

# Instruction Manual

## Lineset Cover System SLIMDUCT SD

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## 1. Precaution - Before you install SLIMDUCT®SD.

**This product is lineset cover system. Do not use this for other purposes.**



**If the following precaution will not be executed, the users may suffer damages.**

- Wear safety gear such as working clothes, helmet, and gloves whenever installing SLIMDUCT®SD. Besides, wear protective goggles or similar gears to prevent eyes from dust when cutting SLIMDUCT®SD by hacksaw or else.
- Be careful not to cut hands when cutting straight ducts or fittings.
- Be sure to have sound footing when working at high places.

**If the following precautions will not be executed, the expected functions and performance of the product may not be demonstrated.**

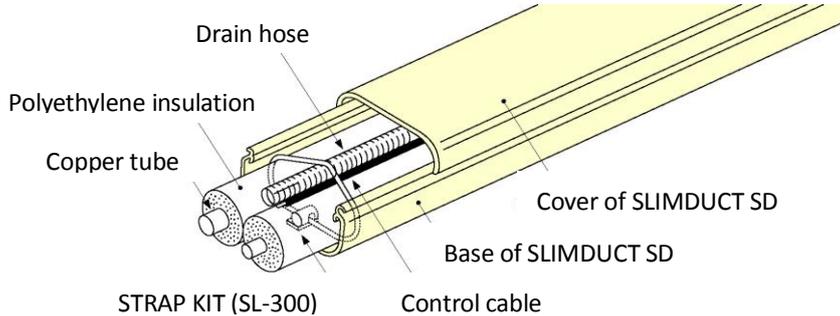
- SLIMDUCT®SD is not waterproof. There should be waterproof treatment required for the place where there is a possibility of water invasion. Especially at the wall penetration part, please carry out waterproof treatment by such caulking or putty treatment for the place of connection and seam part, penetration part, wall installation part, screw hole, etc. Even at horizontal installation, carry out the similar treatment for the place where there is a possibility of water invasion and for the necessary place of waterproof.
- SLIMDUCT®SD is suitable for use and storage within a temperature range of -20°C-60°C (-4°F-140 °F). Deformation by heat may occur at temperatures exceeding 60°C (140°F). For information in details, refer to **3. About heat deformation on SLIMDUCT®SD.**
- Please use pan head screw with washer faced head. If fixed by flat head or countersunk screw, products might be damaged.
- Pay attention carefully when fixing a screw by impact screwdriver. It may cause damage to products. (Torque screwdriver is recommended for fixing.) Do not use impact screwdriver when fixing especially onto uneven wall surface because of a possibility for damage to products.
- Be sure to fix pipes by saddles such as STRAP KIT SL-300.
- Pay attention not to apply too much stress when tightening a fixing saddle because there might be dew condensation occurred if insulation is damaged. STRAP KIT SL-300 is designed to fix pipes inside of SLIMDUCT®SD. Do not use it for fixing exposed linesets outside nor for fixing cables.
- Attach END FITTING (SE/SEN) to prevent the cover of straight duct from sliding.
- Bending angle for FLEXIBLE ELL (SF) shall be 90°max for flat bending and 45°max for vertical bending (for passing on frieze board). It cannot be used for bigger bending angle for passing on such a parapet.
- There are some cases that WALL INLET for Aftermarket Add-ons (SWA) cannot be used depending on the pipes installation situation. Please check site condition for use.
- SLIMDUCT®SD has a construction that the cover of straight duct will not be disconnected easily even by an external force because straight duct is held by fittings on both ends and fixed by screw. In case that the cover of straight duct shall be prevented from disconnection by a rush of wind on such multistoried high-rise apartment, fix the saddle band made of stainless steel onto the base and the

cover of straight duct at the center part of each straight duct.

- In severe winter season, cut straight ducts after making them warm due to a possibility of break.

