



Future[®] and Future[®] S air handling unit

**Transport, storage and
installation instructions**

21 June 2021 version

www.koja.fi

! **Keep these instructions near the air handling unit.**

! **Read the instructions carefully before taking any measures.**

! **Follow the instructions provided; pay special attention to instructions related to safety.**

Packaging

Future® and Future® S1800 air handling unit's section modules are packaged at the factory in plastic film for transportation, storage and on-site transfer handling. Section modules are mounted with a rim on a wooden pallet. Future® S500, S900 and S1200 ventilation units are packaged in plastic film without a transport pallet.

At the installation site, the products must be protected from dust, rain, and sunlight. If the section modules are stacked on top of each other during storage, it must be ensured that the weight of the top module is evenly distributed on the frame below. Do not place a heavier section module on top of a lighter one. The packages must be lifted and hauled individually.

Transport and lifting

! The unit's section modules must be transported to the installation site in factory packaging.

! Observe the transportation and lifting instructions in the images!

! Do not attach lifting straps or hooks inside the section module.

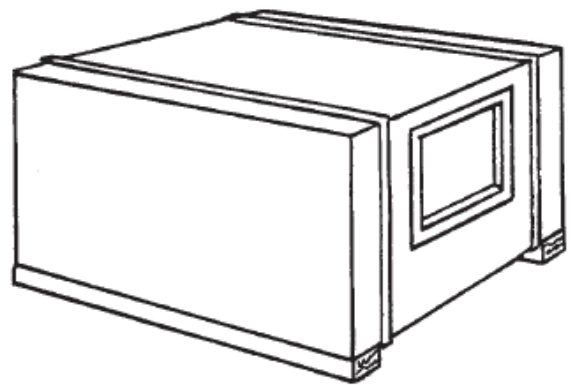
! Handle carefully to ensure you do not damage any components.

! If the transport position is indicated on the section module, it must be observed.

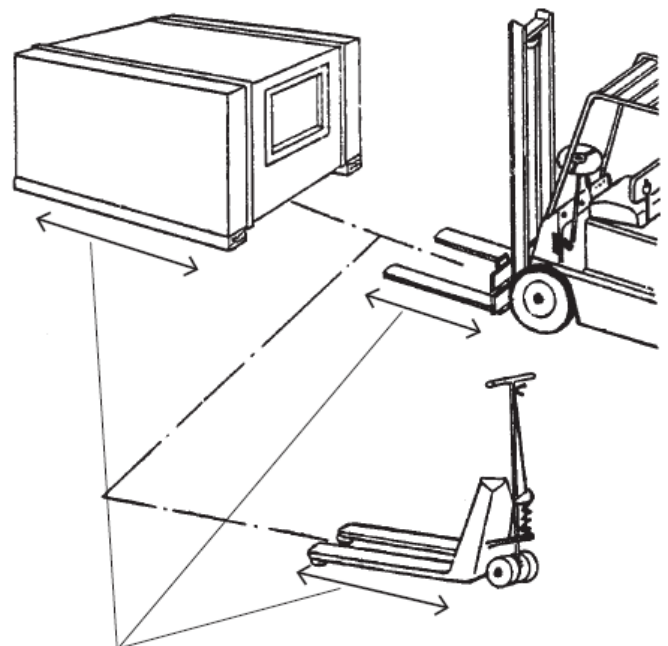
! Weights are indicated on the packages.

Future® and Future® S air handling unit instructions

- Transport, storage, and installation instructions (this manual)
- Section specific operation and maintenance instructions
- Brochure



