

Installation recommendations

CDU-S

CDU-M

CDU-L

1. Handling
2. Environment of the installation
3. Piping and evaporator positioning

Oct 2021

100% CO₂ Condensing units

ECO-FRIENDLY REVOLUTION

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CDU-S, CDU-M, CDU-L

1. Handling

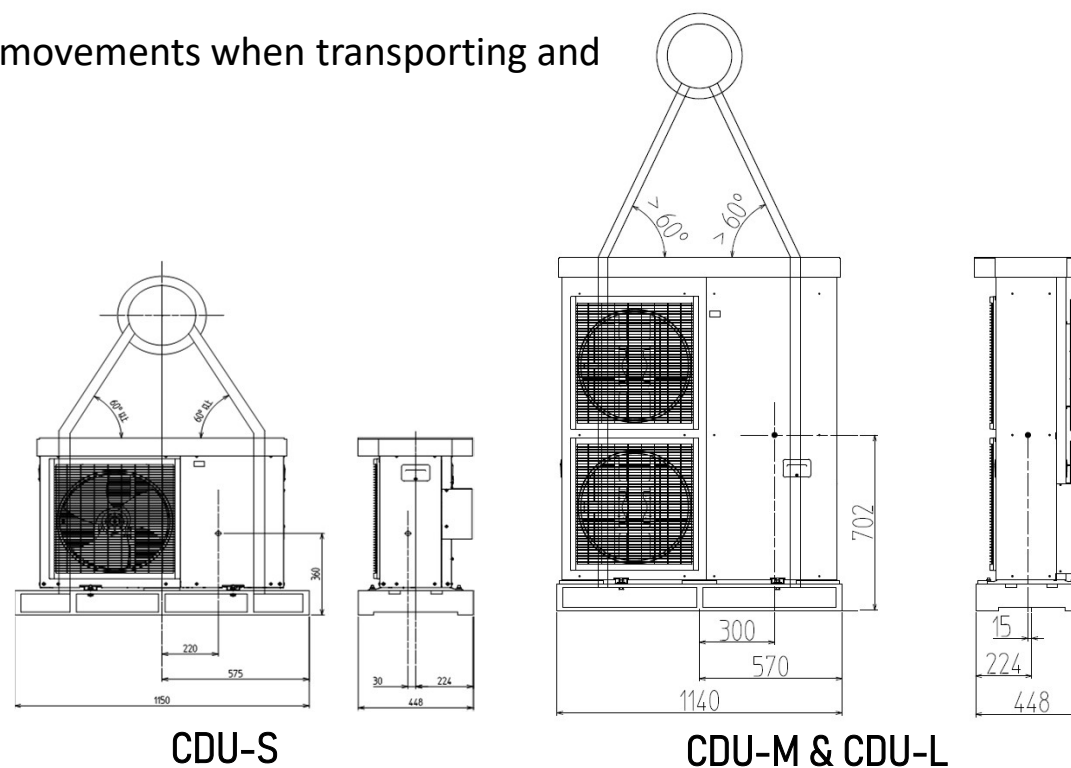
When raising the condensing unit, always observe the following safety precautions:

1. Protect any parts that are in contact with hoisting ropes, e.g. with cardboard.
2. Do not pass beneath the condensing unit when it is raised
3. Weight: Please check the table below. **Warning** : This product's weight is not evenly distributed



In particular, take care to avoid any shocks and sudden movements when transporting and raising the equipment.

		Product weight(kg)	Total weight with packaging (kg)	Packaging dimensions (mm)
CDU-S	R02A1B	57	65	1140 x 445 x H795
	R02A1D	58	70	1140 x 390 x H840
CDU-M	R04A1B	107	117	1140 x 445 x H1425
	R04A1C	113	123	1140 x 390 x H1430
CDU-L	R06A2B	135	145	1140 x 445 x H1425
	R06A2C	141	151	1140 x 390 x H1430



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2.1 Environment of the installation

