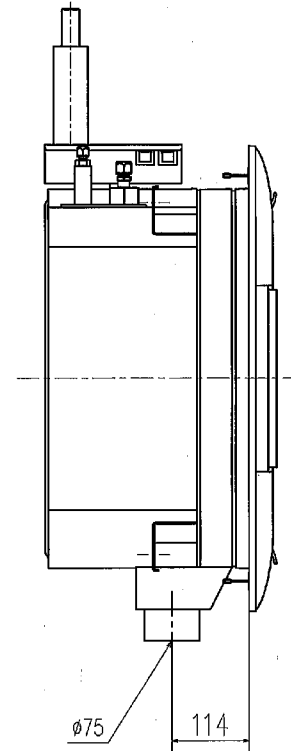
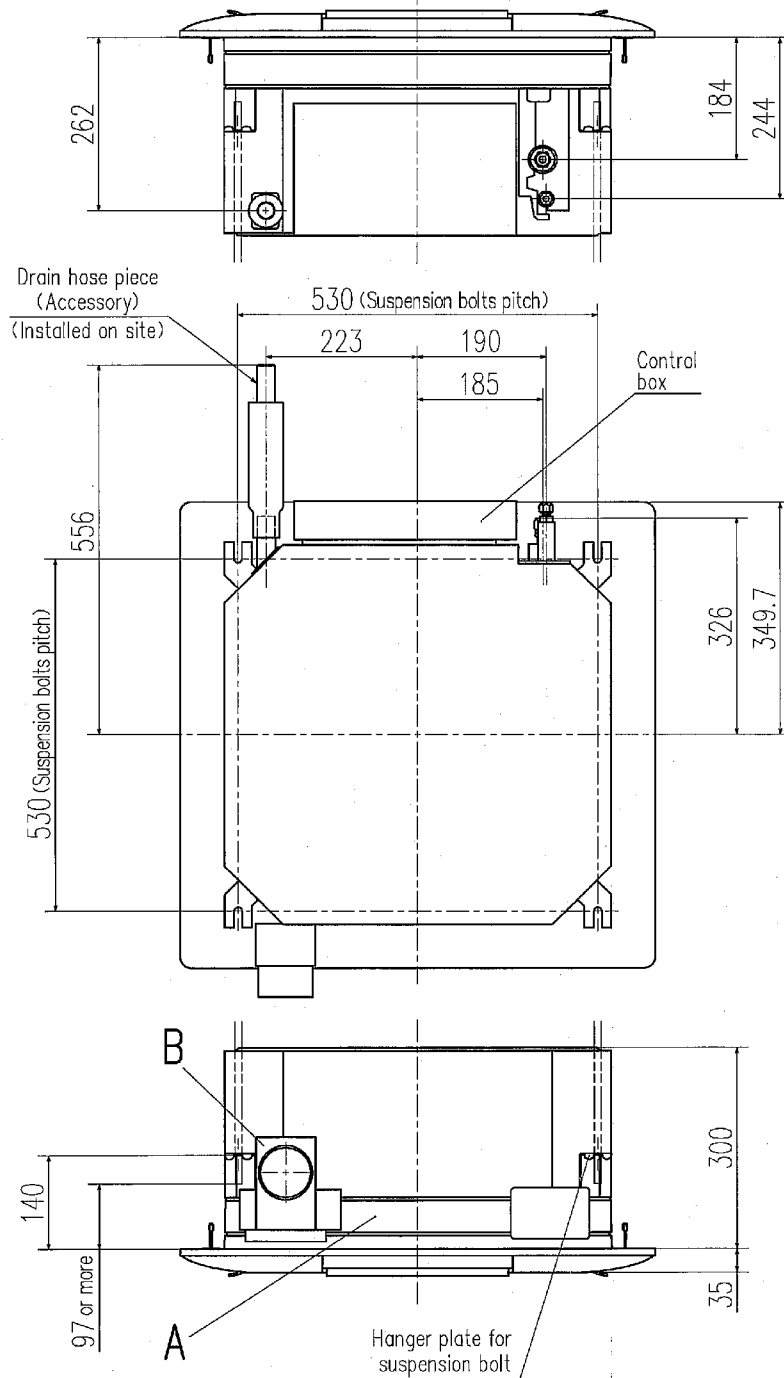