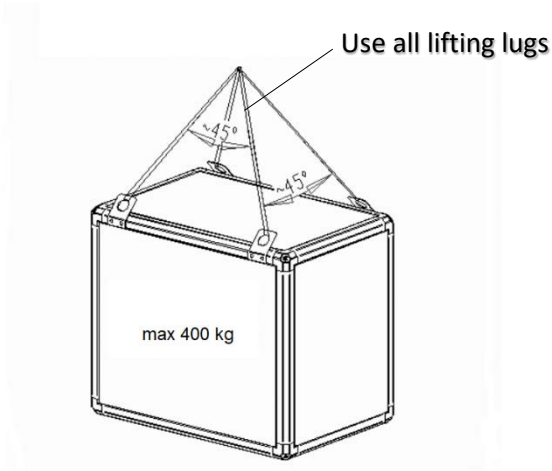
Lifting methods



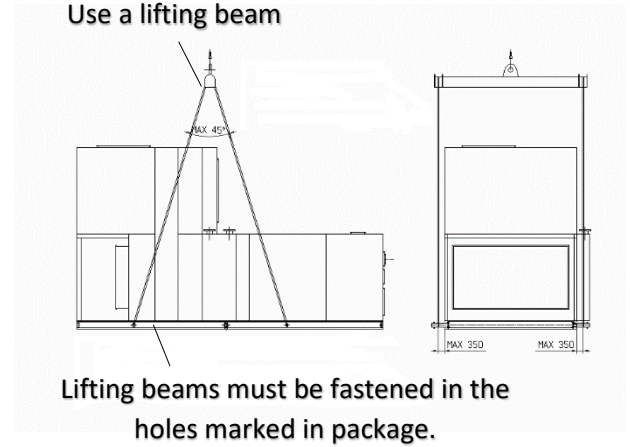
Ensure that the length of the lifting forks equals the width of the machine!

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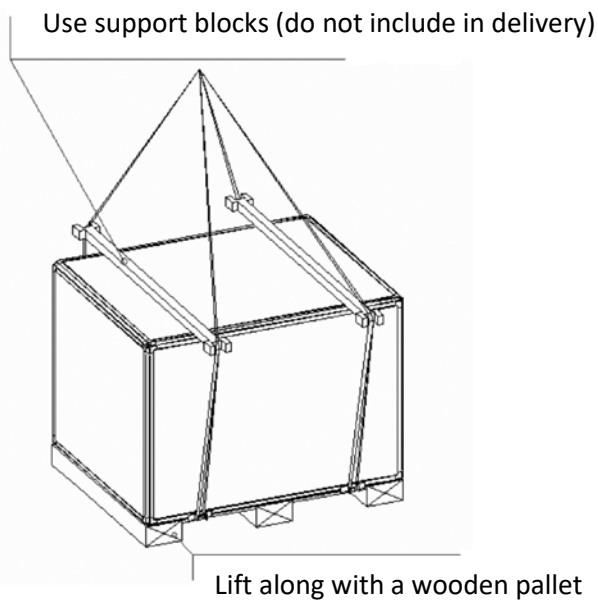
Lifting with lifting loops



Lifting an entire unit

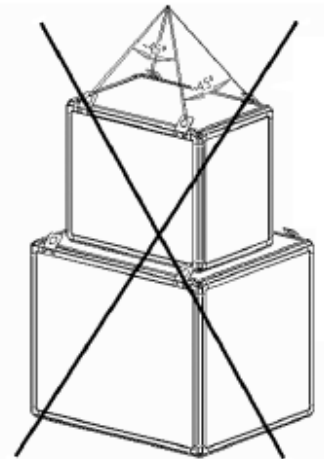


Lifting a module on a pallet

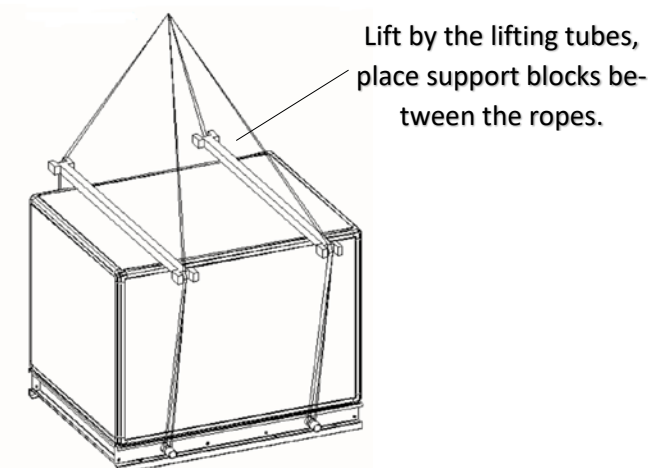


Lifting casings packed on top of each other

! Do not lift casings packed on top of each other through lifting loops.

