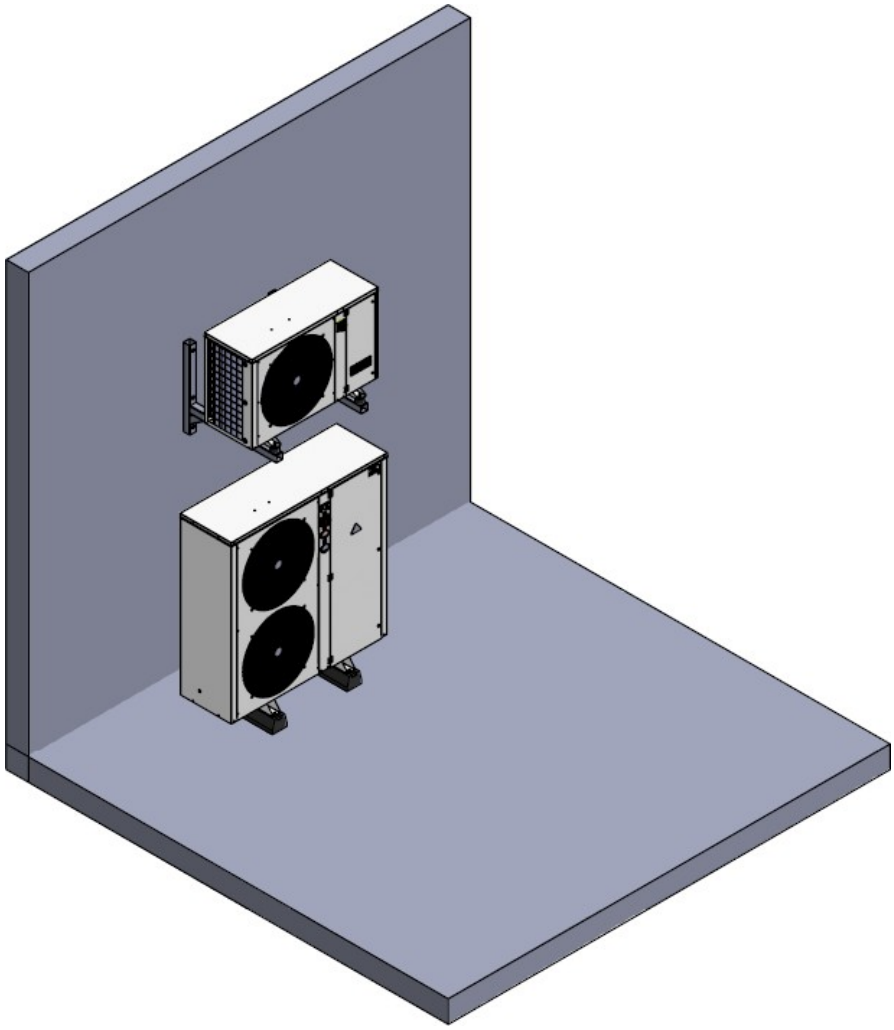
INSTALLATION INSTRUCTIONS FOR AIR-COOLED CONDENSING UNITS

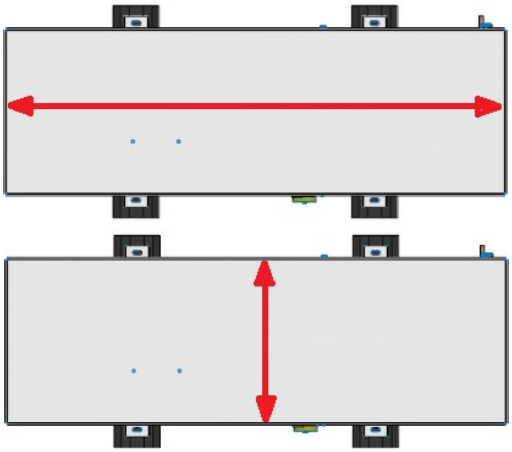


Condensing units must be installed in accordance with the manufacturer's instructions, paying special attention to:

a/ Load bearing capacity of the floor with respect to the weight of

the unit b/ Leveling of the unit

- The maximum permissible inclination in both planes is equal to 10 mm/m.



c/ The strength of bolted or welded steel structures must be supported by calculations.

- The steel frame must not deform after the unit is placed on it. d/ Limiting

excessive exposure to sunlight

- It is recommended to mount the unit on the north or east side.
- If it is not possible to mount the unit on the north or east side, it is recommended to install the unit under a roof.
- Installation on large roof surfaces is not recommended, particularly those covered with materials that strongly absorb solar radiation (e.g. black felt).

e/ Piping and support

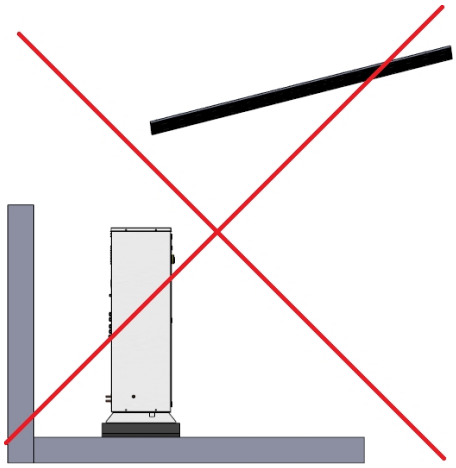
- The required distances between pipe supports depend on the pipe size, according to the following table:

Tube outside diameter (d)	Maximum distance between supports
d ≤ 1/2"	1 metre
1/2" < d ≤ 7/8"	2 metres
7/8" < d ≤ 2 1/8"	3 metres
2 1/8" < d ≤ 2 2/8"	4 metres

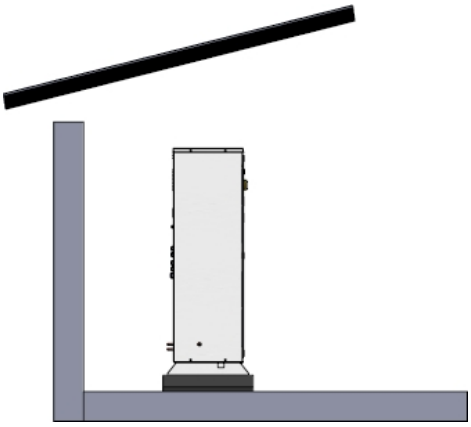
- When the evaporator is located higher than the condensing unit, it is necessary that the suction line has a slope of approximately 0.5% towards the unit.
- When the evaporator is located lower than the condensing unit, it is necessary that the suction line has a slope of approximately 0.5% towards the unit and that oil traps are used.
- It is necessary to insulate the suction pipe with a suitable lining.
- In the case of CO2 systems (R-744) it is also necessary to insulate the liquid piping.

f/ Exposure of the unit to rainfall

- The slope of the roof has to ensure the proper functioning of the unit, especially during snowfall.



