

# CONVERSION ADAPTER KIT FOR AOU36RLXFZH, AOU45RLXFZ INSTALLATION MANUAL

English

PART No. 9380501046-01

For authorized personnel only.  
Installation manual for the AOU36RLXFZH, AOU45RLXFZ [24 + (7 or 9 or 12 or 15) dual-zone combination]

## SAFETY PRECAUTIONS

### 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 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 compressor oil (or equivalent) used for the outdoor unit 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".

### WARNING

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.

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.

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.

### CAUTION

For the air conditioner to operate satisfactorily, install it as outlined in this installation manual. Connect the indoor unit and outdoor unit with the air conditioner piping and cables available standards parts. This installation manual describes the correct connections using the installation set available from our standard parts.

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

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

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.

- Be careful not to scratch the air conditioner when handling it.
- All Fujitsu General products are manufactured to metric units and tolerances. United States customary units are provided for reference only. In cases where exact dimensions and tolerances are required, always refer to metric units.

## 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.

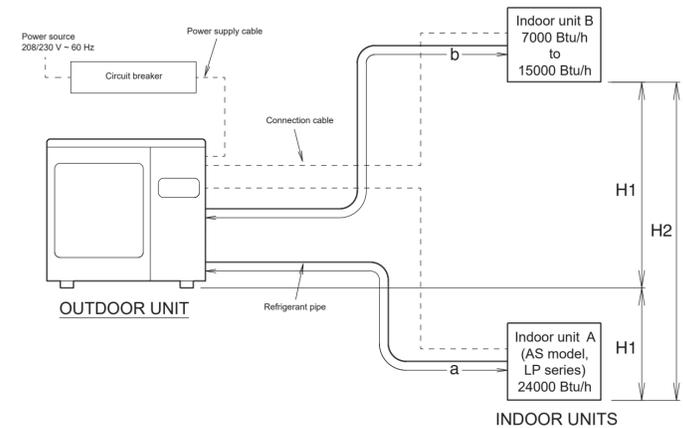
AOU36RLXFZH			
		Indoor air intake	Outdoor air intake
Cooling	Maximum	90 °F DB	115 °F DB
	Minimum	64 °F DB	50 °F DB
Heating	Maximum	88 °F DB	75 °F DB
	Minimum	60 °F DB	-15 °F DB

AOU45RLXFZ			
		Indoor air intake	Outdoor air intake
Cooling	Maximum	90 °F DB	115 °F DB
	Minimum	64 °F DB	14 °F DB
Heating	Maximum	88 °F DB	75 °F DB
	Minimum	60 °F DB	5 °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.

## SYSTEM CONFIGURATION

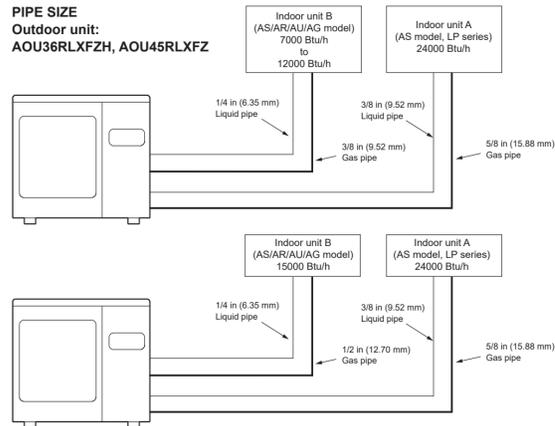
LAYOUT example for the indoor units and outdoor unit



**CAUTION**  
Additional multi-zone combination. These are the instructions for installing the AOU36RLXFZH, AOU45RLXFZ with two indoor units refrigeration lines only. For instructions on installing the indoor unit and outdoor unit refer to their installation manual respectively.  
Connectible capacity of two 24000 Btu/h indoor unit (AS model, LP series) on port A and from 7000 Btu/h to 15000 Btu/h indoor units (AS, AR, AU and AG models) on port B only. 24000 Btu/h indoor unit (AS model LP series) should be connected to port A.