# OA SPACER OUTLINE (TC-OAS-E, TC-OAD-E)

Unit:mm

| Symbol | Content    |          |
|--------|------------|----------|
| A      | OA spacer  | TC-OAS-E |
| B      | Duct joint | TC-OAD-E |

Note (1) This drawing shows FDT unit attached with OA spacer (TC-OAS-E) and duct joint (TC-OAD-E).



# INSTALLATION INSTRUCTION OF OA SPACER FOR FDTC INDOOR UNIT

This manual describes the installation methods for OA spacer (TC-OAS-E) and the duct joint (TC-OAD-E).

◎ This OA spacer is designed for assembling on the indoor unit (FDTC Series), not for be using independently.

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|                   |   |
|-------------------|---|
| Application model | FDTCA151R, 201R, FDTCA22~56KXE4R, FDTC22~56KXE6<br>FDTC22~56KXE6A, FDTC22~56KXE6B, FDTC22~56KXE6D<br>FDTC40V, 50V, FDTC40~60VB, FDTC25~60VD |
|-------------------|---|

◎ Prepare the duct (size:  $\phi 75$ ) and the booster fan at site.

◎ For the installation of indoor unit, refer to the installation manual attached to the indoor unit.

## SAFETY PRECAUTIONS

- Read the "SAFETY PRECAUTIONS" carefully first of all and then strictly follow it during the installation work in order to protect yourself.

### WARNING

#### ● Installation should be performed by the specialist.

If you install the unit by yourself, it may lead to serious trouble such as water leakage, electric shock, fire, and injury due to overturn of the unit.

#### ● Install the system correctly according to these installation manuals.

Improper installation may cause explosion, injury, water leakage, electric shock, and fire.

#### ● Use the genuine accessories and the specified parts for installation.

If parts unspecified by our company are used it could cause water leakage, electric shock, fire, and injury due to overturn of the unit.

#### ● Turn off the power source during servicing or inspection work.

If the power is supplied during servicing or inspection work, it could cause electric shock and injury by the operating fan.

#### ● Shut off the power before electrical wiring work.

It could cause electric shock, unit failure and improper running.

### CAUTION

#### ● Do not install and use the unit where corrosive gas (such as sulfurous acid gas etc.) or flammable gas (such as thinner, petroleum etc.) may be generated or accumulated, or volatile flammable substances are handled.

It could cause the corrosion of heat exchanger, breakage of plastic parts etc. And inflammable gas could cause fire.

## 1 Before installation

- Confirm the following parts are included:

#### OA spacer (TC-OAS-E)

|        |           |           |           |           |      |
|--------|-----------|-----------|-----------|-----------|------|
| Spacer | Bracket 1 | Bracket 2 | Bracket 3 | Bracket 4 | Bolt |
|        |           |           |           |           |      |
| 1      | 2         | 2         | 2         | 2         | 8    |

#### Duct joint (TC-OAD-E)

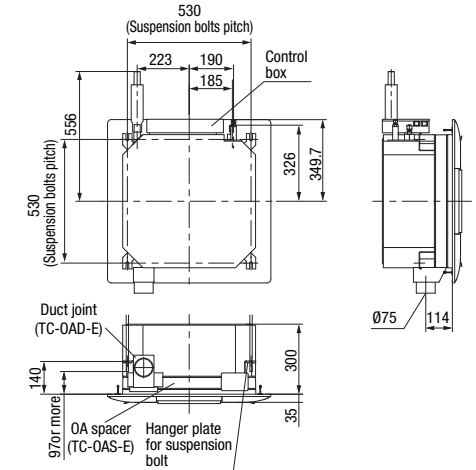
|            |       |                         |                        |
|------------|-------|-------------------------|------------------------|
| Duct Joint | Screw | Insulation 1 (120 × 54) | Insulation 2 (40 × 60) |
|            |       |                         |                        |
| 1          | 6     | 1                       | 2                      |