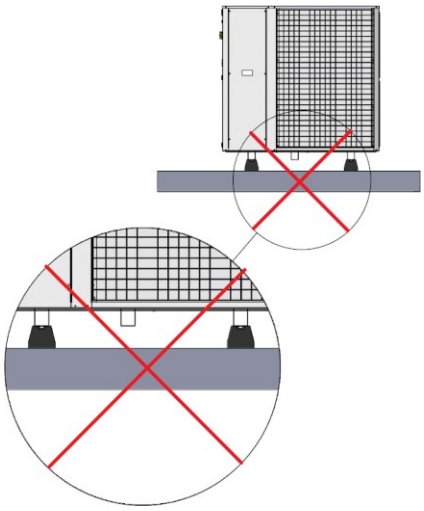
Incorrect positioning in relation to the roof can lead to the formation of a blizzard near the unit.



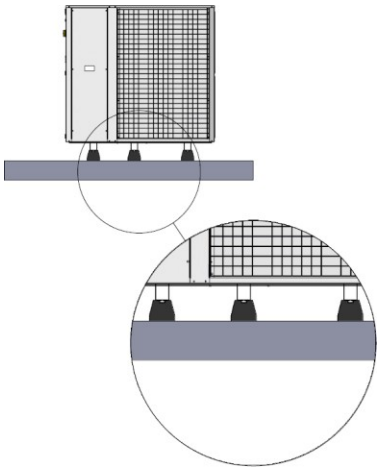
The roof protects the unit against the accumulation of a possible blizzard.

g/ Unit weight distribution on the ground

- It is necessary to support the unit on each foot, especially if there are three or more feet.



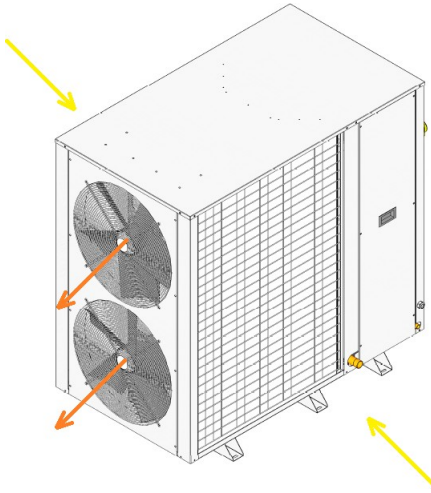
The unit's lack of support in any foot may cause damage to the unit and loss of refrigerant.



Supporting the unit on each foot provides stability

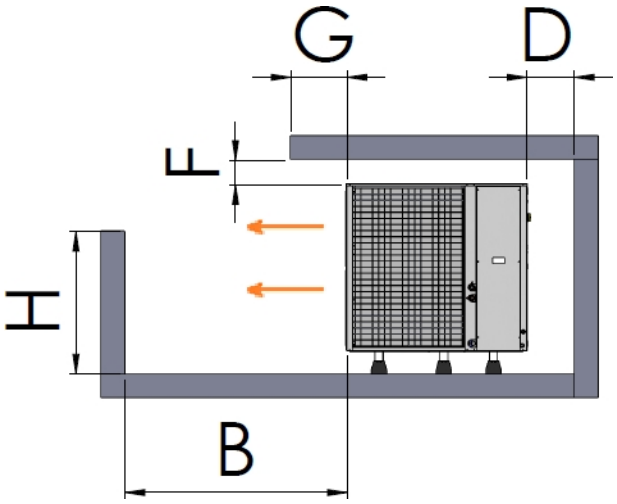
h/ Required distances from walls or partition walls

- Units with two capacitors

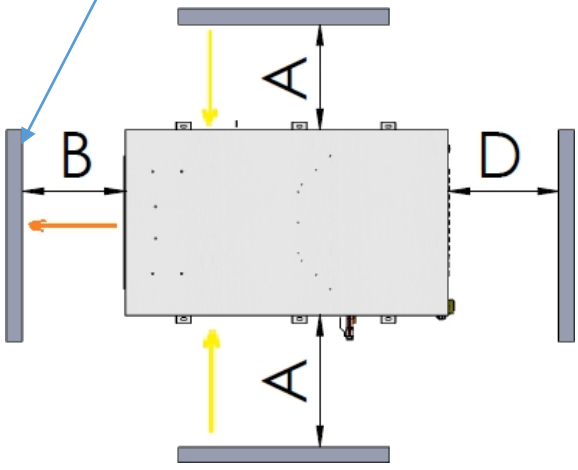


Four-way construction is only permitted if there is sufficient air flow, e.g. additional ventilation or a perforated partition wall.

From the side

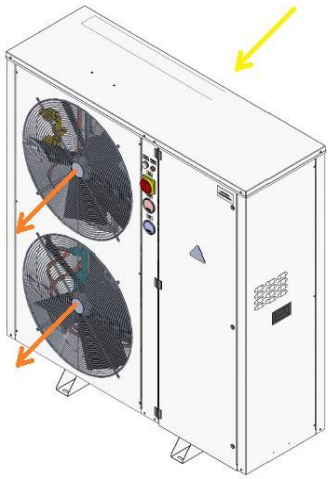


From above



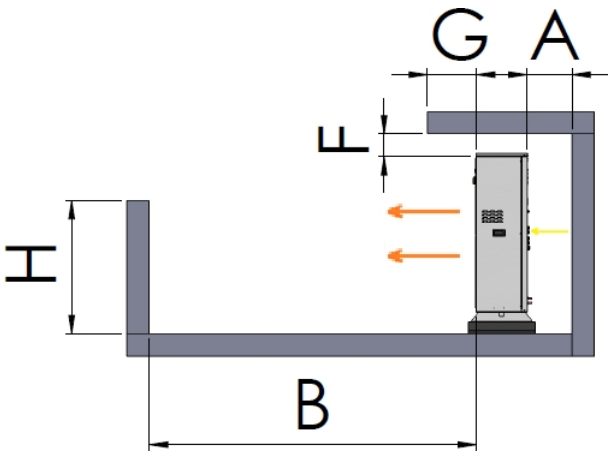
Dimensions	Values
A	Min. 400 mm
B	Min. 800 mm, but not less than the height of the unit * For a unit with vertical discharge fan: B = Min. 400 mm
D	Min. 800 mm
F	Min. 400 mm * For a unit with vertical discharge fan: F = Min. 800 mm, but not less than the height of the unit.
G	Max. 800 mm
H	Max. 1200 mm
Whenever the mounting location is determined, the service space of the unit must be taken into account in order to their repair and inspection.	