### PIPE SIZE

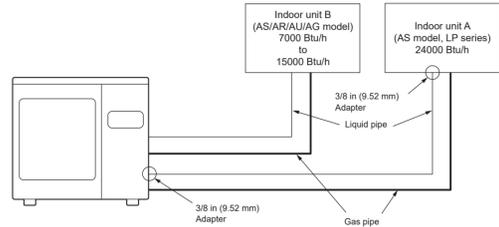
Outdoor unit:  
AOU36RLXFZH, AOU45RLXFZ



## STANDARD PARTS

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

Name and Shape	Q'ty	Use
Adapter Assy 1/4 in (6.35 mm) → 3/8 in (9.52 mm)	2	Used in two locations: to connect to port A of outdoor unit and to connect to half union liquid pipe of AS model LP series (24000 Btu/h).



## 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 manual included with the indoor unit.
  - To install an outdoor unit, refer to the installation manual 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".

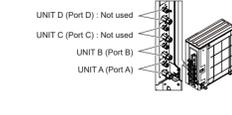
Port	Outdoor unit		Connection Requirements (Indoor unit model)	Connection pipe	
	Standard port size	Size of adapter (About the adapter)		Outside diameter	Minimum thickness
D	Liquid 1/4 in (6.35 mm)	not available	—	not available	not available
	Gas 3/8 in (9.52 mm)			not available	not available
C	Liquid 1/4 in (6.35 mm)	not available	—	not available	not available
	Gas 3/8 in (9.52 mm)			not available	not available
B	Liquid 1/4 in (6.35 mm)	none	7/9/12	1/4 in (6.35 mm)	1/16 in (0.80 mm)
	Gas 3/8 in (9.52 mm)	3/8 in (9.52 mm) → 1/2 in (12.70 mm) [Included in outdoor unit]	15	3/8 in (9.52 mm)	1/16 in (0.80 mm)
A	Liquid 1/4 in (6.35 mm)	1/4 in (6.35 mm) → 3/8 in (9.52 mm) [This product]	24	3/8 in (9.52 mm)	1/16 in (0.80 mm)
	Gas 1/2 in (12.70 mm)	1/2 in (12.70 mm) → 5/8 in (15.88 mm) [Included in outdoor unit]		5/8 in (15.88 mm)	1/16 in (0.80 mm)

Port	Outdoor unit		Connection Requirements (Indoor unit model)	Connection pipe	
	Standard port size	Size of adapter (About the adapter)		Outside diameter	Minimum thickness
E	Liquid 1/4 in (6.35 mm)	not available	—	not available	not available
	Gas 3/8 in (9.52 mm)			not available	not available
D	Liquid 1/4 in (6.35 mm)	not available	—	not available	not available
	Gas 3/8 in (9.52 mm)			not available	not available
C	Liquid 1/4 in (6.35 mm)	not available	—	not available	not available
	Gas 3/8 in (9.52 mm)			not available	not available
B	Liquid 1/4 in (6.35 mm)	none	7/9/12	1/4 in (6.35 mm)	1/16 in (0.80 mm)
	Gas 1/2 in (12.70 mm)	1/2 in (12.70 mm) → 3/8 in (9.52 mm) [Included in outdoor unit]	15	3/8 in (9.52 mm)	1/16 in (0.80 mm)
A	Liquid 1/4 in (6.35 mm)	1/4 in (6.35 mm) → 3/8 in (9.52 mm) [This product]	24	3/8 in (9.52 mm)	1/16 in (0.80 mm)
	Gas 1/2 in (12.70 mm)	1/2 in (12.70 mm) → 5/8 in (15.88 mm) [Included in outdoor unit]		5/8 in (15.88 mm)	1/16 in (0.80 mm)

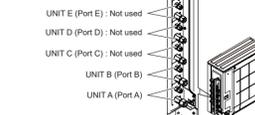
### CAUTION

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

### AOU36RLXFZH



### AOU45RLXFZ



### CAUTION

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

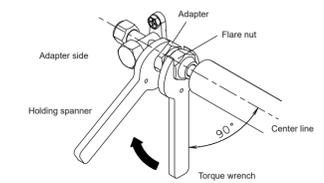
## 5. HEAT INSULATION AROUND CONNECTION PIPES REQUIREMENTS

### 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 "PIPE CONNECTION" in this installation manual.

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



### CAUTION

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

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

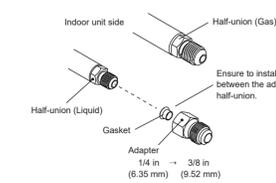
Tighten the flare nut to avoid the loosening of tightened adapter.