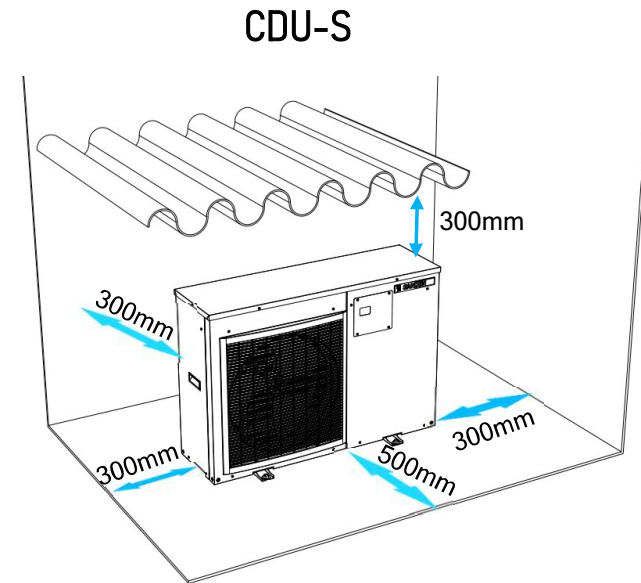
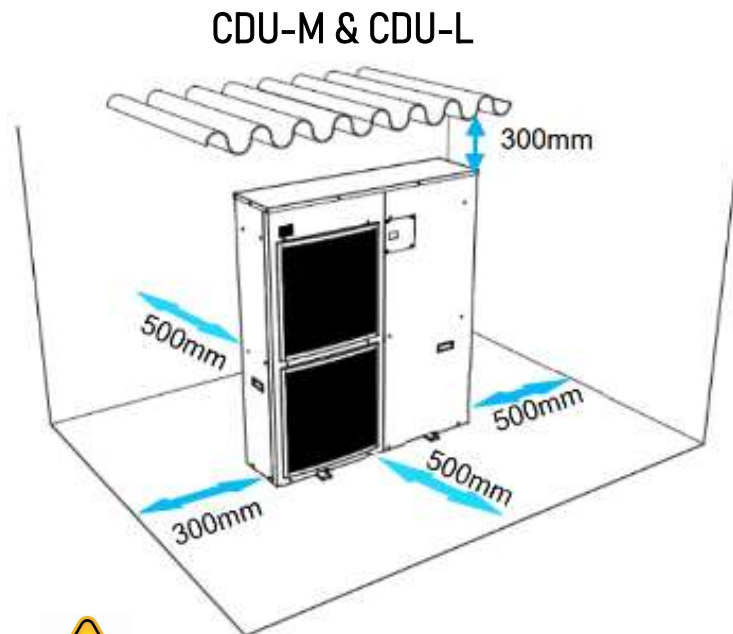
Always consider the following information for choosing the place where the CDU will be located



Condensing units are designed to be installed and to run outside

1. If the air suction and discharge ports are too small, the air flow will be insufficient to ensure the condensing unit's correct performance, which may cause it to fail.

In addition, sufficient space must be provided around the unit to facilitate its maintenance and inspection. Please provide the following free space around the equipment.



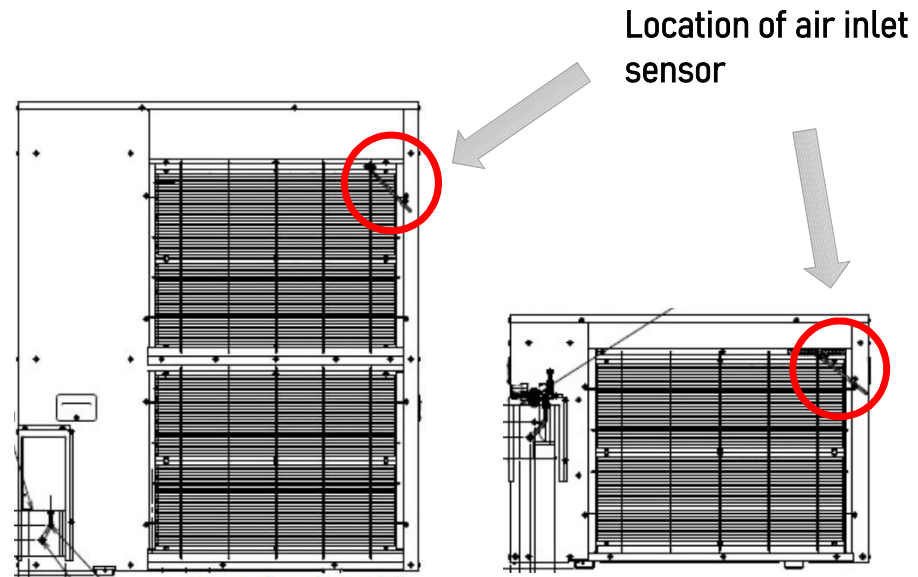
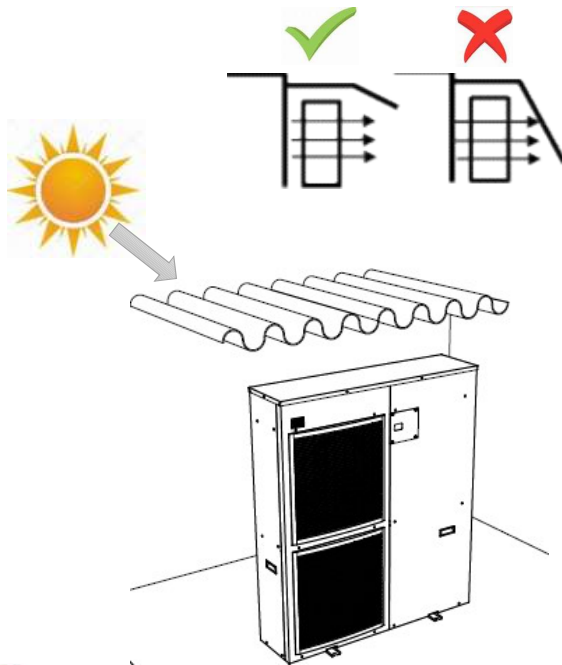
Let enough space on the top of the CDU to allow the opening of the top panel

