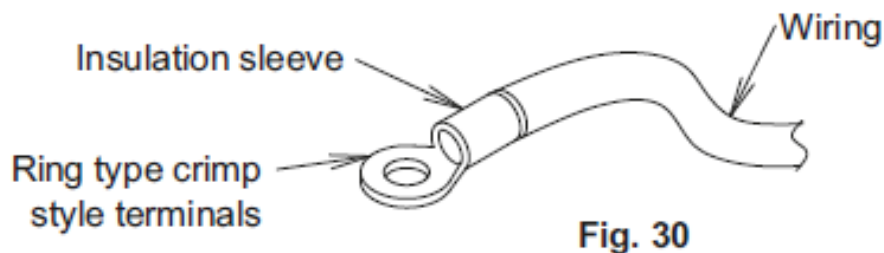
- Connecting to the frame as follows:

Connecting to the frame	<p>When cables are routed from the unit, a protection sleeve for the conduits (PG insertions) can be inserted at the knockout hole.</p> <p>When you do not use a wire conduit, protect the wires with vinyl tubes to prevent the edge of the knockout hole from cutting the wires.</p> 
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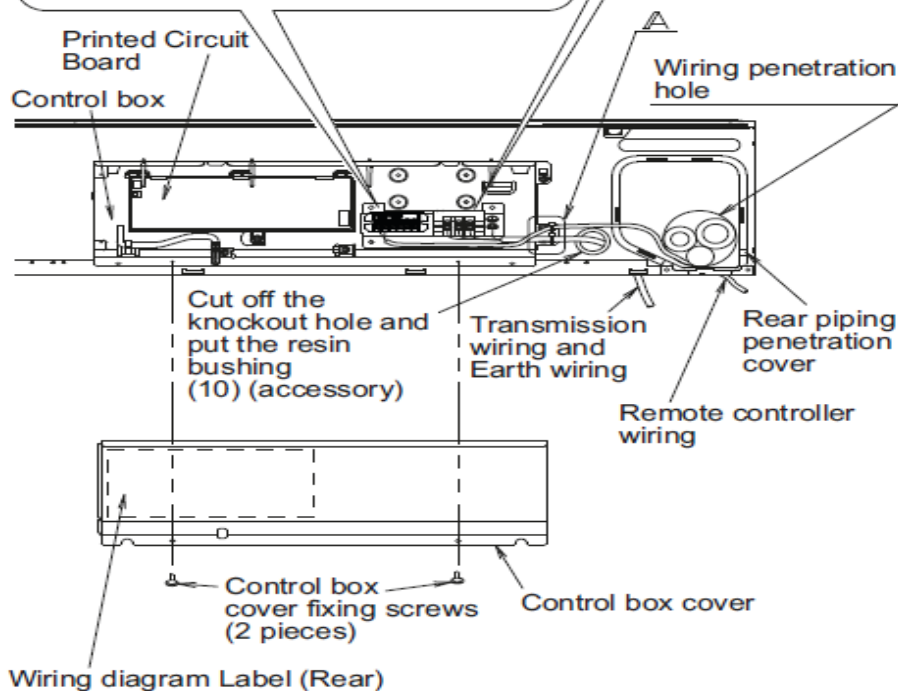
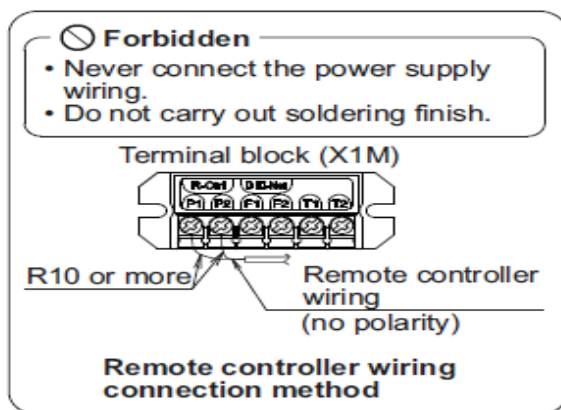
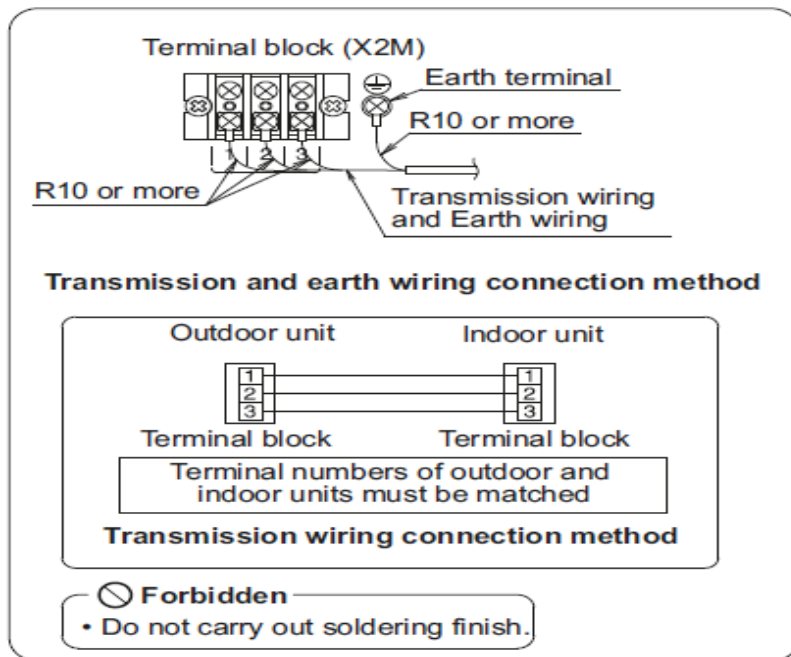
- Reattach the service cover. to close the outdoor unit".
- Connect an earth leakage circuit breaker and fuse to the power supply line.

