

Line Branch Models: E-52XN3, E-102XN3, E-162XN3, E-202XN3, E-242XN3, E-322XN3

i **NOTE**

Hand over this installation manual to the next installation work personnel.

! **CAUTION**

Do not put any material on the product.

1 APPLICABLE OUTDOOR UNITS

These multiple pipe connecting kits can be applied to the R410A SET-FREE series.

2 TRANSPORTATION

Transport the product as close to the installation location as practical before unpacking.

3 BEFORE INSTALLATION

Confirm the number of the following parts by referring to the model printed on the package before unpacking.

Do NOT put any foreign material into the parts. Check to confirm that no foreign materials are inside the parts before installation.

i **NOTE**

If any of these parts is not contained, please contact your distributor.

Name of parts	E-52XN3		E-102XN3		E-162XN3		E-202XN3		E-242XN3		E-322XN3		
	Q'ty		Q'ty		Q'ty		Q'ty		Q'ty		Q'ty		
Branch pipe for low pressure gas line		1		1		1		1		1		1	
Branch pipe for high/low pressure gas line		1		1		1		1		1		1	
Branch pipe for liquid line		1		1		1		1		1		1	
Accessory	Insulation for low pressure gas line		1		1		1		1		1		1
	Insulation for high/low pressure gas line		1		1		1		1		1		1
	Insulation for liquid line		1		1		1		1		1		1
	Reducer for low pressure gas line connection (For end of Multi-Kit connection)		None		None		1		1		1		1
			None		None		None		None		None		1
	Reducer for high/low pressure gas line connection (For end of Multi-Kit connection)		None		None		None		None		1		1
		None		None		None		None		None		1	
Reducer for liquid line connection (For unit piping connection)		2		1		1		1		1		1	
Tape		3		3		3		3		3		3	

4 INSTALLATION WORK

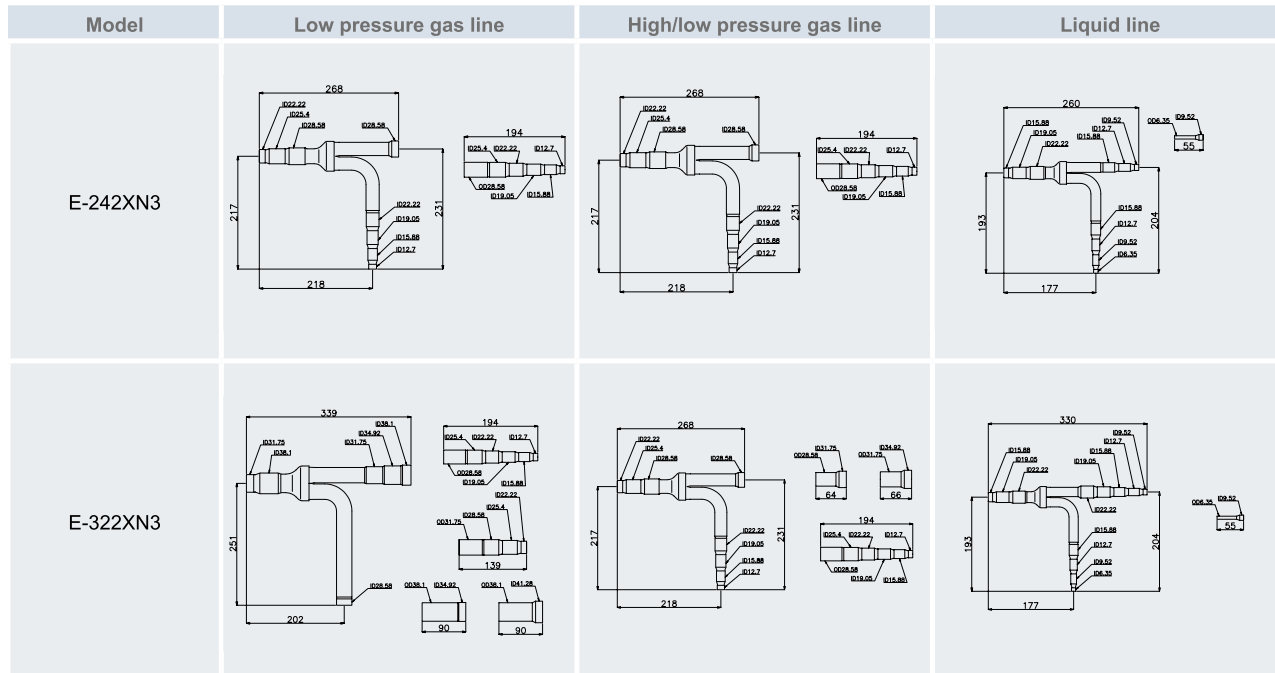
4.1 PIPING CONNECTION SIZE

The ends of the multi-kits are finished as shown in the following figures. Cut the end of the pipe to meet with the pipe size.