CDU-S, CDU-M, CDU-L

2.2 Environment of the installation

2. Place the equipment in a location sheltered from direct sunlight, heat sources and cold wind. If exposing the equipment to direct sunlight is unavoidable, protect the air inlet sensor located at the back of the unit (to the top right of the gas cooler).

 Protection of condensing unit from sunlight without disrupting air flow



2.3 Environment of the installation

3. Securely attach the condensing unit and perform any foundation work required

- Attach the unit on dedicated concrete floor by using anchor bolts;
- Directly on the floor by using floor mounting blocks (big foot);
- On the wall by using wall mounting devices.
- carrier frame on roof terrace

 **Warning: The CDU installation must respect the services space around and above the unit.**

4. Choose a location where the sound emissions generated by the refrigeration unit will not disturb the immediate neighbors. The noisiest parts are the sides and the rear of the unit.

5. The air outlet must not lead directly to residential windows or plantations.


6. Place the equipment in a location where dust and debris do not risk being sucked into the evaporator fans.

7. In regions where significant snowfalls occur, always place the equipment under a roof, a shelter or a snow-proof porch roof.

8. Choose a location that is protected from strong headwinds that could oppose the direction of ventilation fans.

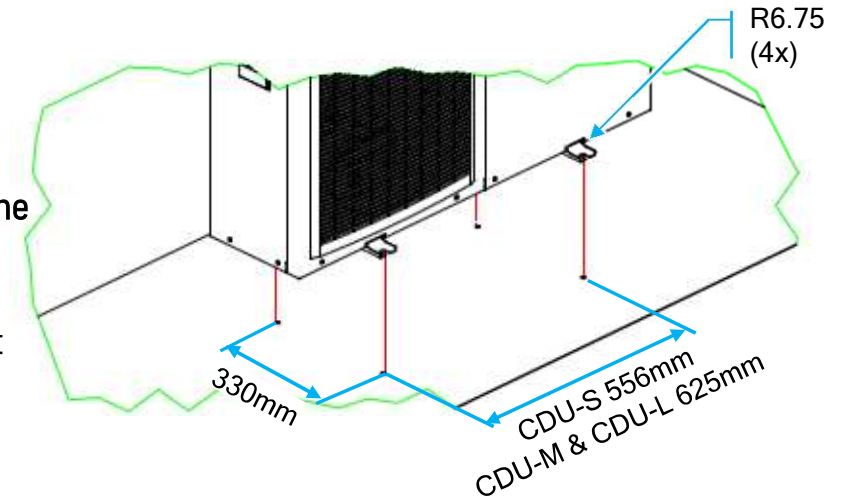
9. Avoid places exposed to oily splashes, salt (coastal region) or sulphide gases near hot springs).

10. If the CDU is installed indoors, choose a sufficiently large, dry and well-ventilated place


 **Ensure air renewal of 4000m³/h for a CDU-L and 2000m³/h for a CDU-S**

11. In the event where the equipment is installed near a device producing electromagnetic waves, the condensing unit's electrical enclosure must be relocated or shielded from the electromagnetic field.