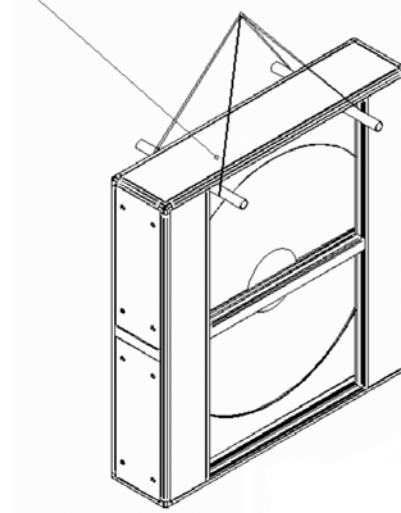


Lifting a base-mounted module

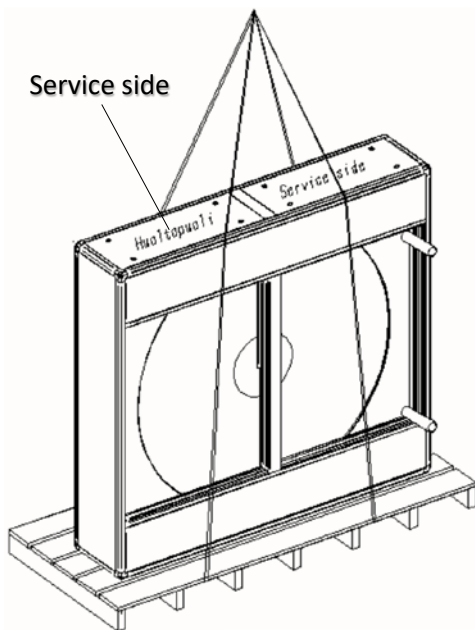


Lifting a rotor with lifting tubes

Put plugs into holes of lifting tubes after lifting. Lifting tubes do not include in the delivery.



Lifting a rotor on a pallet



! Use the lifting tubes to turn the section module to the correct position after lifting.

Hauling instructions

The weight of each unit section is indicated and must be taken into account when lifting and hauling section modules. Section modules can be transported by hauling with special care, provided that:

- lateral support is ensured to prevent the module from tipping over.
- the hauling route is unobstructed and wide enough. The hauling opening and plane must be larger than the object being hauled.
- the hauling route inclination does not cause a change in the weight distribution of the package and thus cause a risk of the section tipping over, especially when hauling narrow and tall objects.
- rope securing is arranged for hauling narrow and tall objects.
- the objects are hauled in transport position.
- the carrying capacity of the transport plane is sufficient.
- unit sections are lifted with a lifting device.

Safety instructions

Before switching on the fan, make sure that the inlet and outlet of the fan section have been connected to the ductwork or that the access to the rotating fan parts, such as the impeller, through an outlet or inlet and to belt or switch use through an access

door or inlet has been prevented with protective screens or by another appropriate manner.

! Upon starting the unit, the service switch of the unit must be installed and operating and the access doors closed. The damper section of the unit must open before the fan starts.

! Do not open the access doors of the unit when the fan is in operation. If the unit is installed in a place where it is easily accessible to persons other than service personnel, the handles of the access doors must be removed and locked in a safe place.

! The motor of the fan FFK-xx-AF may become overloaded, if the air volume flow exceeds the designed level. This may happen if, for example, the air handling unit is switched on before all the sections of the unit and the ductwork are installed, if the fan is switched on with the access door open, or if the access door is opened during operation of the fan.

The unit's safety equipment

! Refer to section-specific safety equipment in the operation and maintenance manual. The service (safety) switch installed in the fan section functions also as a unit emergency switch (accessory). Shields and warning labels attached to the unit at the factory may not be removed.

CE marking (Future® air handling units)

The manufacturer's declaration of the safety of the unit and other documents relating to the safety of the unit sections are supplied with the unit.

The person responsible for assembling the unit, so that it meets the definition of machinery given in the Machinery Directive, gathers the declarations of conformity for components and the manufacturer declarations, ensures that the essential requirements relating to the safety of machinery are complied with, signs the declaration of conformity for the unit, and attaches a CE marking to the unit.