Piping shall be supported with adequate space. Bent pipes and bypass piping (horizontal loop) shall also be installed in order to absorb piping elasticity caused by temperature changes.

Model	Low pressure gas line	High/low pressure gas line	Liquid line
E-52XN3			
E-102XN3			
E-162XN3			
E-202XN3			



Unit: mm, ID: Inner diameter, OD: Outer diameter

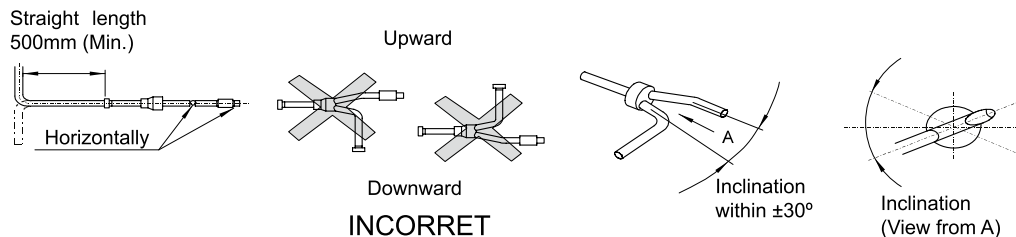
- A To indoor unit
- B To outdoor unit
- C To main piping

4.2 INSTALLATION POSITION

1 Horizontal Installation

Locate the branch pipes to become the caution label uppermost on the same horizontal plane. (Inclination within $\pm 30^\circ$)

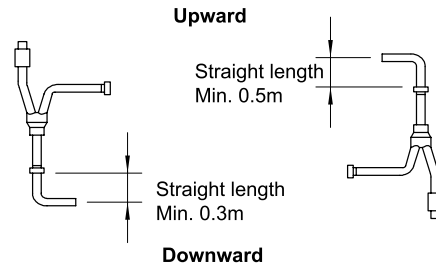
Make the straight length a minimum of 500mm after the vertical bend.



2 Vertical Installation

Straight length of the pipe connection on the outdoor unit side is made as follows:

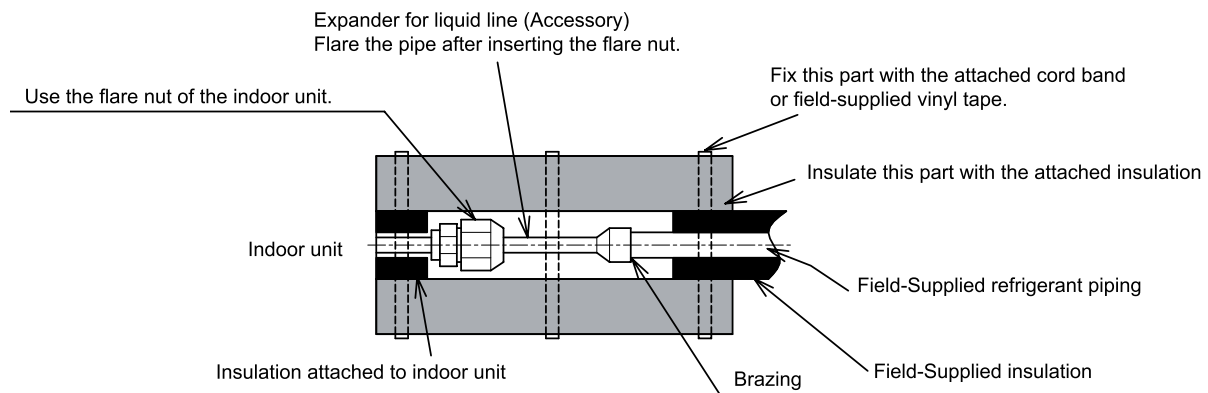
- a. The collective pipe connection part is installed upward, the straight length must be min. 0.5m
- b. The collective pipe connection part is installed downward, the straight length must be min. 0.3m.



4.3 CONNECTION PROCEDURE FOR PIPING JOINT

When connecting liquid piping for the unit with a capacity 2.0HP or smaller, and with the length of piping is 15 meters or longer, apply the piping size of $\phi 9.52\text{mm}$. Fix the connecting pipe as shown in the below figure.