## 2 Prior study before installation (Usage limitation)

### (1) Temperature conditions for OA spacer

- Adjust the temperature conditions of mixed air with outdoor air and indoor air within the usage range of suction air temperature for the air conditioner.
- The usage temperature conditions of intake outdoor air and indoor air around the ducts are shown in the following table.
- If the temperature conditions of intake outdoor air do not meet, process the outdoor air before intaking.

| Operation mode | Usage temperature conditions         |  |
|----------------|--------------------------------------|--|
|                | Intake outdoor air                   | Indoor air around the ducts            |
| In heating     | 5°C DB or higher                     | 18.5°C WB or lower and 60% RH or lower |
| In cooling     | 29°C DB or lower and 80% RH or lower | 20°C DB or higher                      |



### (2) Intake outdoor air volume

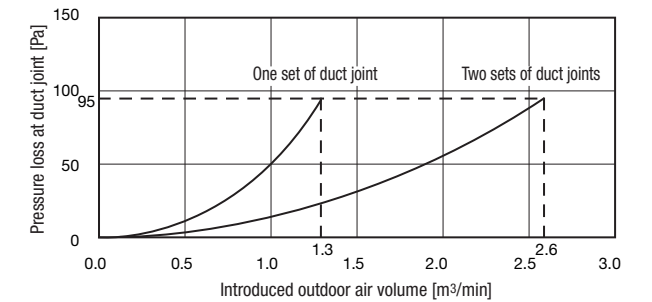
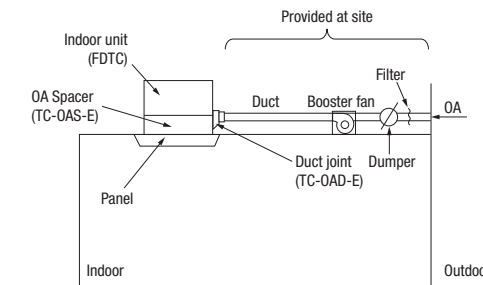
- Intake outdoor air volume is 2.6 m<sup>3</sup>/min at the maximum (when two sets of duct joints are used). Up to two sets of duct joint can be installed on OA spacer.
- In case one set of duct joint is installed: 1.3 m<sup>3</sup>/min max.
- In case two sets of duct joint is installed: 2.6 m<sup>3</sup>/min max.

### (3) Selection of booster fan

- Select the booster fan based on the duct resistance plus the pressure loss at the duct joint. (See the figure)

### (4) Other conditions

- Determine the capacity of air conditioner based on the calculation of air conditioning load including the heat load of intake outdoor air.
- Install the filter for the intake outdoor air and the reverse flow prevention damper during the duct work at site.
- Insulate the duct and duct joint in order to prevent dewing.
- Interlock the operation of booster fan with ON/OFF operation of the indoor unit. (See Section 7.)

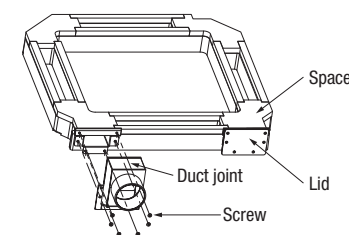


## 3 Installation of duct joint (TC-OAD-E) onto OA spacer

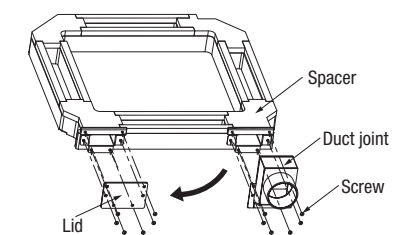
- There are two places where the duct joint can be installed.

#### When installing one duct joint

Install OA spacer at either one of two installation places on the duct joint.