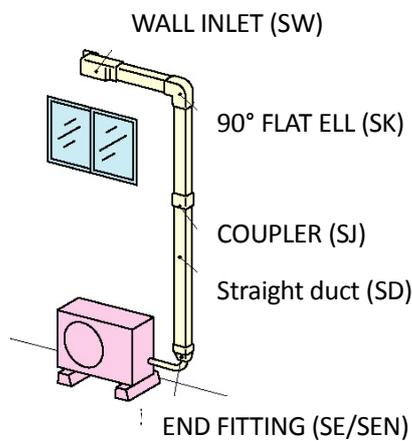
## 2. Installation manual

### 2-1. Example of pipes storage

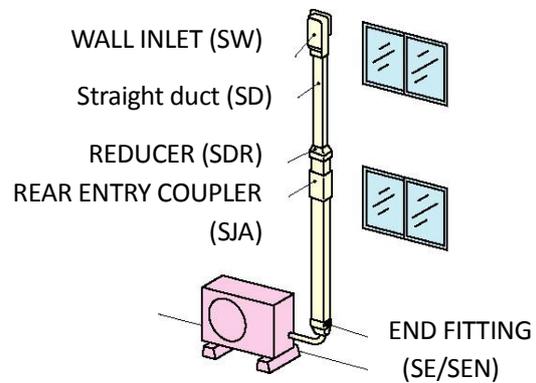


**NOTE: Control cable/wire can be accommodated in SLIMDUCT SD.**

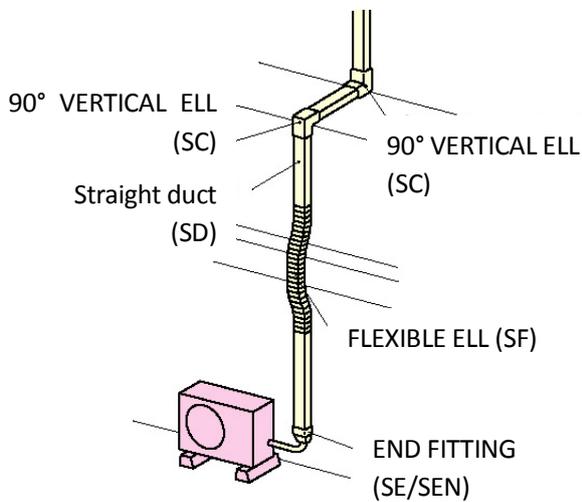
### 2-2. Example of applications



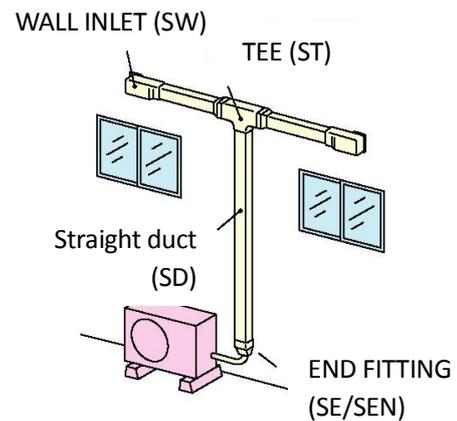
Basic application



Vertical multiple run application



Application for obstacles

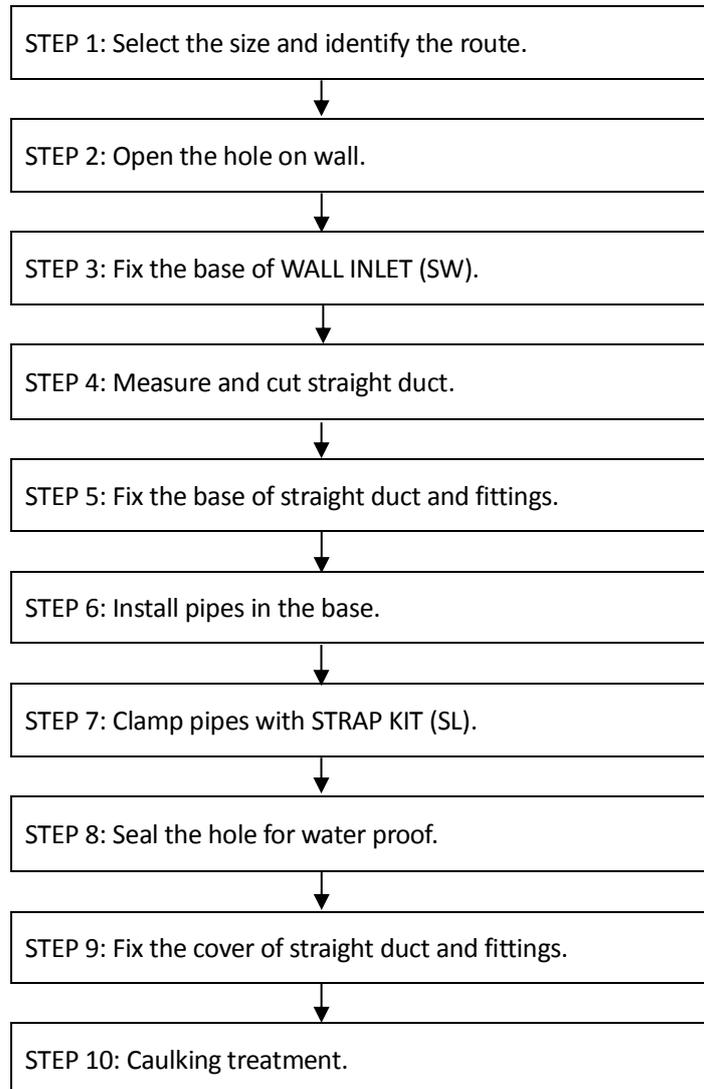


Horizontal multiple run application

### 2-3. Installation procedure

Installation procedure for SLIMDUCT®SD shown below.