- Units with a capacitor

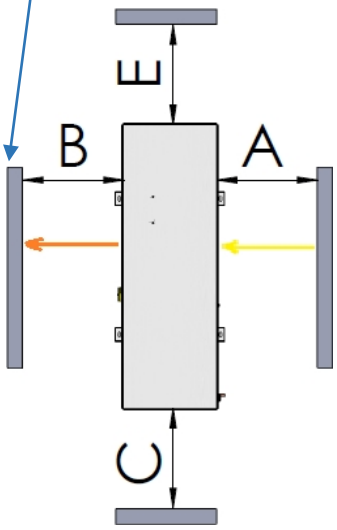


Four-way construction is only permitted if there is sufficient air flow, e.g. additional ventilation or a perforated partition wall.

From the side



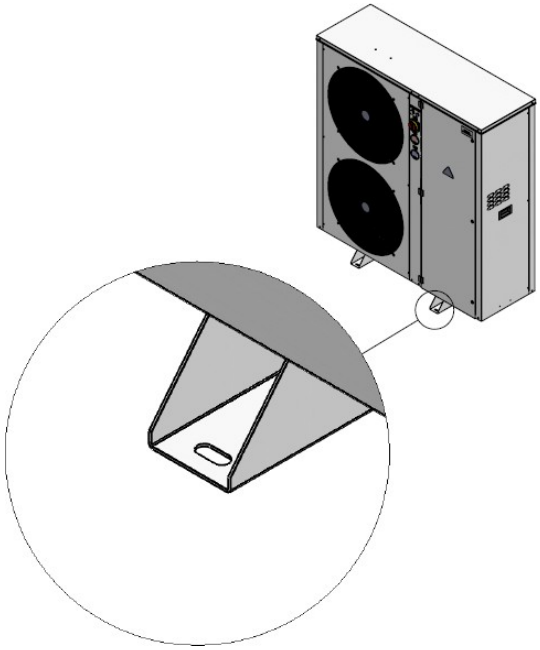
From above



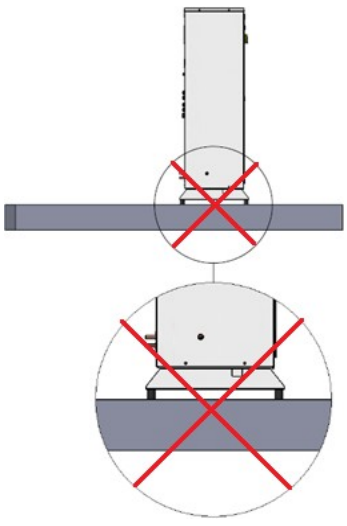
Dimensions	Values
A	Min. 400 mm
B	Min. 800 mm, but not less than the height of the unit * For a unit with a vertical discharge fan: B = Min. 400 mm
C	Min. 400 mm
E	Min. 400 mm
F	Min. 400 mm * For a unit with vertical discharge fan: F = Min. 800 mm, but not less than the height of the unit.
G	Max. 800 mm
H	Max. 1200 mm
Whenever the mounting location is determined, the service space of the unit must be taken into account in order to their repair and inspection.	

i/ Stiffness of condensing unit foundations and vibration isolation material

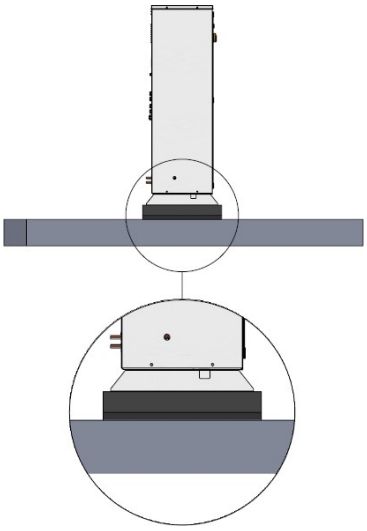
- Fixing of the unit by means of specific holes in the feet of the unit.



- The rigidity of the foundation of the unit must be checked manually before and after commissioning the unit.
- It is necessary to use vibration isolators with sufficient load-bearing capacity for the weight of the unit.
- Support is required over the entire footprint of the unit for units over 200 kg gross weight.
- Point support is not recommended for units over 150 kg gross weight.



The point support of the foot leads to the possibility of excessive deflection



Supporting the unit on the entire surface of the foot provides stability.

j/ Moving the unit to the place of installation

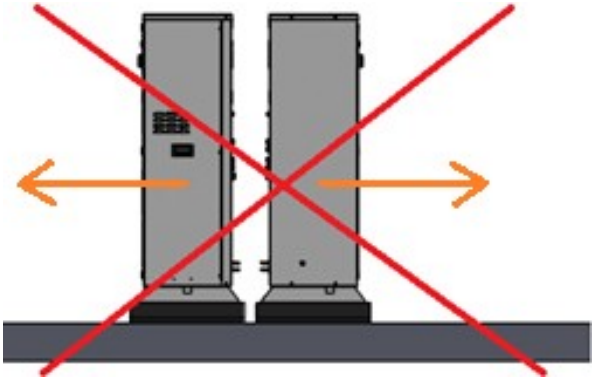
- During the move, the unit must be level at all times.
- When moving, do not allow the unit to hit other objects.
- The unit must be lifted and moved with machines/devices designed for this purpose.
- Machinery used to lift the unit must comply with the requirements of Directive 2006/42/EC, have an adequate load capacity and be approved for use.