Fire

In case of fire in the unit, do not use water, but a powder extinguisher or such. The machine is mostly made of non-combustible material, steel and mineral wool. Gaskets, belts and filters are of combustible material.

Installation instructions

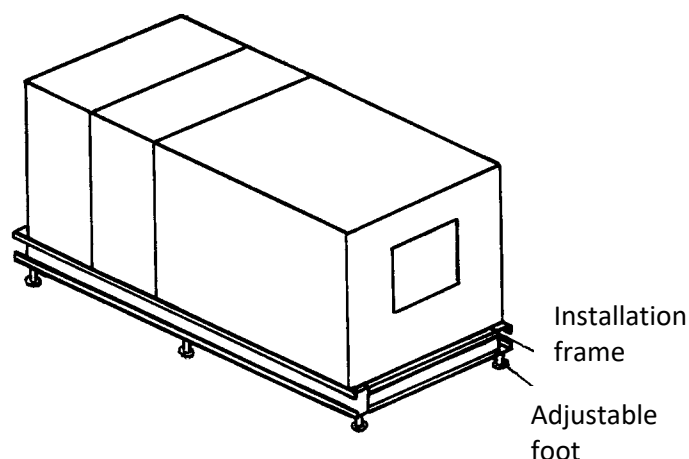
Before starting installation, check that the section module belongs to the unit in question and is facing the air flow correctly (see installation of sections). Also check that the section is not damaged. The locations of unit sections are indicated in the ventilation plans.

- A 400 mm space must be left behind the unit for installation and maintenance work.
- The unit must be mounted on a horizontal base with a maximum inclination of 2 mm/1m. The unit must be tilted approximately 1–2% toward the water drain of the coil to prevent the water from accumulating in the coil tray.
- If the unit has a water drain before the fan (on the inlet side), a water trap or plug must be used. The plug is used when the water drain is only needed to remove cleaning water. The water trap is used when the need for draining water is constant.
- The floor structure must be suitable as a mounting base for an air handling unit. The mounting base must have a natural frequency that is either twice as large or less than half of the rotational frequency of the unit. The floor surface of the engine room must be impermeable to water.
- Sufficient space (*width of the unit*) must be left next to the unit for maintenance and repair.
- The unit must not be installed directly on the floor, but e.g. on a base.
- Under normal conditions, the unit need not be attached to the floor (*floor mounting*).
- The unit must be installed by a qualified technician. All installation and adjustment operations related to electricity or automation require special expertise.
- The unit is cleaned with a regular detergent. Solvents must not be used in cleaning sections with aluminium parts (heat exchangers).

Installation methods and instructions

On a base on the floor

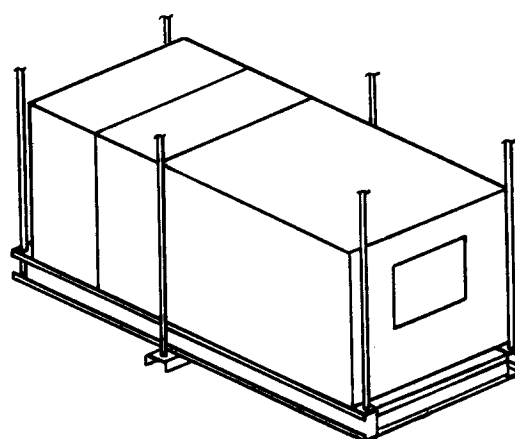
A base with adjustable legs is available at **Koja Ltd.** When necessary, the unit is attached to the base with brackets and screws.



On a base to the ceiling

Threaded rod e.g. M 10 mm (not included in the delivery).