SLIMDUCT®SD is suitable for use and storage within a temperature range of -20°C-60°C (-4°F-140 °F).



**STEP 1: Select the size and identify the route.**

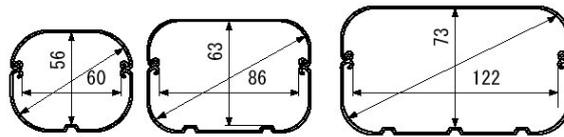
(1) Select the size of SLIMDUCT®SD to install for linesets.

| Item # | Insulation thickness | Lineset size (Liquid line x Suction line) |            |            |            |            |            |              |              |              |              |              |              |              |  |
|--------|----------------------|---|------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
|        |                      | 1/4"x 3/8"                                | 1/4"x 1/2" | 1/4"x 5/8" | 3/8"x 5/8" | 3/8"x 3/4" | 3/8"x 7/8" | 1/2"x 1 1/8" | 5/8"x 1 1/8" | 5/8"x 1 1/4" | 3/4"x 1 1/4" | 3/4"x 1 1/2" | 7/8"x 1 1/2" | 7/8"x 1 5/8" |  |
| SD-77  | 1/2" x 1/2"          | 1   | 1          | -          | -          | -          | -          | -            | -            | -            | -            | -            | -            | -            |  |
|        | 3/4" x 3/4"          | -   | -          | -          | -          | -          | -          | -            | -            | -            | -            | -            | -            | -            |  |
| SD-100 | 1/2" x 1/2"          | 1   | 1          | 1          | 1          | 1          | 1          | 1            | 1            | 1            | 1            | 1            | 1            | 1            |  |
|        | 3/4" x 3/4"          | -   | -          | -          | -          | -          | -          | -            | -            | -            | -            | -            | -            | -            |  |
| SD-140 | 1/2" x 1/2"          | 3   | 2          | 2          | 2          | 1          | 1          | 1            | 1            | 1            | 1            | 1            | 1            | 1            |  |
|        | 3/4" x 3/4"          | 1   | 1          | 1          | 1          | 1          | 1          | 1            | 1            | -            | -            | -            | -            | -            |  |

\* Includes Drain Hose (O.D. 7/8) and Power/Control Cables.

In case of other linesets combination, select the size for SLIMDUCT®SD, referring to the dimensions described below;

Diagonal:      SD-77      SD-100      SD-140  
                     76 (3")      99 (4")      135 (5 3/8")



Unit : mm (inch)

Cross section of SLIMDUCT®SD

(2) Identify the entire piping route.

This will make selecting necessary items easy and reduce working time on site.

Note: Make horizontal piping sloped to prevent drain water from backward flow, following the manual of air conditioning unit manufacturers.

**STEP 2: Open the hole on wall.**

To pass pipes through wall, open the hole according to drill diameter.

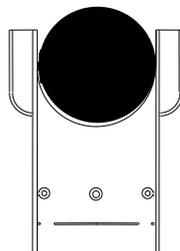
Diameter of through hole

| Item#  | Drill Diameter |
|--------|----------------|
| SD-77  | φ70 or less    |
| SD-100 | φ100 or less   |
| SD-140 | φ135 or less   |

Unit: mm

**STEP 3: Fix the base of WALL INLET (SW).**

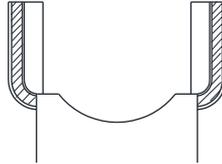
Check an angle and fix the base of WALL INLET (SW) by a screw, positioning at the hole on wall.



NOTE: Use pan head screw with washer faced head of  $\phi 3.5\text{mm}$  or  $\phi 4.0\text{mm}$  for wall fixing. If fixed by flat head or countersunk screw, product might be damaged. Pay attention carefully when fixing a screw by impact screwdriver. Too much stress might damage to product. For installation on brick wall, mark the location for each screw, and drill an anchor hole using a masonry bit, then use appropriate anchors and screws.