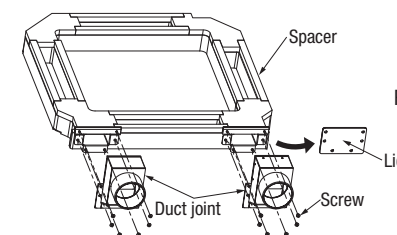


To install the duct joint, screw it in as shown at left.



When installing the duct joint at the lid side, remove the lid and reinstall it at the other end before installing the duct joint.

#### When installing two duct joints



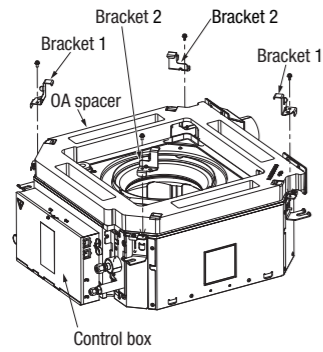
Remove the lid and then install two pieces of duct joint.

## ④ Installation of OA spacer on the indoor unit

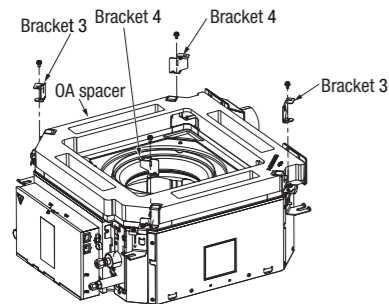
OA spacer can be installed regardless whether the indoor unit has already been hanged or not.  
(It is recommended to install before hanging the unit for convenience of installation.)

### 1-1. When installing OA spacer before hanging the indoor unit

- Placing OA spacer on the indoor unit, fix the brackets 1 and 2 (2 pieces each) with bolts.  
Install OA spacer in the appropriate position that the duct joint side of OA spacer becomes opposite to the control box of indoor unit (FDTC).



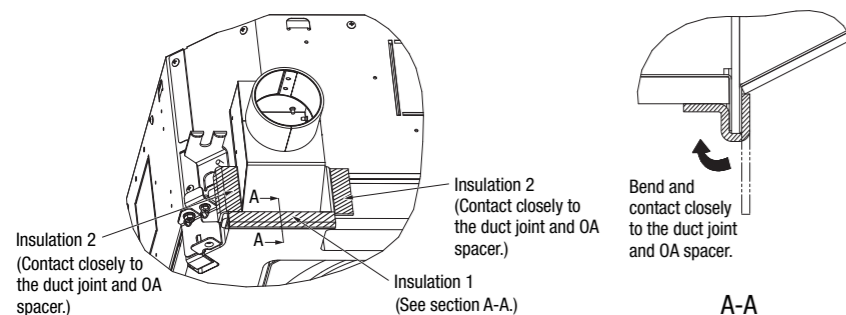
- Fix the brackets 3 and 4 (2 pieces each) with bolts.



### 2. Applying insulation

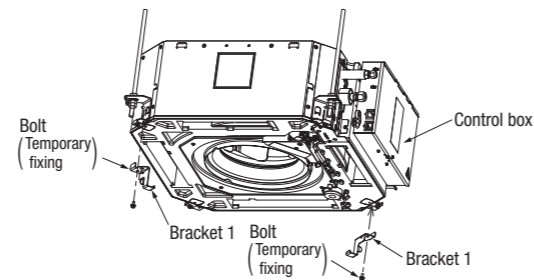
Applying the insulation attached to duct joint set (TC-OAD-E)

- Applying the insulation 1 as shown in the figure.
  - Applying the insulation 2 as shown in the figure.
- \* Be sure to cover the entire surface of sheet metal of the duct joint with the insulation.