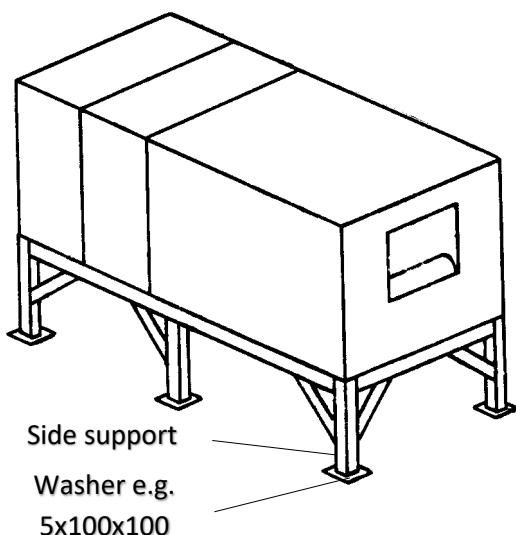
The rods must not be installed in front of access and inspection doors.



On a steel profile base

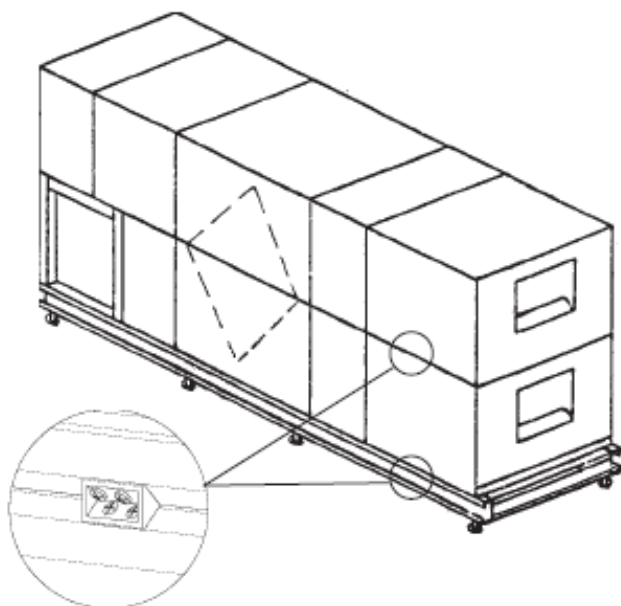
The base is constructed at the installation site, e.g. by welding 40 x 40 square profiles.

The number of legs and side supports is case-specific. Side supports are required when the base height exceeds 300 mm.



Installing units on top of each other

Normally, the units are always installed on their own bases. Exceptions to this are units with a heat recovery section, where the structure of the heat recovery section requires that the supply and extract units are installed on top of each other.



Connecting sections and duct connections

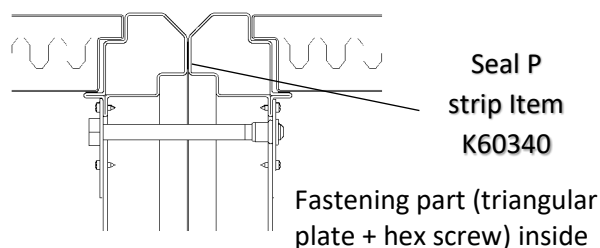
The unit is delivered either as separate sections and section modules or as an assembled unit.

Connection between section modules

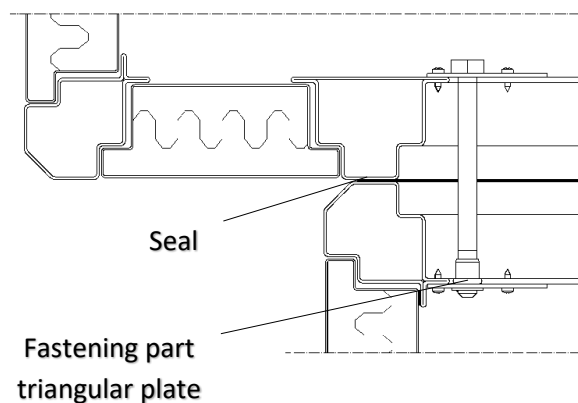
The unit delivery includes a sufficient number of fasteners (bolt connection or mounting disc). The location of the fasteners (outside/inside) is defined at the factory according to fastening possibilities. If the connection cannot be done as planned, the fasteners can be moved to a more suitable location. The gasket to be placed between the sections is delivered separately in a plastic bag inside the section. The gasket must be attached to the joint surface as a continuous strip.