12. To avoid any interference, the condensing unit must be installed at a minimum distance of 3 m from any device producing or receiving electromagnetic waves (e.g. radio).



3.1 Piping and evaporator positioning

 **Reminder :** The evaporator volume is limited to 5 liters for a Low Temperature & 15 liters for a Medium Temperature installation.
For piping length, please refer to the dedicated model guide.

1. Piping:

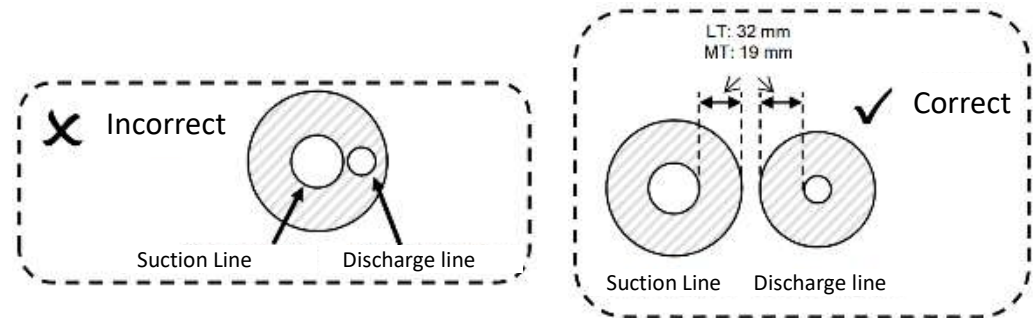
	Diameter	MWP [bar]
Discharge HP	1/4" to 3/8"	>120 bar
Suction LP	3/8"	>90 bar

2. Piping insulation is necessary


- 19mm Medium Temperature (Positive)
- 32mm Low Temperature (Negative)

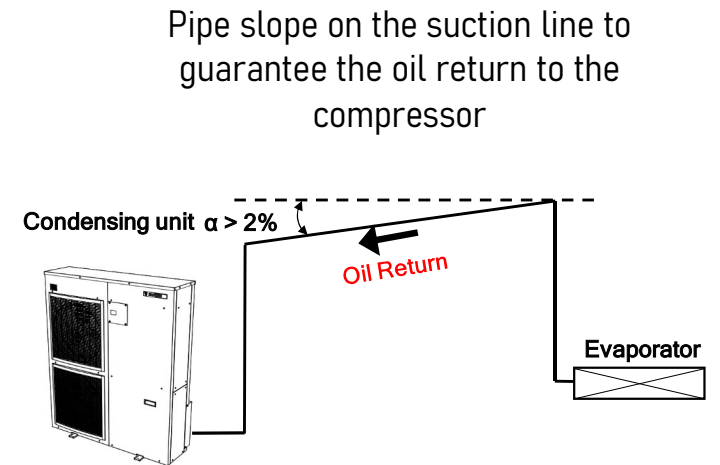
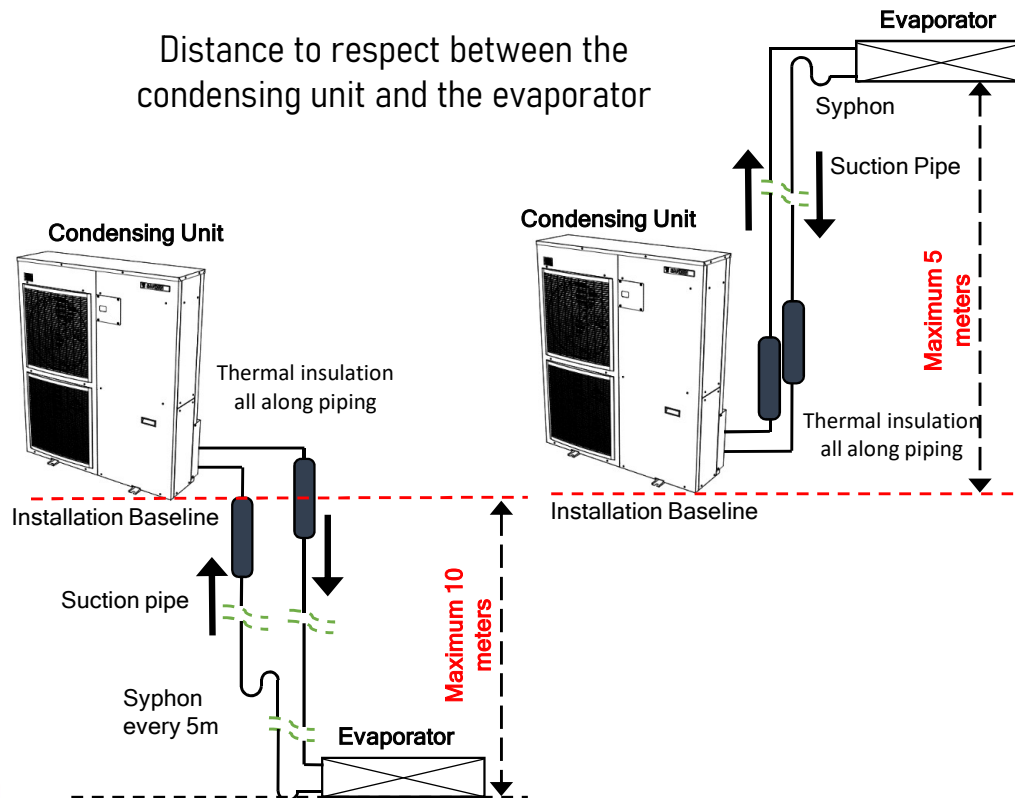
3. Avoid contact between CO2 piping and other tube connection.
Avoid contact between suction line and discharge line