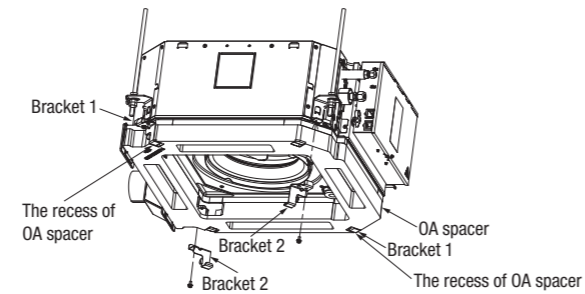


### 1-2. When installing OA spacer after hanging the indoor unit

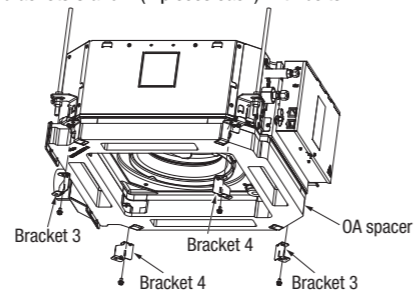
- After hanging the indoor unit (\*), fix the bracket 1 (2 pieces) temporarily with bolt by 2 turns as shown in the figure.  
\* For the height (position) of hanging the indoor unit, refer to Section 5.



- Install OA spacer.
  - Install it in the way that the recess of OA spacer will fit on the bracket 1 fixed temporarily at the step ①.
  - Tighten the bolt of bracket 1.
  - Fix the bracket 2 with bolt. (Tighten up)



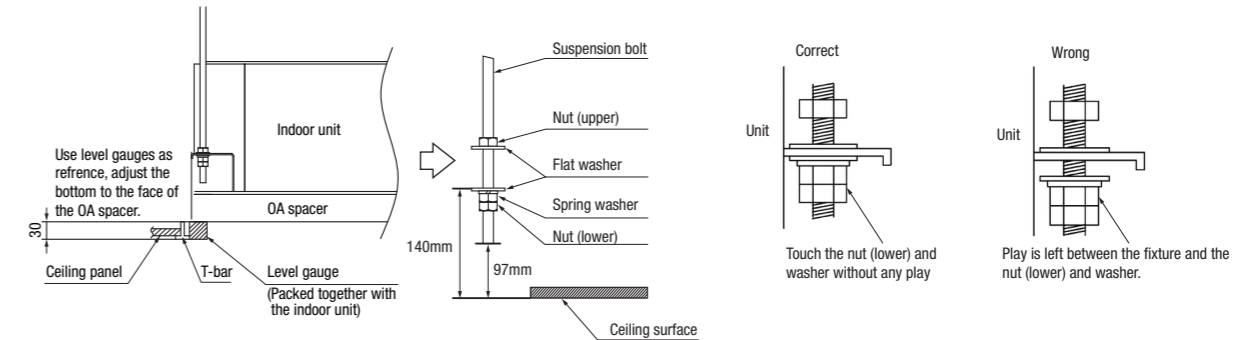
- Fix the brackets 3 and 4 (2 pieces each) with bolts.



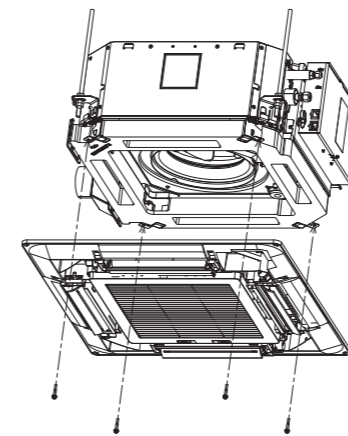
## ⑤ Installation of indoor unit

### Work procedure

- This unit is designed for 2 x 2 grid ceiling.  
If necessary, please detach the T bar temporarily before you install it.  
If it is installed on a ceiling other than 2 x 2 grid ceiling, provide an inspection port on the control box side.
- Arrange the suspension bolt at the right position (530mm x 530mm).
- Make sure to use four suspension bolts and fix them so as to be able to hold 500N load.
- Ensure that the lower end of the suspension bolt should be 97mm above the ceiling plane. Temporarily put the four lower nuts 140mm above the ceiling plane and the upper nuts on distant place from the lower nuts in order not to obstruct hanging the indoor unit or adjust the indoor unit position, and then hang the indoor unit.
- Adjust the indoor unit position after hanging it by inserting the level gauge (Packed together with the indoor unit.) attached on the package into the air supply port and checking if the gap between the ceiling plane and the indoor unit is appropriate. (\*) In order to adjust the indoor unit position, adjust the lower nuts while the upper nuts are put on distant place. Confirm there is no backlash between the hanger plate for suspension bolt and the lower nut and washer.  
\* Use the level gauge only when OA spacer has been installed before hanging (④ 1-1 only).