Connection between Future® modules

Connecting sections with a triangular fixing plate

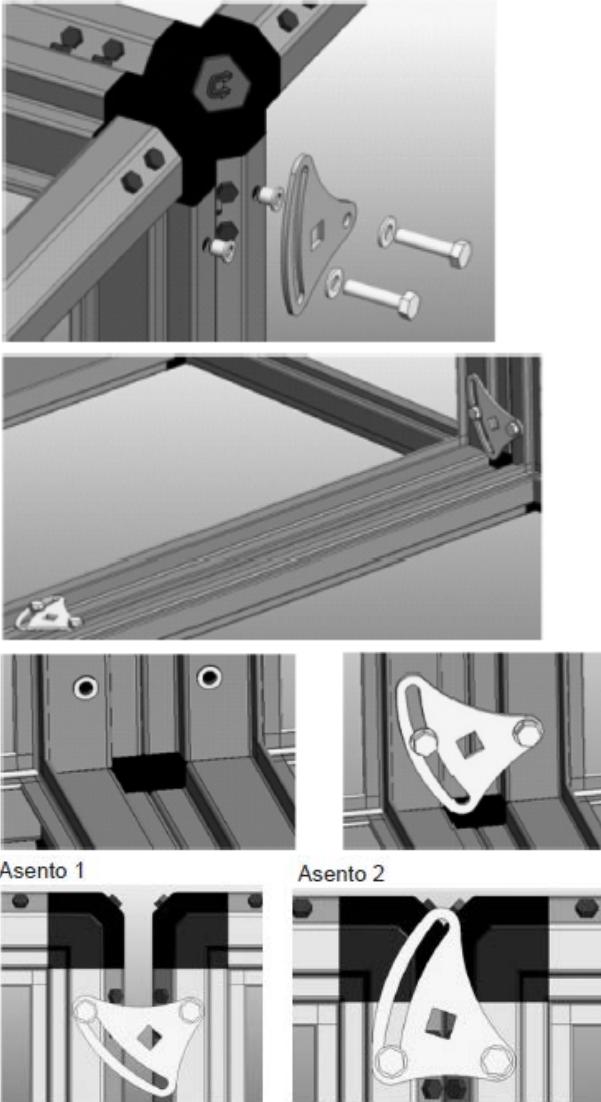


Connection between section modules of different sizes



Connection between Future® Clean modules

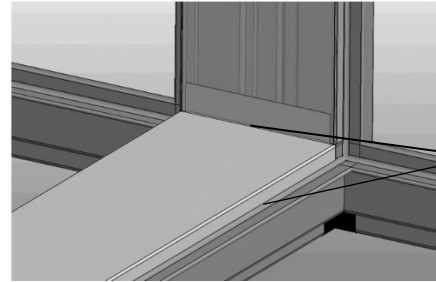
By standard, the connection between the modules of the Future® Clean hygiene unit is inside the casing, but upon request, it can also be outside the unit.



1. Place the gasket between the modules.
2. Install the modules to be connected to a distance of approximately 5 mm from each other.
3. Remove the mounting screws M8 x 25 (attached to the profiles).
4. Install the mounting disc (separately in the mounting accessory package), attach the screws and washers and leave the screws loose (position 1).
5. Using a ½ inch wrench, rotate the mounting disc to position 2 so that the modules tighten against each other.
6. Tighten the screws using an Allen key.

Connection between Future® Clean modules, cover strips (accessory)