SW-77 and SW-100 have groove at its base for calking treatment.

Be sure to attach the base of SW-77 and SW-100 on wall after applying calking on shaded area of below picture.



#### STEP 4: Measure and cut straight duct.

Identify the piping route and mark the cut point on straight duct, setting the base of straight duct onto the base of WALL INLET (SW). Then, cut the base and the cover of straight duct by saw or our recommended SLIMDUCT cutter.

| Brand  | Product name    | Item#  |
|--------|-----------------|--------|
| Victor | SLIMDUCT Cutter | VD2100 |

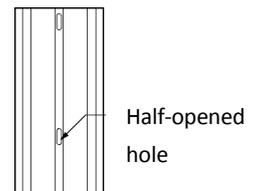
NOTE: Refer to the manual and precaution before using the cutter.

To prevent ducts from cracking at low temperatures, cut ducts slowly or after heating ducts with hot air.

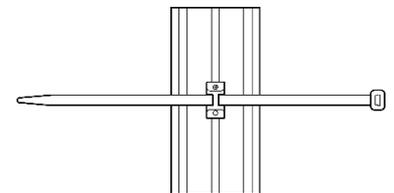
#### STEP 5: Fix the base of straight duct and fittings.

Push out the half-opened hole on the base of straight duct, using a screwdriver or else.

The point of half-opened hole shall be 3 at the top, at the bottom, and at the middle per one straight duct. The interval of each hole shall be within 1 meter (39").



Setting the base of straight duct onto the base of WALL INLET (SW), fix a screw temporary at the top hole and set straight duct vertically. Then, fix screws at remaining holes together with fixing saddle.



NOTE: Use pan head screw with washer faced head of  $\phi 3.5\text{mm}$  or  $\phi 4.0\text{mm}$  for wall fixing.

If fixed by flat head or countersunk screw, product might be damaged.

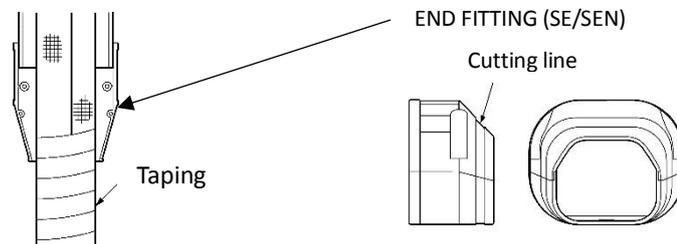
Pay attention carefully when fixing a screw by impact screwdriver. It may cause damage to products. (Torque screwdriver is recommended for fixing.)

Do not use impact screwdriver when fixing especially onto uneven wall surface because of a possibility for damage to products.

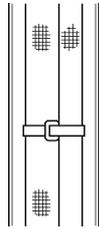
**STEP 6: Install pipes in the base.**

Paying attention not to get twisted, install linesets, drain hose and cables in the base of SLIMDUCT®SD. Then, connect pipes to AC outdoor unit after wrapping tape on exposed pipes between END FITTING (SE/SEN) and AC outdoor unit.

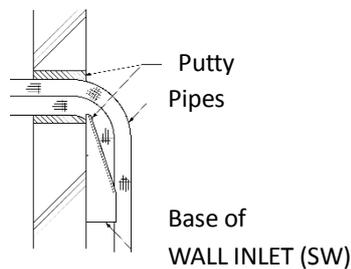
NOTE: Be careful not to make pipes kinked at corners.  
Do not make insulation deformed to prevent dew condensation.  
Cut END FITTING (SE/SEN) on cutting line if it is tight.

**STEP 7: Clamp pipes with STRAP KIT (SL).**

Fix the pipes by clamping pipes with STRAP KIT (SL).

**STEP 8: Seal the hole for water proof.**

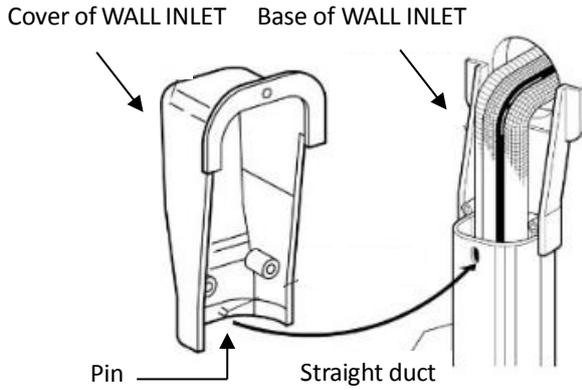
Fill up the gap between hole and pipes with putty.