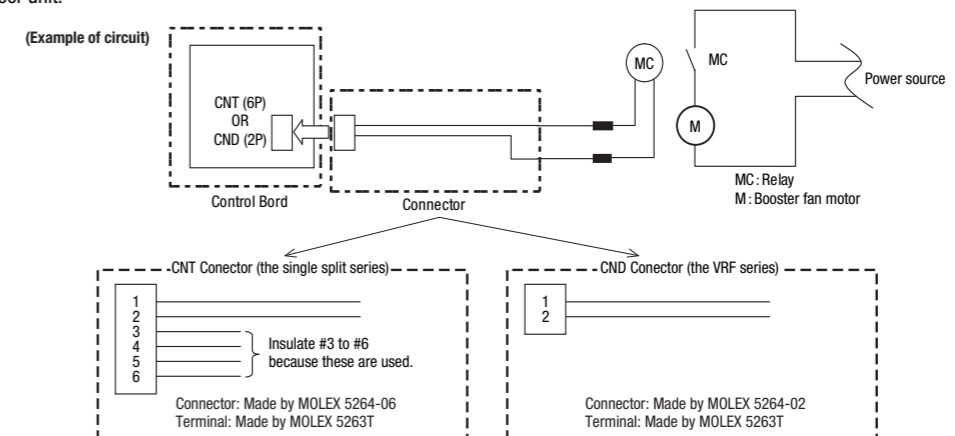
## ⑥ Installation of panel



Tighten the panels to the brackets 3 and 4 with bolts.  
For further details, refer to the installation manual of panel.  
(Caution) Connect the connector of lower motor within the control box.

## ⑦ Interlocking with the indoor unit fan

- Connect the Single split series and the VRF series to CNT on the indoor PCB and to CND on the indoor PCB respectively. If a ventilation device is connected, be geared with the motion of indoor device (ON: DC12V output, OFF: 0V output), the ventilation device is operated/stopped.
- Set it at "VENT LINK" by selecting "No. 11 VENT LINK SET" from the Functional setting by Remote Controller. For details, refer to the "ELECTRIC WIRING WORK INSTRUCTION" of indoor unit.



(Caution) Although the indoor unit fan stops during the defrosting or oil return operation, the booster fan is operating.  
Use a total heat exchanger, if necessary.

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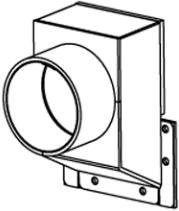

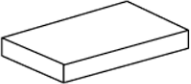



# DUCT JOINT FOR FDTC

● This product is used by assembling on the spacer (TC-OAS-E)

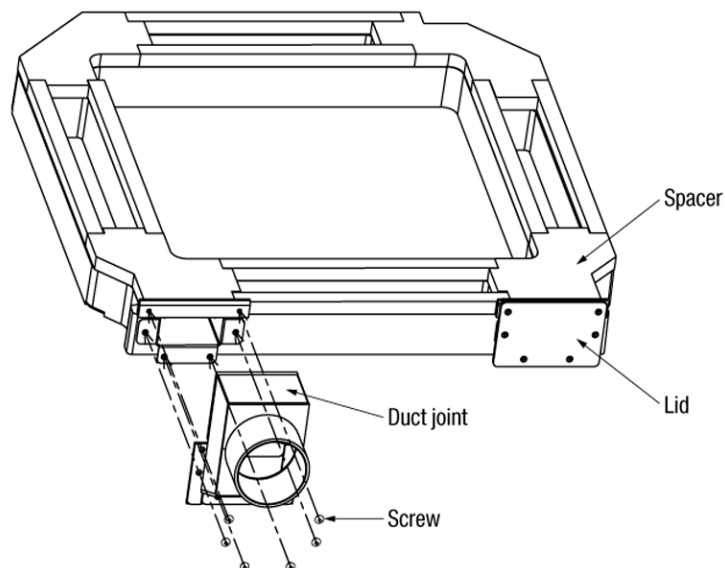
## 1. Before installation

- Confirm the following parts are included:

| Duct joint  | Screw   | Insulation 1<br>(120 × 54)   | Insulation 2<br>(40 × 60)   |
|---|---|--|---|
|  |  |  |  |
| 1   | 6   | 1  | 2   |