C.2 Electrical Wiring Connection

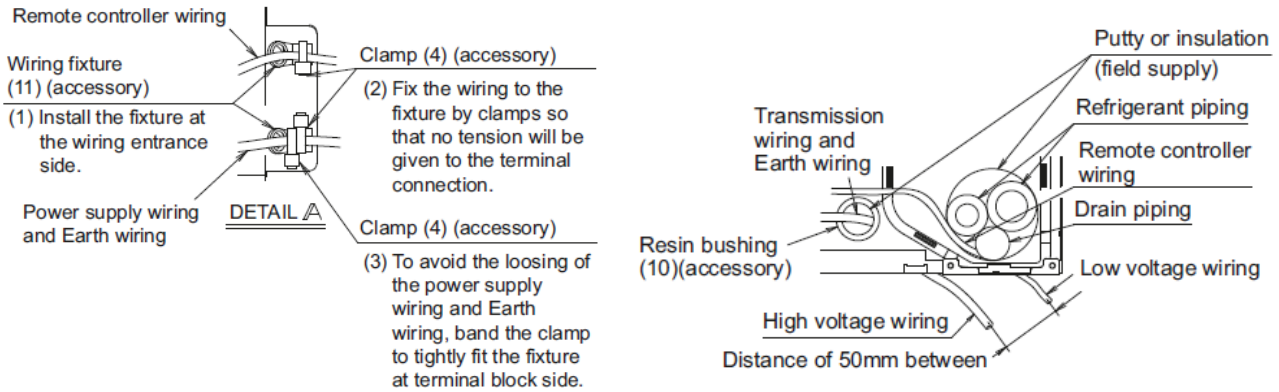
- The indoor unit will be connected to the outdoor unit with Control cable (Transmission Wiring) stated in Table.2 (4C, 2.5 mm²).
- For connection to the terminal block, use ring type crimp style terminals with insulation sleeve or treat the wiring with insulation. (Refer to Fig. 30)