**STEP 9: Fix the cover of straight duct and fittings.**

After setting the cover of straight duct onto its base, fix the cover of WALL INLET (SW), END FITTING, or other fittings onto the each base and wall surface.

Some fittings have a pin on back side of cover of them for preventing the cover of straight duct from sliding. When utilizing this pin, inset the pin into half-opened hole after pushing out this hole. When not using this pin, remove it before installing the cover of fittings. Otherwise, the gap will appear between the cover of straight duct and fittings.

For your safety, make sure to wear protective goggles and gloves even when cutting the pin.

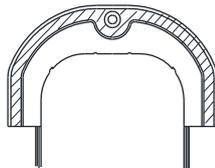


Check sheet for Pin

| Description                                     | Part Number | Size                            |          |              |
|---|-------------|---------------------------------|----------|--------------|
|   |             | 77(L)                           | 100      | 140          |
| Wall Inlet                                      | SW          | Included                        | Included | Not Included |
| Wall Inlet for A/C Cap                          | SWM(L)      | Included                        | Included | -            |
| Wall Inlet for A/C with Ventilation             | SWK         | Included                        | -        | -            |
| Wall Inlet for A/C cap and A/C with Ventilation | SWX(L)      | 77:Included<br>77L:Not Included | -        | -            |
| 90° Flat Ell                                    | SK          | Included                        | Included | Not Included |
| Coupler   | SJ          | Included                        | Included | Not Included |

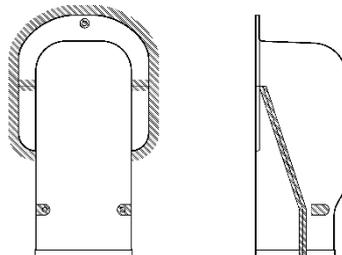
SW-77 and SW-100 have groove at its cover for calking treatment.

Be sure to attach the cover of SW-77 and SW-100 on wall after applying calking on shaded area Of below picture.



**STEP 10: Caulking treatment.**

SLIMDUCT®SD is not waterproof. There should be waterproof treatment required for the place where there is a possibility of water invasion. Especially at the wall penetration part, please carry out waterproof treatment by such caulking or putty treatment for the place of connection and seam part, penetration part, wall installation part, screw hole, etc. Even at horizontal installation, carry out the similar treatment for the place where there is a possibility of water invasion and for the necessary place of waterproof.



### 3. About heat deformation on SLIMDUCT®SD

A few cases of heat deformation on SLIMDUCT®SD happen in a year. As there seems a tendency that such heat deformation occurs on the piping installations especially in the horizontal direction, refer to the following precautionary points.

#### (1) What is heat deformation.

SLIMDUCT®SD is made of resin and it would start softening and deformation when temperature on its surface exceeds 60°C (140 °F). Especially in the condition with a load applied, it would sometimes start softening even at the lower temperature than 60°C (140 °F).

#### (2) Temperature on SLIMDUCT®SD

Temperature on SLIMDUCT®SD is determined by such as the ambient temperature and the radiant heat by direct sunlight. Temperature on it would become so much higher, receiving the radiant heat of sunlight especially if there is such a metal hood located around SLIMDUCT®SD.

#### (3) Precautionary points

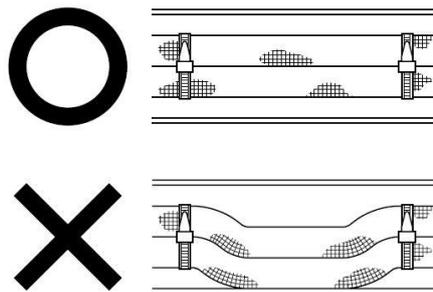
- For storage

Avoid the storage where ambient temperature becomes higher than the softening/deformation temperature of material such as in a car shut tightly under a blazing sun. Besides, do not keep the products in the condition with a load applied.

- For installation

- Horizontal installation

Not to apply the stress to straight duct by deflection and meandering of pipes, fix pipes by STRAP KIT (SL). We recommend to fix at least 2 points for 2 meter (78") length straight duct. Besides, shorten the horizontal piping length outdoor as much as possible.



- General installation

- Avoid an installation where the duct temperature becomes higher by the radiant heat at the edge of eaves finished by metallic materials.
- Avoid an installation on heat storage wall and on wall painted by heat insulation paint where the duct temperature is expected to become higher by radiant heat.
- Avoid an installation in the poorly ventilated narrow space and around the heat generating equipment where the duct temperature is expected to become higher.