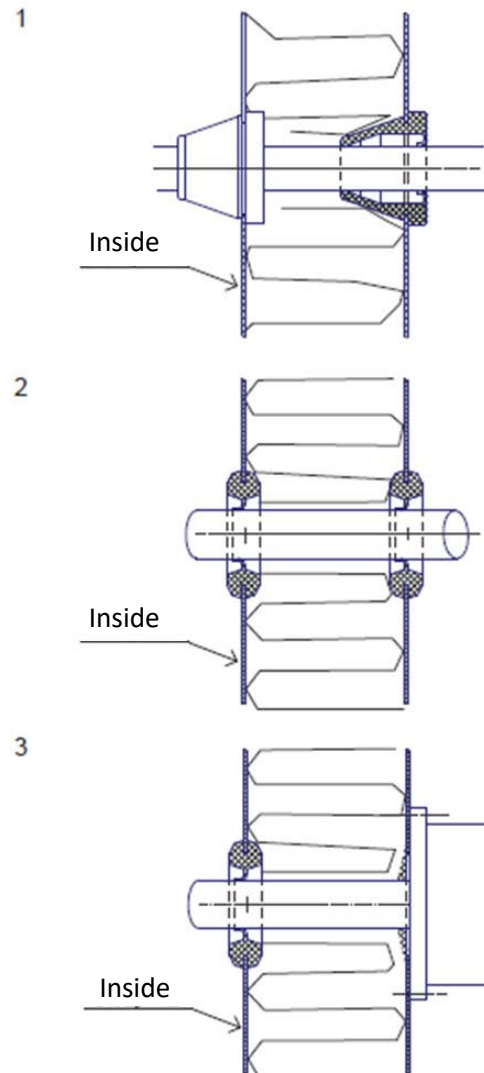
The connection between the modules of the washable Future® Clean hygiene unit must be covered with cover strips available as an accessory. The cover strips are glued in place and sealed with a sealant. The sealant is included in delivery.



The joints have to be sealed with sealing compound at site

Unit casing penetrations

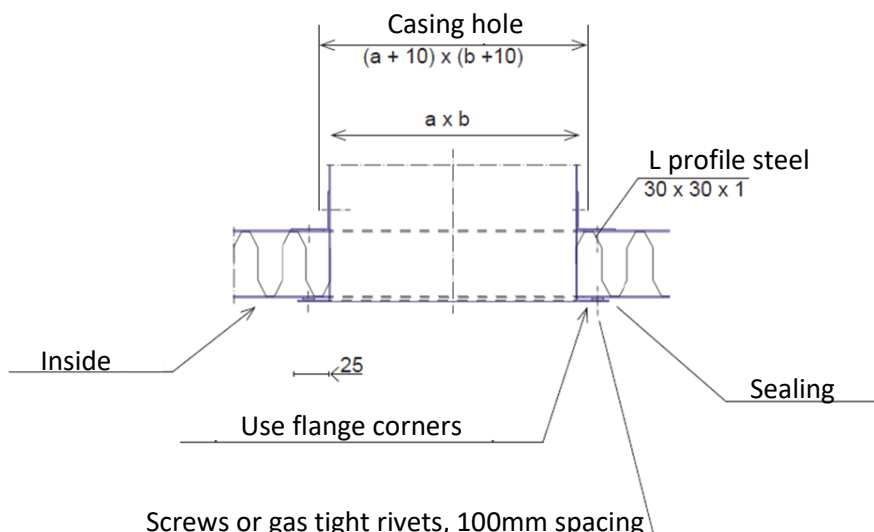
Electrical and pipe penetrations in unit casing



CABLE PENETRATION			PIPE AND SHAFT PENETRATION			SENSOR SHEATH PENETRATION		
Item	Cable's external \varnothing mm	Mounting hole \varnothing mm	Item	Component's external \varnothing mm	Mounting hole \varnothing mm	Item	Sheath's external \varnothing mm	Mounting hole \varnothing mm
Film gasket	5–7	16	Lead-in rubber	12–22	32	Lead-in rubber	12–22	32
Film gasket	7–10	19	Lead-in rubber	25–38	45			
Film gasket	10–14	23						
Film gasket	14–20	29						
Film gasket	20–26	38						
Film gasket	26–35	48						