k/ Selection of the place of installation of the unit

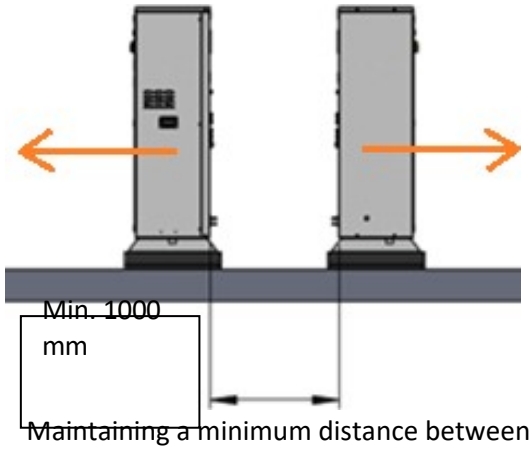
- The unit should be placed away from heat sources.
- The unit must be installed in a place with free air circulation.
- The unit must not be installed where the prevailing wind direction is opposite to the direction of the exhaust air. In case of exposure to such wind, it is recommended to use a partition wall.
- The choice of location for the installation of the unit should be made taking into account the possible inconvenience to people.

l/ Requirements for mounting next to another unit

- Provide sufficient distance in case of placing the units with capacitors facing each other.

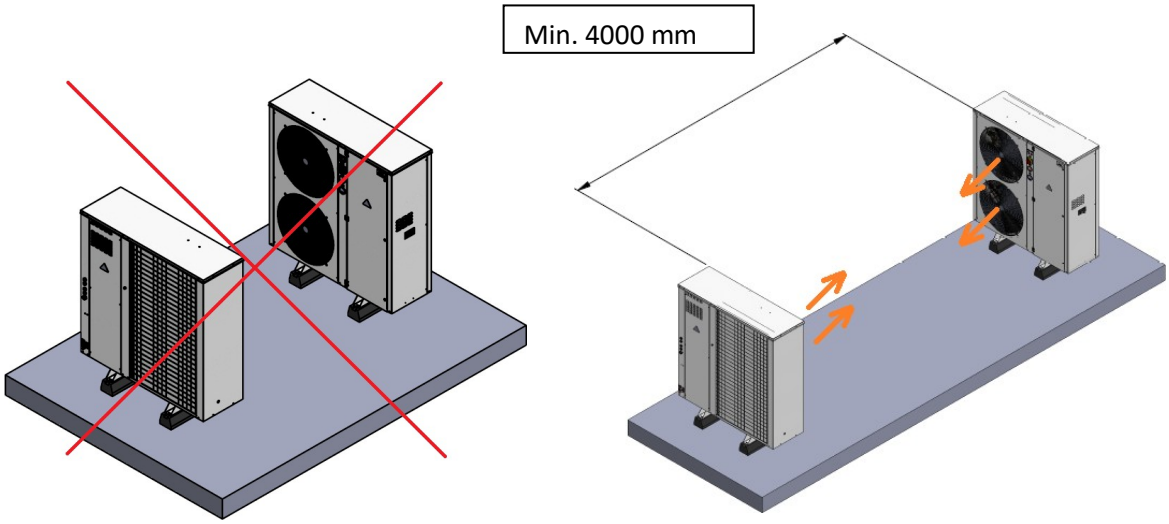


Too short a distance between capacitors can lead to increased condensing temperature and reduce the lifetime of the unit.



Maintaining a minimum distance between condensers does not increase the condensing temperature.

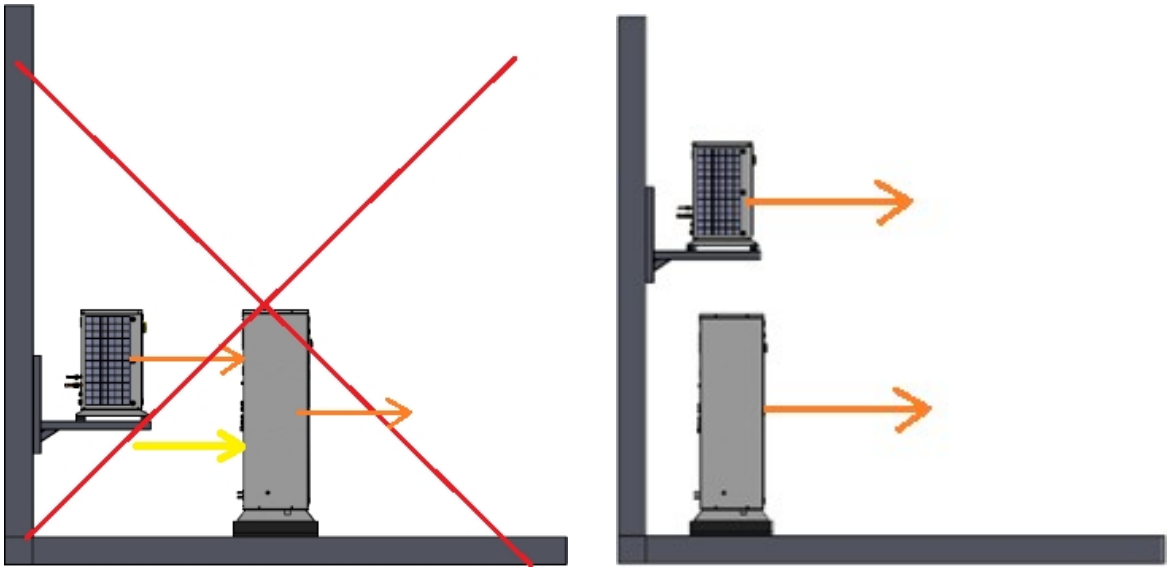
- Provide sufficient distance in case of placing the units with the exhaust air streams facing each other.



Placing the exhaust air streams opposite each other may cause the unit to malfunction.

Placing the units opposite each other, keeping the minimum distance, does not cause negative air turbulence.