- Connect the transmission wiring through the resin bushing accessory to the terminal block (X2M: 3P) while matching up the numbers (1 to 3), and then connect the earth wiring to the earth terminal. After this is done, use the wiring fixture and clamp attached to bind the wiring without applying tension to the connecting section of the wirings.
- Connect the remote controller wiring led from the routing hole to the terminals (P1 and P2) of the terminal block (X1M: 6P). (There is no polarity.) After this is done, use the wiring fixture and clamp attached to bind the wiring without applying tension to the connecting section of the wirings



- If the low voltage wiring (e. g. remote controller wiring) and the high voltage wiring (transmission wiring, earth wiring) are brought into the indoor unit from the same place, they may be affected by electric noise (outside noise) and cause malfunction or failure.
- Keep the distance of 50mm or more between the low voltage wiring (e. g. remote controller wiring) and the high voltage wiring (transmission wiring, earth wiring) anywhere outside the indoor unit. If both the wirings are laid down together, they may be affected by electric noise (outside noise) and cause malfunction or failure.



- The outdoor unit will be connected to the power source with power cable (4C, 6 mm²) through Earth Leakage Circuit Breaker in DB Panel.

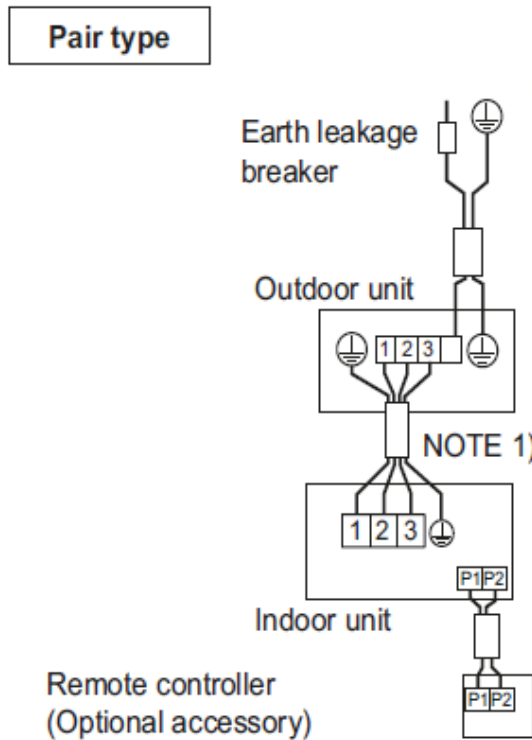


Fig. 31

- When using a wireless remote controller, it is necessary to set the wireless remote controller address. Refer to the installation manual attached to the wireless remote controller

5.0 Timeline Schedule

The Installation of the 8 AC Units will be executed within 2 working weeks (16 Days) from the day of site receipt ready, free of obstacles and each AC unit attached to its Location (By Client).

Site / Location No.	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8									
Facility / Operator Shelter No.	OP. Shelter 1	OP. Shelter 2	OP. Shelter 3	OP. Shelter 4	OP. Shelter 5	OP. Shelter 6	OP. Shelter 7	OP. Shelter 8									
AC Unit No.	AC Unit 1	AC Unit 2	AC Unit 3	AC Unit 4	AC Unit 5	AC Unit 6	AC Unit 7	AC Unit 8									
INSTALLATION TIMELINE SCHEDULE PER DAYS																	
S.N	TASK	DY 01	DY 02	DY 03	DY 04	DY 05	DY 06	DY 07	DY 08	DY 09	DY 10	DY 11	DY 12	DY 13	DY 14	DY 15	DY 16
1	Preparing the Installation Site																
2	Preparing the Refrigerant Piping																
3	Preparing the Electrical Wiring																
4	Mounting AC Units																
5	Erection of Piping Works																
6	Erection of Electrical Works																
7	Testing & Commissioning (T&C)																
8	Handover to the User																

6.0 Health and Safety Plan

A Health and Safety Plan (HSP) has been developed for BADRY's work at the Site and is included in Appendix 1. Other Sub-contractors and sub-consultants will be responsible for their own HSP.

In addition, due to the private parcels and various manufacturing operations, each site may have specific health and safety considerations or potentially health and safety training requirements prior to any on-site work.



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