### Flare nut tightening torque

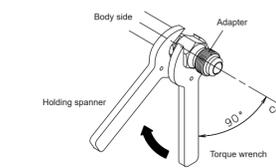
Flare nut	Tightening torque
1/4 in (6.35 mm)	141 to 159 lbf-in (16 to 18 N·m)
3/8 in (9.52 mm)	283 to 372 lbf-in (32 to 42 N·m)
1/2 in (12.70 mm)	434 to 540 lbf-in (49 to 61 N·m)
5/8 in (15.88 mm)	558 to 973 lbf-in (63 to 75 N·m)

## 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

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.

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

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



To prevent gas leakage, coat the flare surface with alkylbenzene oil (HAB). Do not use mineral oil.

## INSTALLATION WORK

### 1. PIPE CONNECTION

### CAUTION

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.

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

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

### 1. OUTDOOR UNIT

- (1) Detach the caps from the outdoor port.

### CAUTION

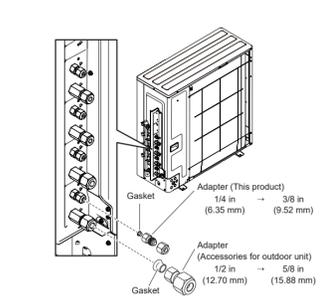
Be sure to install the pipe against the port on the indoor unit and outdoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.

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

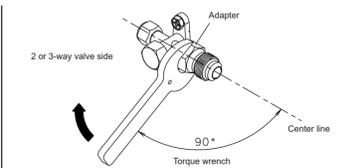
- (2) Attach the adapter before connecting pipe.

- 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 part of the outdoor unit where the adapter comes in.
- Use appropriate wrenches to avoid damaging the connection thread by overtightening the adapter.

(Example) When 2 indoor units are connected:  
24 model (AS type, LP series) + 07 model (AS type, LM series or AR type)  
Outdoor unit: AOU36RLXFZH



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



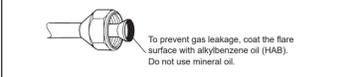
### CAUTION

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

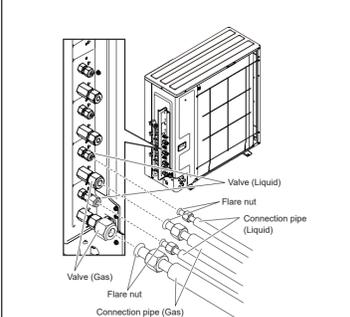
### Adapter tightening torque

Adapter type	Tightening torque
1/4 in (6.35 mm) → 3/8 in (9.52 mm)	142 to 159 lbf-in (16 to 18 N·m)
3/8 in (9.52 mm) → 1/2 in (12.70 mm)	283 to 372 lbf-in (32 to 42 N·m)
1/2 in (12.70 mm) → 5/8 in (15.88 mm)	433 to 973 lbf-in (49 to 61 N·m)

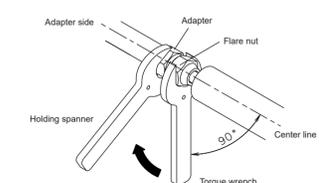
- (4) Centering the pipe against port on the outdoor unit, turn the flare nut with your hand.



- (5)



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



### CAUTION

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

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

Tighten the flare nut to avoid the loosening of tightened adapter.

### Flare nut tightening torque

Flare nut	Tightening torque
1/4 in (6.35 mm)	141 to 159 lbf-in (16 to 18 N·m)
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