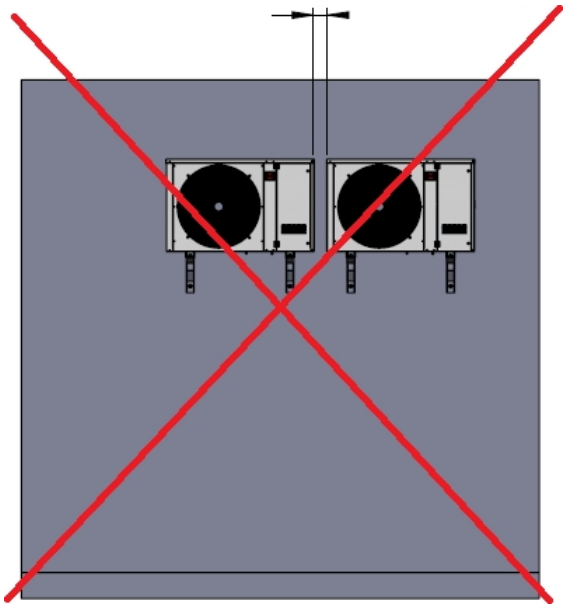
- Separation of inlet and outlet airflows of different units

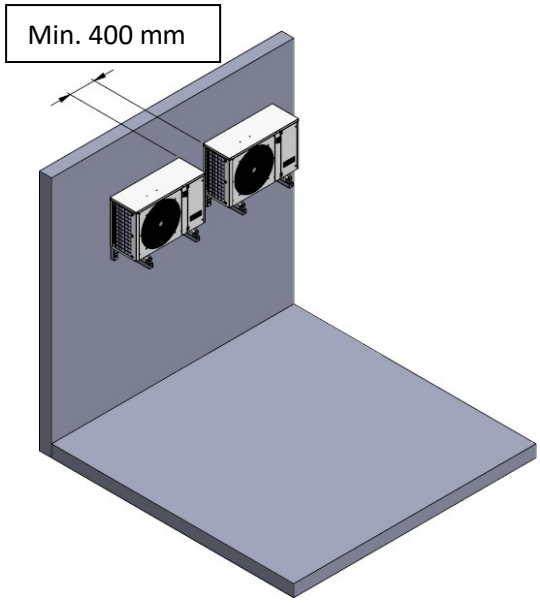


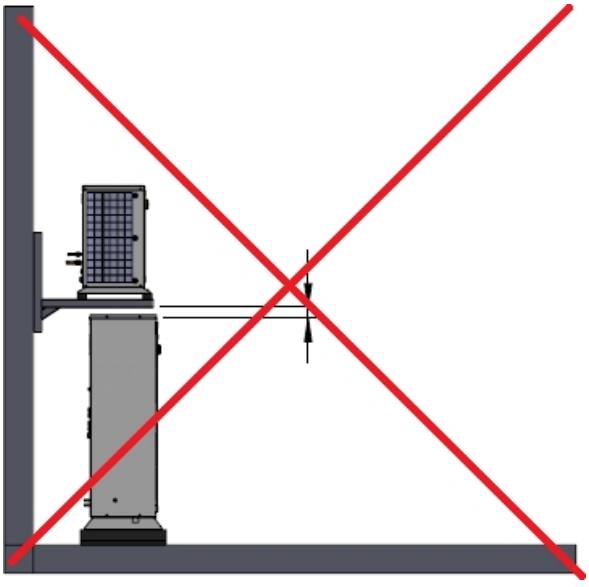
Mixing of the unit's intake air stream with the exhaust air stream of another unit may cause the units to malfunction.

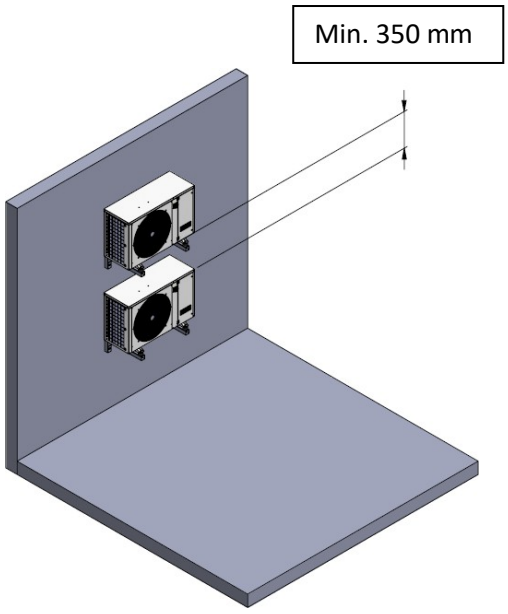
Placement of the units with a maintained separation will not cause mixing of incoming and outgoing air streams.

- Provide minimum distances to other units.









Too short a distance between the units can cause the units to malfunction and makes it difficult to service activities.

Placing the units within the minimum distances does not lead to malfunctioning of the unit and facilitates service activities.

Examples of incorrect placement of the unit:

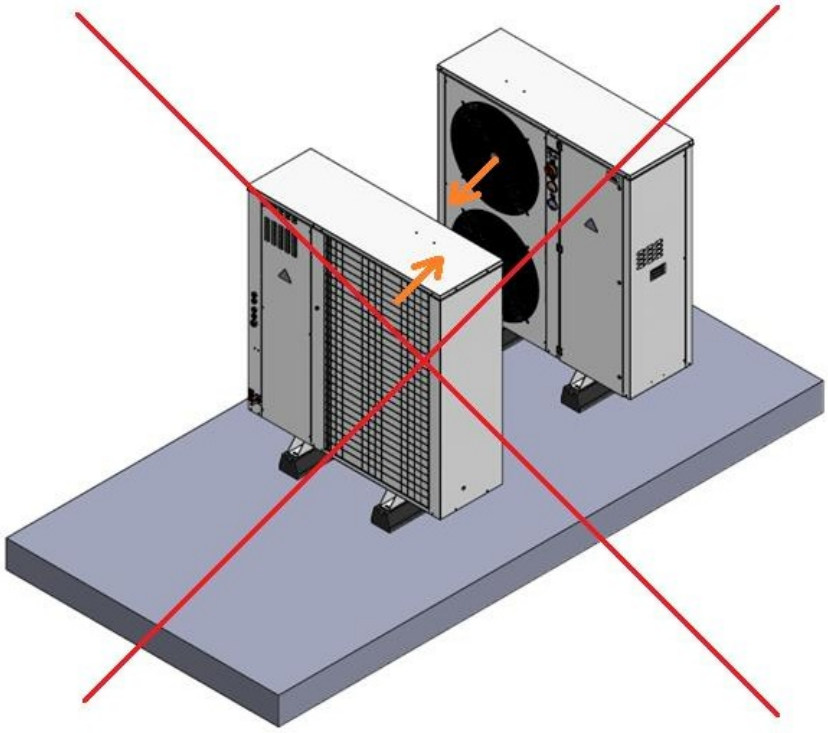


Fig 1. Positioning the units so that the exhaust air streams face each other without maintaining the required minimum distance.

