CONVERSION ADAPTER KIT
INSTALLATION INSTRUCTION SHEET

CAUTION
R410A
REFRIGERANT
This Air Conditioner contains and operates with refrigerant R410A and Polyol Ester oil.

THIS PRODUCT MUST ONLY BE INSTALLED OR SERVICED BY QUALIFIED PERSONNEL.

Refer to Commonwealth, State, Territory and local legislation, regulations, codes, installation & operation manuals, before the installation, maintenance and/or service of this product.

English

For authorized service personnel only.

IMPORTANT!
Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all danger, warning, and caution notices given in this manual.

WARNING: This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION: This symbol refers to a hazard or unsafe practice which can result in personal injury and the potential for product or property damage.

SPECIAL PRECAUTIONS

When Connecting Refrigerant Tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE:
Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "small" or "large" rather than as "liquid" or "gas".

⚠ DANGER

Never touch electrical components immediately after the power supply has been turned off. Electrical shock may occur. After turning off the power, always wait 5 minutes or more before touching electrical components.

⚠ WARNING

① **During installation, make sure that the refrigerant pipe is attached firmly before you run the compressor.**
Do not operate the compressor under the condition of refrigerant piping not attached properly with 2-way or 3-way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.

② **When installing and relocating the air conditioner, do not mix gases other than the specified refrigerant (R410A) to enter the refrigerant cycle.**
If air or other gas enters the refrigerant cycle, the pressure inside the cycle will rise to an abnormally high value and cause breakage, injury, etc.

③ **For the room air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.**

④ **Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available standards parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.**

⑤ **Do not turn on the power until all installation work is complete.**

⑥ **Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation.**

⑦ **If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.**

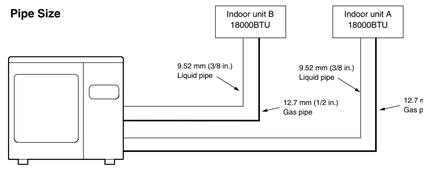
- **Let the customer keep this installation instruction sheet because it is used when the room air conditioner is serviced or moved.**

⚠ CAUTION

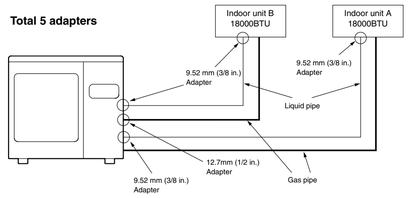
① **Additional multi-zone combination. These are the instructions for installing the outdoor unit with two indoor units refrigeration lines only. For instructions on installing the indoor unit and outdoor unit refer to their installation manual respectively.**

② **Connectible capacity of two 18000BTU indoor units on port A and B only. All other dual zone combination on the outdoor unit are not allowed and will void system warranty. When this combination is used port C and D must not be used.**

Pipe Size



Total 5 adapters



STANDARD PARTS

The following installation parts are furnished. Use them as required.

36 type only

Name and Shape	Q'ty	Use
Adapter assy 6.35 mm → 9.52 mm (1/4 in.) (3/8 in.) Gasket Adapter	4	For use when connecting 18000BTU models to outdoor unit's ports A and B and the half-union liquid pipe on indoor unit.
Adapter assy 9.52 mm → 12.7 mm (3/8 in.) (1/2 in.) Gasket Adapter	1	For use when connecting 18000BTU models to outdoor unit's port B.

OPERATING RANGE

The temperature range where this dual-zone multi system can be operated is as follows.
If it operates outside the temperature range, the normal operation cannot be guaranteed.

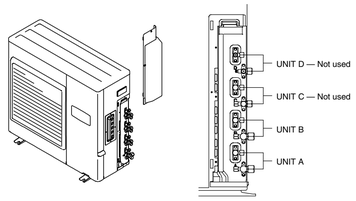
		Indoor air intake	Outdoor air intake
Cooling	Maximum	90°F DB	115°F DB
	Minimum	64°F DB	50°F DB
Heating	Maximum	88°F DB	75°F DB
	Minimum	60°F DB	14°F DB

*1 Indoor humidity about 80% or less
*2 please note that the hatching item is different from those of 3 or 4 rooms combination.

4. SELECTING PIPE SIZE AND CONVERSION PORT SIZE WITH ADAPTER

- Refer to the following table for the proper diameters of the connection pipes between the indoor and outdoor units.
- To install an indoor unit, refer to the installation instruction sheet included with the indoor unit.
- To install an outdoor unit, refer to the installation instruction sheet included with the outdoor unit.
- Depending on the system, Liquid and gas may be either narrow or wide pipe.
  Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "small" or "large" rather than as "liquid" or "gas".