4. Do not install in a corrosive environment



3.1 Piping and evaporator positioning

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3.2 Drier installation

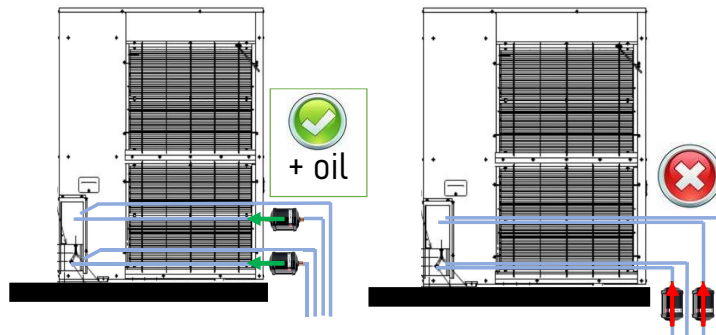
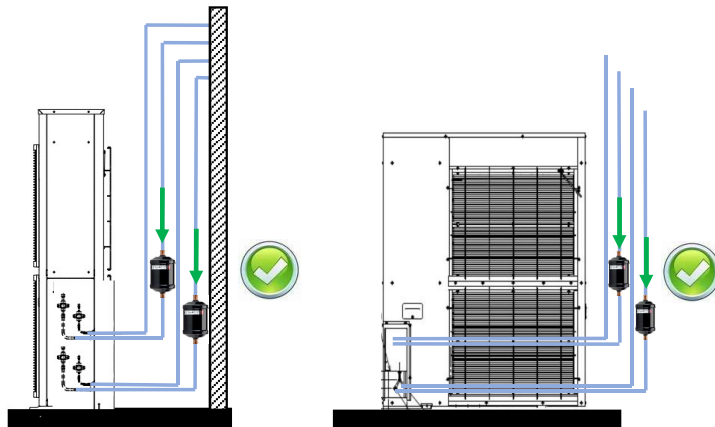


Installation of a drying filter on the suction line

- CDU-L : 2 cold loops, → 2 driers, → **Installation Mandatory**
- CDU-M : 1 single cold loop, → 1 drier, → **Installation Mandatory**
- CDU-S : 1 single cold loop, → 1 drier, → **Installation recommended**

The validated drier model is the reference DANFOSS DMT083S (manufacturer ref 023Z8409)

-For transcritical R744 application (up to 140bar) / diameter 65mm / length 110mm / 3/8" connection to be soldered



- **Respect the flow direction of the refrigerant in the drier.**
Properly isolate the drier after installation (50mm)
- **Install the drier only on the suction line of the condensing unit.**



Preferably install the drier in a vertical position, with the flow direction of the refrigerant descending from the top to the bottom. Closest to the unit.



If the installation described in the previous point is not possible, install the drier in the horizontal position and add 80cc of PZ68-S oil



Do not install the drier in ascending flow.