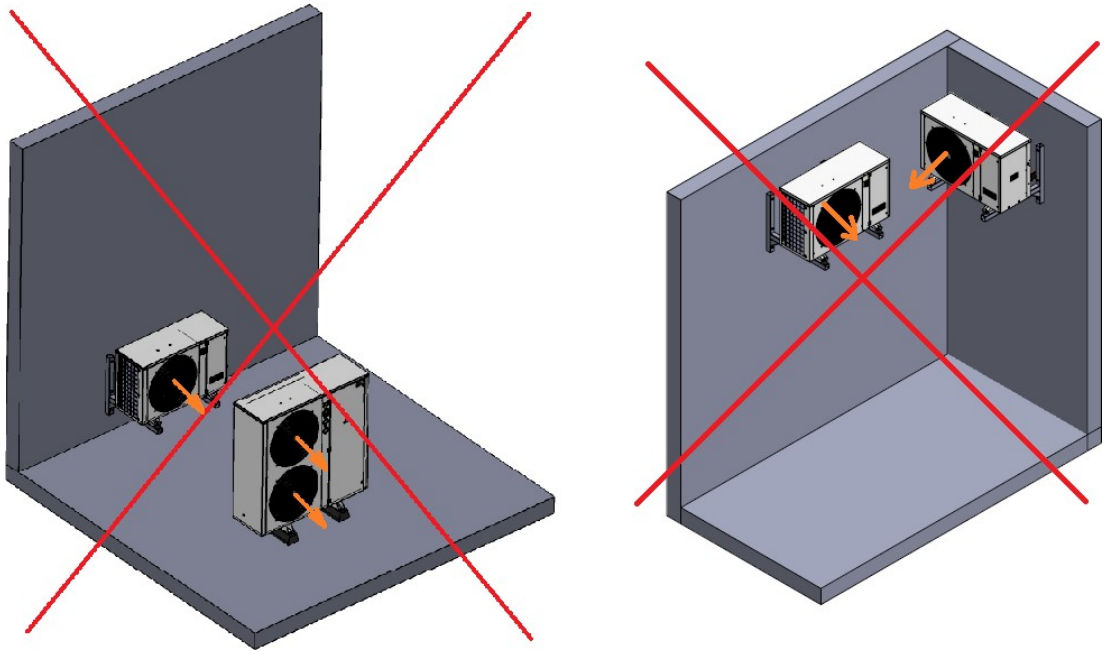


Fig 2. Positioning the units so that one unit sucks the exhaust air stream from another unit.