Outdoor unit				Connection pipe	
Port	Standard port size		Size of adapter	Outside diameter	Minimum thickness
D	Liquid	6.35 mm (1/4 in.)	not available	not available	not available
	Gas	9.52 mm (3/8 in.)			
C	Liquid	6.35 mm (1/4 in.)	not available	not available	not available
	Gas	9.52 mm (3/8 in.)			
B	Liquid	6.35 mm (1/4 in.)	6.35 mm (1/4 in.) → 9.52 mm (3/8 in.)	9.52 mm (3/8 in.)	0.80 mm (1/32 in.)
	Gas	9.52 mm (3/8 in.)	9.52 mm (3/8 in.) → 12.7 mm (1/2 in.)	12.7 mm (1/2 in.)	0.80 mm (1/32 in.)
A	Liquid	6.35 mm (1/4 in.)	6.35 mm (1/4 in.) → 9.52 mm (3/8 in.)	9.52 mm (3/8 in.)	0.80 mm (1/32 in.)
	Gas	12.7 mm (1/2 in.)	none	12.7 mm (1/2 in.)	0.80 mm (1/32 in.)



⚠ CAUTION

The connections for Units A, B are as shown below.
Be sure that the connections are correct.

Indoor unit			Connection pipe	
Unit	Standard half-union size	Size of adapter	Outside diameter	Minimum thickness
B	Liquid 6.35 mm (1/4 in.)	6.35 mm (1/4 in.) → 9.52 mm (3/8 in.)	9.52 mm (3/8 in.)	0.80 mm (1/32 in.)
	Gas 12.7 mm (1/2 in.)	none	12.7 mm (1/2 in.)	0.80 mm (1/32 in.)
A	Liquid 6.35 mm (1/4 in.)	6.35 mm (1/4 in.) → 9.52 mm (3/8 in.)	9.52 mm (3/8 in.)	0.80 mm (1/32 in.)
	Gas 12.7 mm (1/2 in.)	none	12.7 mm (1/2 in.)	0.80 mm (1/32 in.)

⚠ CAUTION

Operation cannot be guaranteed if the correct combination of pipes, valves, etc., is not used to connect the indoor and outdoor units.

5. HEAT INSULATION AROUND CONNECTION PIPES REQUIREMENTS

⚠ CAUTION

Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks.
Use heat insulation with heat resistance above 248 °F (120 °C). (Reverse cycle model only)
In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 5.9 in. or thicker and if the expected humidity exceeds 80%, use heat insulation that is 7.9 in. or thicker.
If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation.
In addition, use heat insulation with heat conductivity of 0.045 W/(m·K) or less (at 68 °F [20 °C]).

Connect the connection pipes according to "1 CONNECTION PIPES" in this installation instruction sheet.

INSTALLATION PROCEDURE

1 CONNECTION PIPES

⚠ CAUTION

① **Do not use mineral oil on flared part. Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.**

② **While welding the pipes, be sure to blow dry nitrogen gas through them.**

③ **The maximum lengths of this product are shown in the table. If the units are further apart than this, correct operation can not be guaranteed.**

1. OUTDOOR UNIT

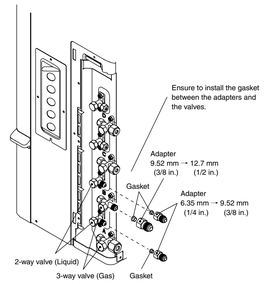
(1) Detach the caps from the outdoor port.

⚠ CAUTION

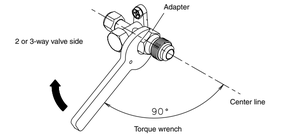
① **Be sure to apply the pipe against the port on the indoor unit and outdoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.**

② **Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.**

(2) Attach the adapter before connecting pipe.
- When using the adapter, be careful not to overtighten the nut, or the smaller pipe may be damaged.
- Apply alkylbenzene oil (HAB) to the threaded connection port of the outdoor unit where the adapter comes in.
- Use appropriate wrenches to avoid damaging the connection thread by overtightening the adapter.



(3) Tighten the adapter.
When the adapter is tightened properly by your hand, use a torque wrench to finally tighten it.



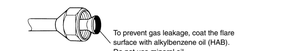
⚠ CAUTION

Hold the torque wrench at its grip, keeping it in the right angle with the adapter, in order to tighten the adapter correctly.

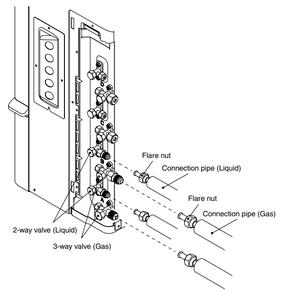
Adapter tightening torque

Adapter type	Tightening torque
6.35 mm (1/4 in.) → 9.52 mm (3/8 in.)	16 to 18 N·m (142 to 159 lbf-in.)
9.52 mm (3/8 in.) → 12.7 mm (1/2 in.)	32 to 42 N·m (283 to 372 lbf-in.)

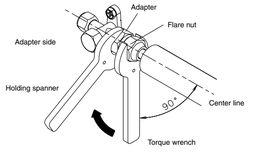
(4) Centering the pipe against port on the outdoor unit, turn the flare nut with your hand.



(5)



(6) Tighten the flare nut.
When the flare nut is tightened properly by your hand, use a torque wrench to finish tightening it.