## 2. Regarding the use of this product

- Fix the product on the spacer (TC-OAS-E) as shown below.
- For the installation method, refer to the installation manual of the spacer.





# Range of usage & limitations

## 1. Temperature conditions for OA spacer.

- Adjust the temperature conditions of mixed air with outdoor air and indoor air within the usage range of suction air temperature for the air conditioner.
- The usage temperature conditions of intake outdoor air and indoor air around the ducts are shown in the following table.
- If the temperature conditions of intake outdoor air do not meet, process the outdoor air before intaking.

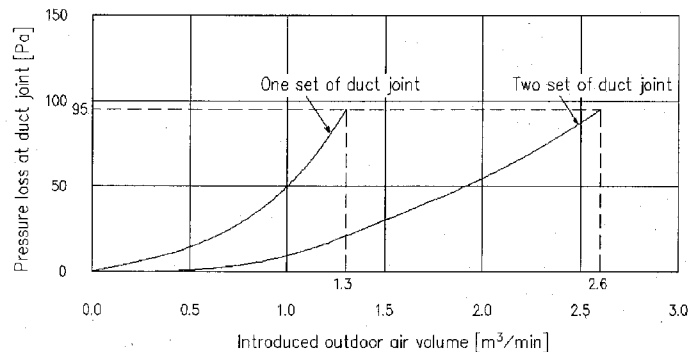
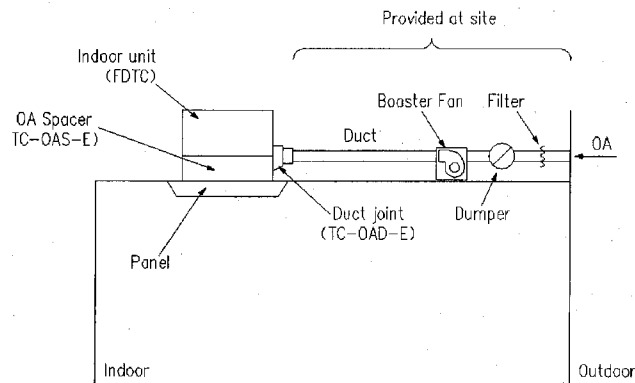
| Operation mode | Usage temperature conditions          |   |
|----------------|---------------------------------------|---|
|                | intake outdoor air                    | indoor air around the ducts             |
| In heating     | 5° C DB or higher                     | 18.5° C WB or lower and 60% RH or lower |
| In cooling     | 29° C DB or lower and 80% RH or lower | 20° C DB or higher                      |

## 2. Intake outdoor air volume

- Intake outdoor air volume is 2.6 m<sup>3</sup>/min at the maximum (when two sets of duct joints are used).
- Up to two sets of duct joint can be installed on OA spacer.
- In case one set of duct joint is installed : 1.3 m<sup>3</sup>/min max.
- In case two sets of duct joint is installed : 2.6 m<sup>3</sup>/min max.

## 3. Selection of booster fan

- Select the booster fan based on the duct resistance plus the pressure loss at the duct joint. (See the figure below.)



## 4. Other conditions

- Determine the capacity of air conditioner based on the calculation of air conditioning load, including the heat load of intake outdoor air.
- Install the filter for the intake outdoor air and the reverse flow prevention damper during the duct work at site.
- Insulate the duct and duct joint in order to prevent dewing.
- Interlock the operation of booster fan with ON/OFF operation of the indoor unit