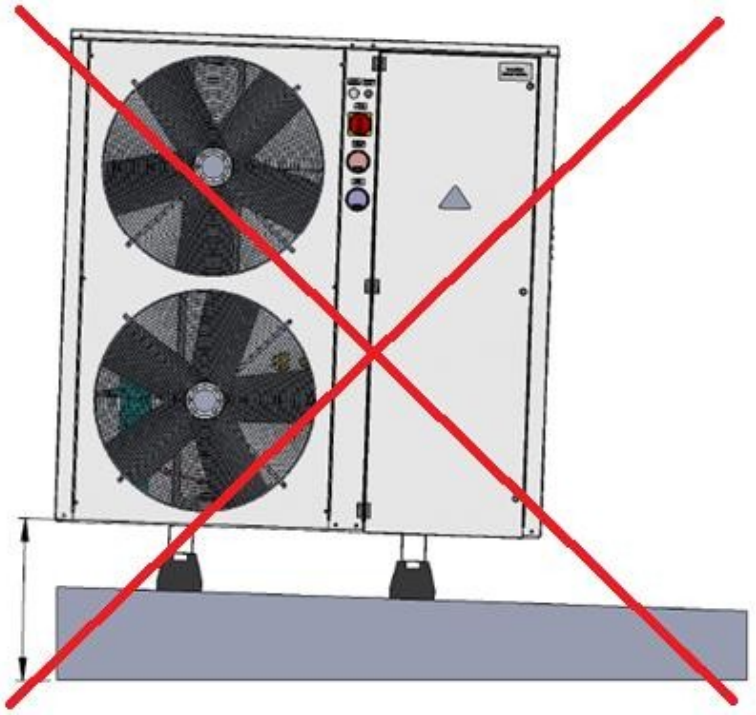


Fig 3. Incorrect levelling of the unit

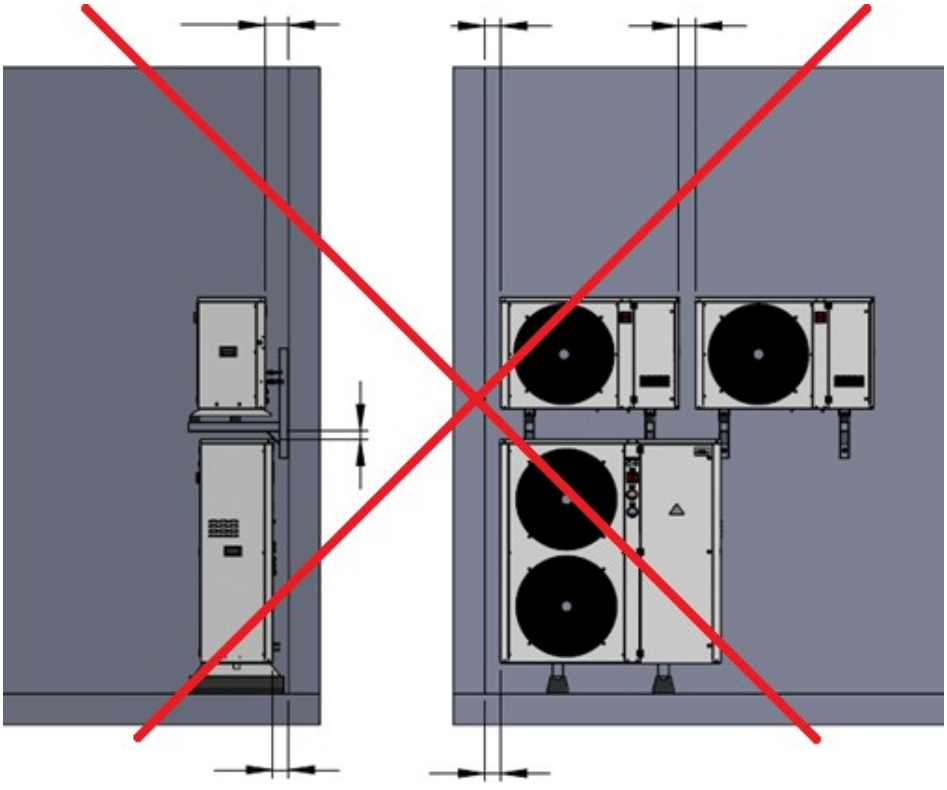


Fig 4. Too short distances from partition walls or other units

Examples of correct placement of the unit:

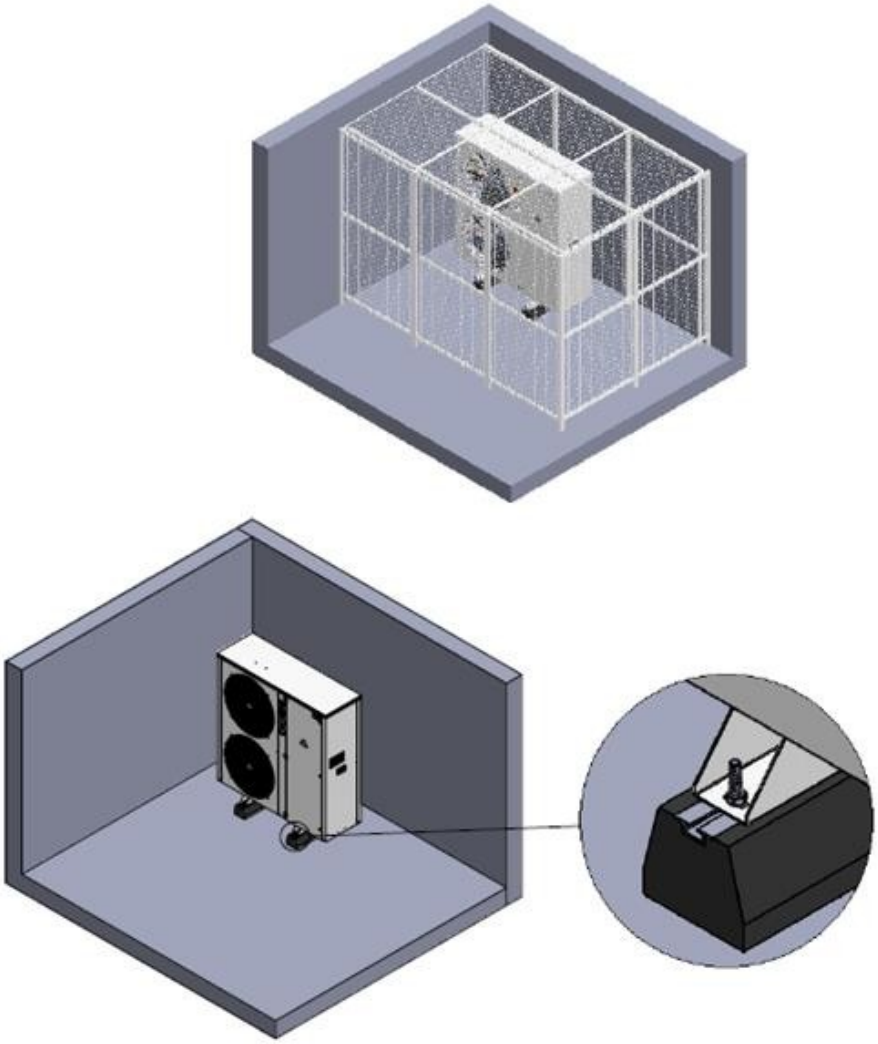


Fig 5. Placement on the base with the use of rubber feet Materials used:

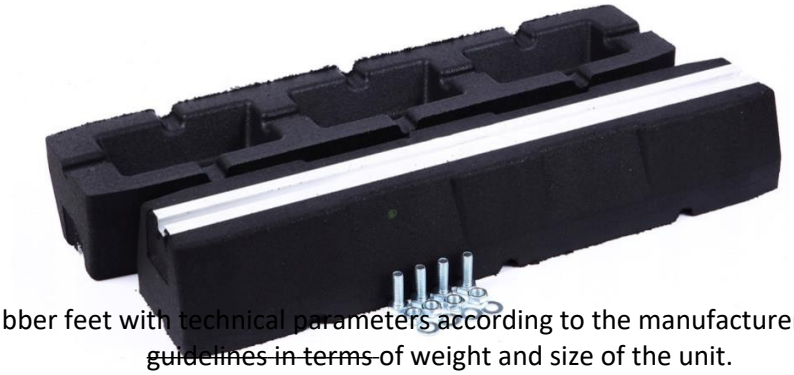


Fig 6. Rubber feet with technical parameters according to the manufacturer's standard ~~guidelines in terms~~ of weight and size of the unit.