⚠ CAUTION

① **Hold the torque wrench at its grip, keeping it in the right angle with the pipe, in order to tighten the flare nut correctly.**

② **The valve may be damaged if it is not tightened with a spanner and a torque wrench as shown on above figure.**

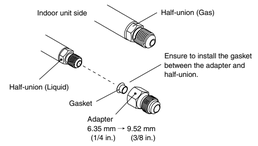
③ **Tighten the flare nut to avoid the loosing of tightened adapter.**

Flare nut tightening torque

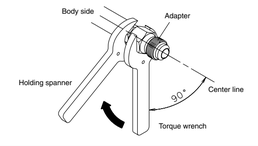
Flare nut	Tightening torque
9.52 mm (3/8 in.)	32 to 42 N·m (283 to 372 lbf-in.)
12.7 mm (1/2 in.)	49 to 61 N·m (434 to 540 lbf-in.)

2. INDOOR UNIT

(1) Attach the adapter before connecting pipe.



(2) Tighten the adapter.
When the adapter is tightened properly by your hand, use a torque wrench to finally tighten it.



⚠ CAUTION

① **Hold the torque wrench at its grip, keeping it in the right angle with the half-union of indoor unit, in order to tighten the adapter correctly.**

② **Ensure to use a spanner and a torque wrench to avoid the damage of piping of indoor unit side.**

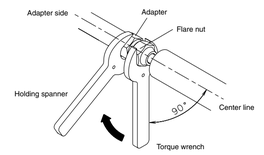
Adapter tightening torque

Adapter type	Tightening torque
6.35 mm (1/4 in.) → 9.52 mm (3/8 in.)	16 to 18 N·m (142 to 159 lbf-in.)

(3) Centering the pipe against port on the indoor unit, turn the flare nut with your hand.



(4) Tighten the flare nut.
When the flare nut is tightened properly by your hand, use a torque wrench to finally tightening it.



⚠ CAUTION

① **Hold the torque wrench at its grip, keeping it in the right angle with the pipe, in order to tighten the flare nut correctly.**

② **Ensure to use a spanner and a torque wrench to avoid the damage of piping of indoor unit side.**

③ **Tighten the flare nut to avoid the loosing of tightened adapter.**

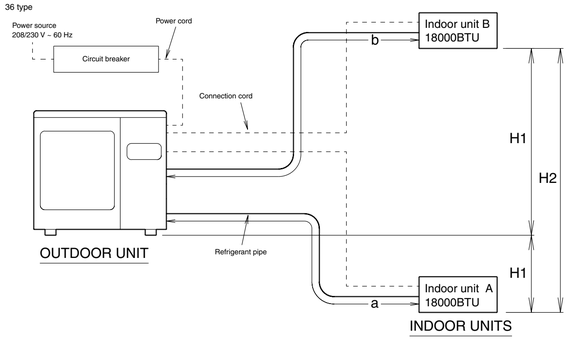
Flare nut tightening torque

Flare nut	Tightening torque
9.52 mm (3/8 in.)	32 to 42 N·m (283 to 372 lbf-in.)
12.7 mm (1/2 in.)	49 to 61 N·m (434 to 540 lbf-in.)

SYSTEM LAYOUT

Layout example for the indoor units and outdoor unit

36 type



1. CONNECTABLE INDOOR UNIT CAPACITY TYPE

⚠ CAUTION

- **Piping size shall be varied with this option kit in case of following 2 rooms connection.**
- **Two rooms connections except the combination in below table are out of guarantee.**
- **Other indoor unit cannot be installed after installation of 18000BTU and 18000BTU.**

UNIT A	UNIT B	UNIT C	UNIT D
AS18	AS18	NONE	NONE
	AR18		
	AU18		
AR18	AS18	NONE	NONE
	AR18		
	AU18		
AU18	AS18	NONE	NONE
	AR18		
	AU18		

AS : WALL MOUNTED TYPE
AR : DUCT TYPE
AU : CASSETTE TYPE

2. LIMITATION OF REFRIGERANT PIPING LENGTH

⚠ CAUTION

The total maximum pipe lengths and height difference of this product are shown in the table.
If the units are further apart than this, correct operation cannot be guaranteed.

Total max. length (a+b)	40 m (131 ft)*1)
Max. length for each indoor unit (a or b)	25 m (82 ft)
Max. height difference between outdoor unit and each indoor unit (H1)	15 m (49 ft.)
Max. height difference between indoor units (H2)	10 m (33 ft)
Min. length for each indoor unit (a or b)	7.5 m (25 ft)
Total min. length (a+b)	15 m (49 ft)

*1 If the total piping is longer than 20 m (65 ft), additional refrigerant charging is necessary. (For more information, refer to "3. ADDITIONAL CHARGE AMOUNT".)

3. ADDITIONAL CHARGE AMOUNT

Refrigerant suitable for a total piping length of 65 ft. is charged in the outdoor unit at the factory. When the piping is longer than 65 ft., additional charging is necessary.
For the additional amount, see the table below.
For additional charging, refer to installation manual of outdoor unit.

Total piping length	20 m (65 ft.)	30 m (98 ft.)	40 m (131 ft.)	
Additional refrigerant	None	250 g (8.9 oz)	500 g (17.8 oz)	25 g/m (0.27 oz/ft.)

PART NO. 9380501008