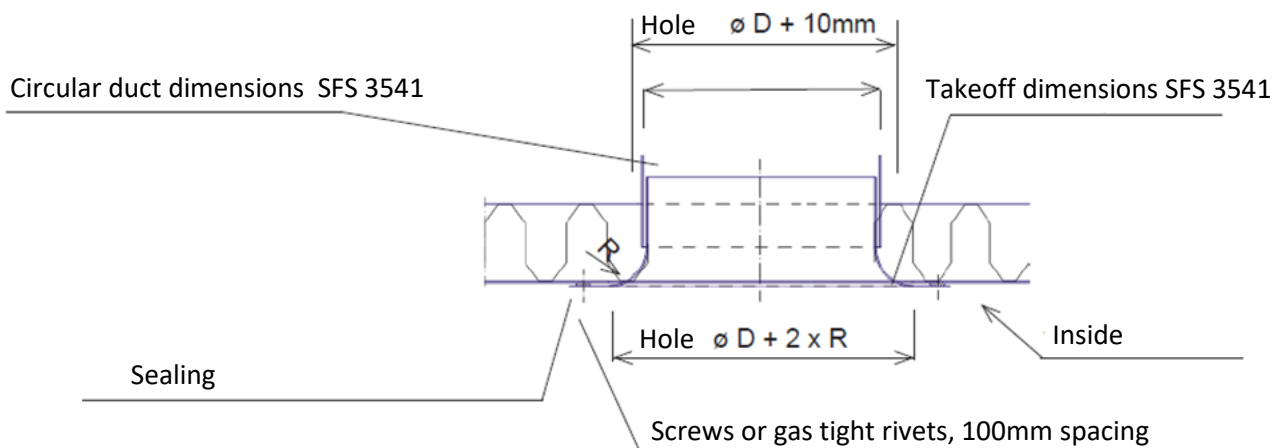
Connecting a rectangular duct to the unit casing

The requirements of standards SFS 3281 and 3243 and E7 must be taken into account when making a rectangular channel connection. The component's tightness must correspond at least to tightness class B.



Connecting a round duct to the unit casing

The duct connection may be made to those parts of the unit casing which do not have any connections on the plates. A duct connection must not be made closer than 80 mm from any joint on the casing plates. In unclear situations, contact the manufacturer.

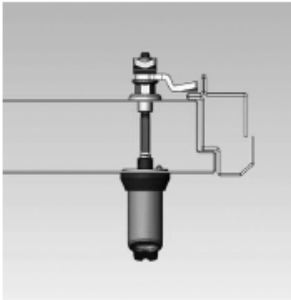


Accessories

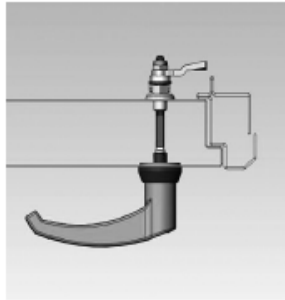
Safety latch for high-pressure components

The safety latch is used on high-pressure components to prevent uncontrolled opening of the access door.

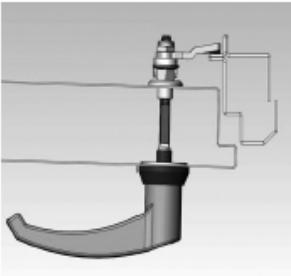
Door shut, handle in closed position.



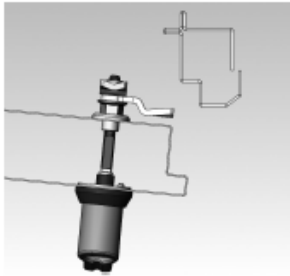
Handle turned to open position.



The safety latch prevents uncontrolled opening of the door.



The handle turned back to closed position to open the door.



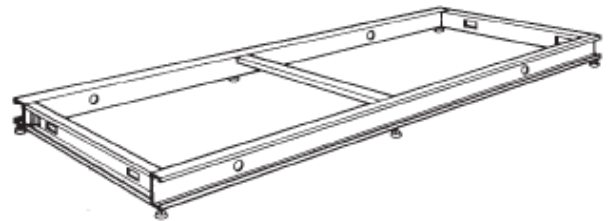
Water drain

The Future® Clean hygiene machine can be equipped with a water drain for draining cleaning water. The water drain must be plugged (the plug is included in the delivery).

FKZA unit base

The FKZA unit base is delivered to the installation site together with the unit sections either separately or attached to a ventilation unit ready-assembled at the factory.

The unit base has adjustable mounting legs to allow the unit to be adjusted horizontally at the installation site. Installation instructions are supplied with the unit base.



Deliveries according to Koja Ltd's standard terms and conditions of indoor air handling products:

<https://koja.materiaali.fi/media/media/materiaalipankki/kiinteistot/ilmanvaihto/Rakennusten-ilmankäsittelytuotteiden-vakioehdot.pdf>

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