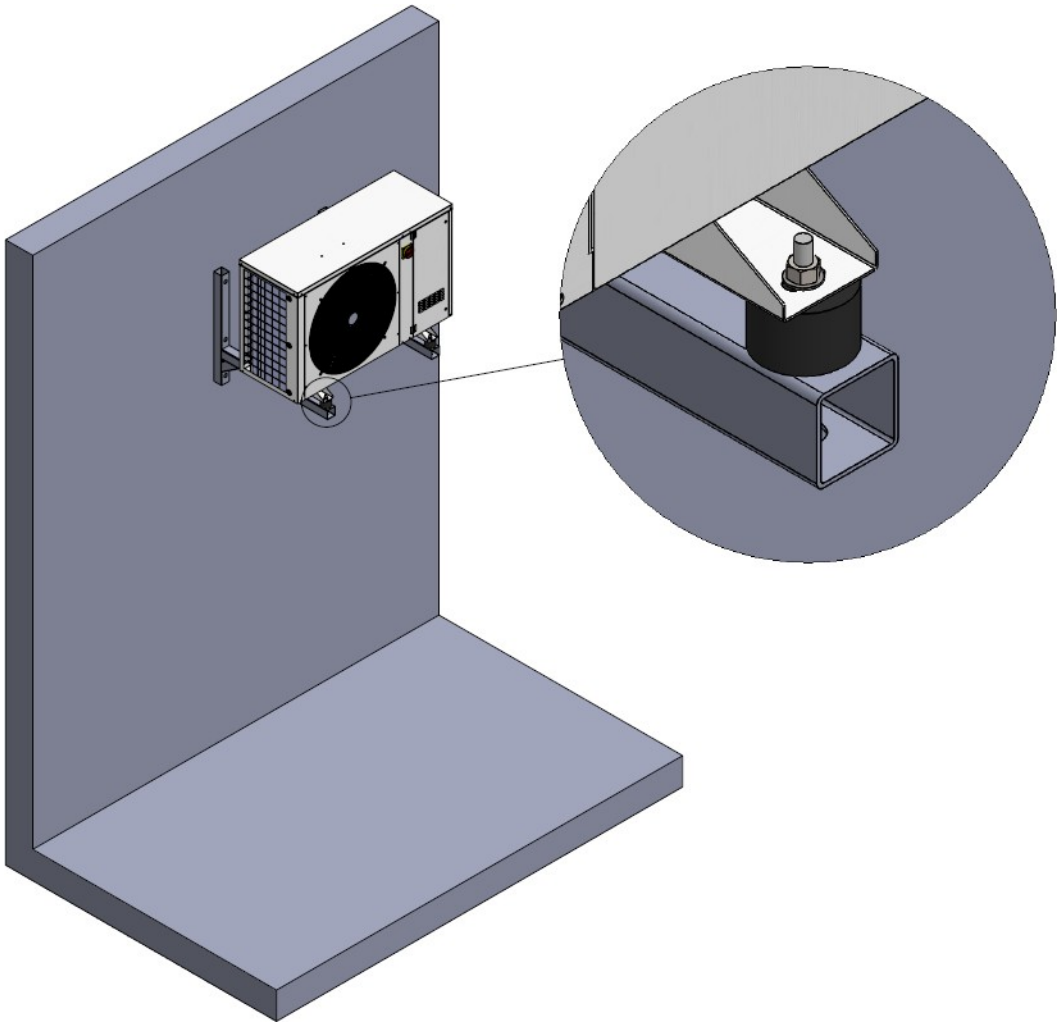


Fig 7. Installation on steel support with the use of vibration isolators

Materials used:

Fig 8. Rubber vibration isolators (e.g. Ø60: DVA.1-60-40-M10-28-40 in accordance with the manufacturer's standards in terms of weight and size of the unit, providing support over the full width of the foot of the unit.

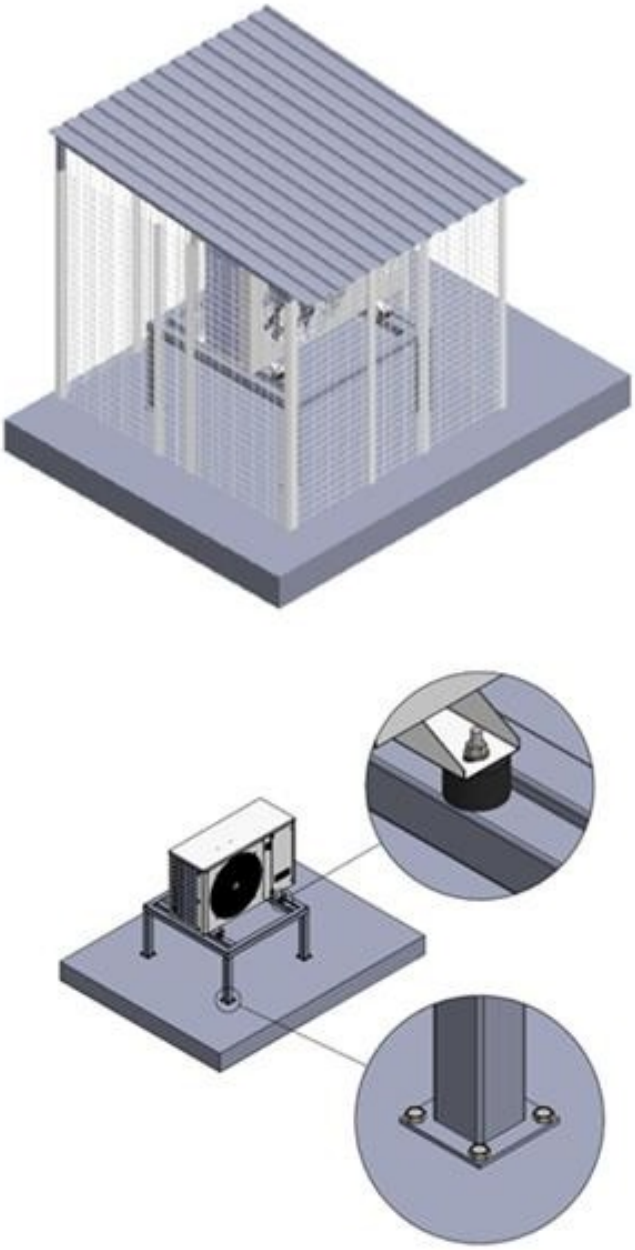


Fig 9. Installation in a profile frame using vibration isolators

Materials used:

Fig 10. Rubber vibration isolators (e.g. Ø60: DVA.1-60-40-M10-28-40) in accordance with the manufacturer's standards in terms of weight and size of the unit, providing support over the full width of the unit foot.

SAFETY NOTES	
Install only in well-ventilated areas	
	Refrigerant leaks can lead to a drop in oxygen concentration which can cause asphyxiation. Flammable refrigerants may explode.
Provide drainage systems where necessary	
	Lack of proper water drainage can lead to moisture accumulation and wet soil.
Provide a fence around the unit	
	Touching the unit by unauthorised persons can lead to injuries and bruises.
Do not install in places where flammable substances may leak out.	
	Flammable substances may ignite when they come into contact with a spark from the electrical part of the unit, resulting in an explosion.
Move the unit into a level position carefully.	
	Improper handling of the unit may cause it to fall and result in injury.

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