Use the insulation attached to the indoor unit. Example: 36HP (The combination of 3 outdoor units)

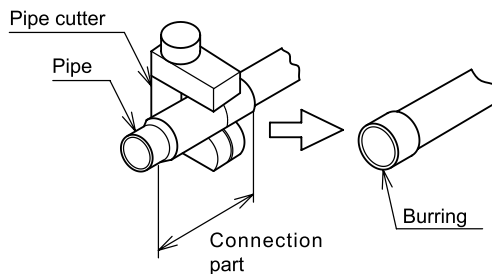


4.4 PIPING CONNECTION

- When the branched pipe size is smaller than 22.2mm of inner diameter, a mini pipe cutter (field-supplied) as follow is required.

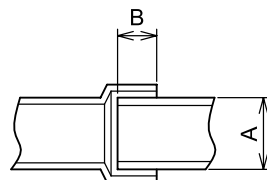
Recommended mini pipe cutter	Cleavable size	Rotating radius
<p>※ (70) ※ less than 70mm</p>	<p>Ø 5 - 28</p>	<p>(50)</p>

- Use clean copper pipes without any moisture or foreign materials on inner surface of pipes. When connecting refrigerant pipe, cut the copper pipes with a pipe cutter as shown below. Also blow the pipes with nitrogen or air to remain no dust inside the pipe. Do NOT use a saw, a grindstone or others which causes a large amount of cutting powder.



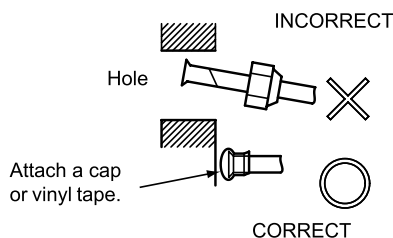
- When cutting the pipe, secure the adequate depth for brazing as shown in the following table.

A: Outer diameter	B: Minimum depth
Over 5, Below 8	6
Over 8, Below 12	7
Over 12, Below 16	8
Over 16, Below 25	10
Over 25, Below 35	12
Over 35, Below 45	14

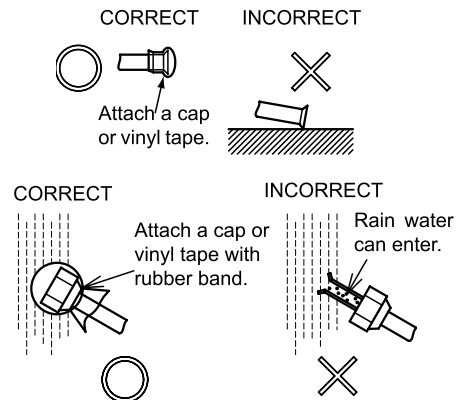


• Caution for Refrigerant Piping

When installing pipe through the wall, secure a cap at the end of the pipe.



Do NOT place the pipe directly on the ground.



- Make sure that all stop valves of the outdoor unit are closed completely.
- Blow the inside of the pipes with nitrogen gas when brazing.

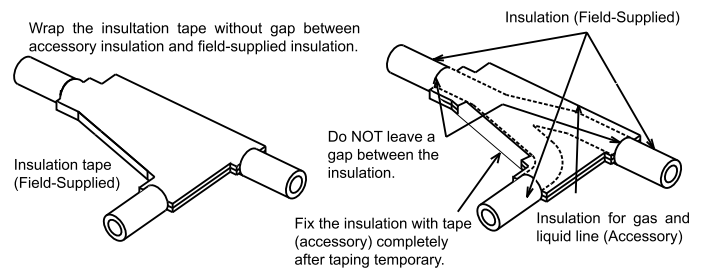
! DANGER

Make sure that the refrigerant leakage test should be performed. Refrigerant (Fluorocarbon) for the indoor unit is non-flammable, non-toxic and odorless. However, if the refrigerant is leaked and is contacted with fire, toxic gas will generate. Also, because the fluorocarbon is heavier than air, the floor surface will be filled with it, which could cause suffocation.

- The air tight test pressure of this product is 4.15MPa.
- Apply the insulation supplied with this multi-kits to each branch (liquid side and gas side) with a tape. Also apply the field-supplied insulation to the field-supplied pipes.

i NOTE

When polyethylene foam is applied, a thickness of 10mm for liquid piping and 15mm to 20mm for gas piping is recommended. (Use the insulation with heat resistance of 100°C for gas piping.)



! CAUTION

- Perform the insulation work when the pipe surface temperature decreases to the room temperature. If insulation work is performed immediately after brazing, insulation may melt.
- If the ends of pipe are open to the atmosphere for a while after performing piping work, securely put caps or plastic bags over the pipe ends for avoiding moisture or dust.

After installation, it is recommended to keep this manual by a customer.

