

Assembly Instructions

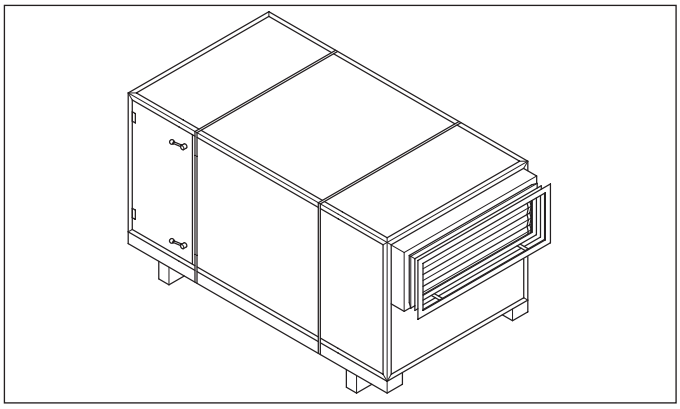
SKG / SKG-Z

Delivery

The unit parts are delivered to the building site on wooden palettes and are fastened with metal bands. Doubledeck units (air inlet/outlet combinations) up to SKG 8.5 are stacked on top of each other but, apart from the metal bands, the top and bottom unit parts are not secured together. The metal bands may only be removed from the unit at its definitive location.

The base-frame and also the duct connection elements (dampers and flexible connections) are supplied separately, depending on transport conditions.

All loose material listed on the delivery docket, such as filters, replacement material etc., may be stored in the various appliance parts without any specific marking.

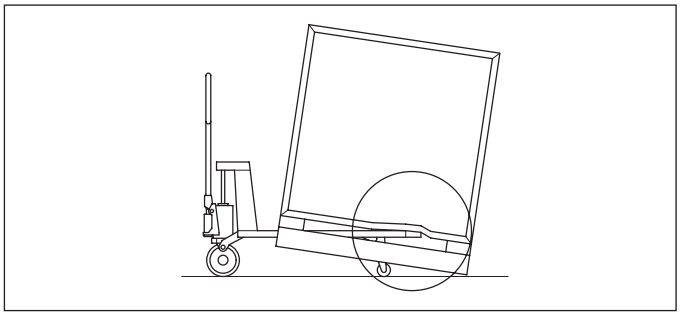


Without the customer's express requirements, the units are supplied with no additional packaging. Therefore the units must be stored provisionally in a weather-protected site.

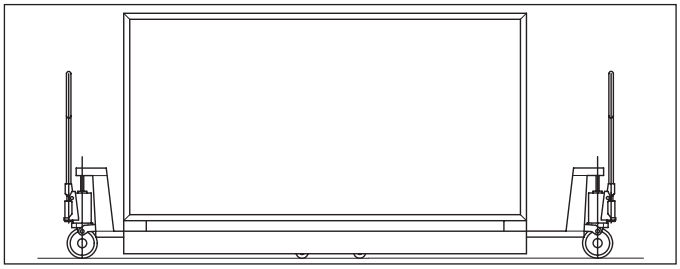
Unloading/Building site transportation

Forklift truck/hydraulic hoist

A forklift truck or hydraulic hoist is necessary for the unloading and transportation of the unit part. The length of the forks (extension) must be at least as wide as the width of the unit.



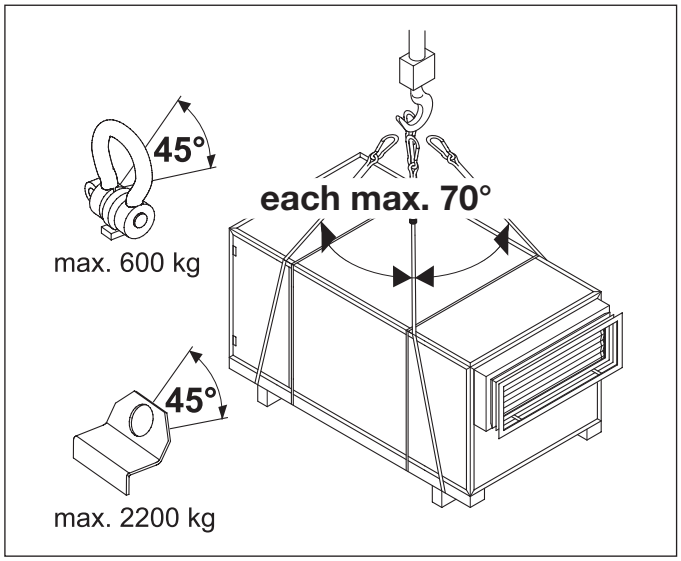
Otherwise two forklift trucks are required.



Building crane

Unit parts may only be lifted with belts, on no account must wire cables or chains be used.

In order to prevent damage to the unit case, the belts are to be long enough so that smallest possible angles occur at the suspension hooks.



Assembly

General

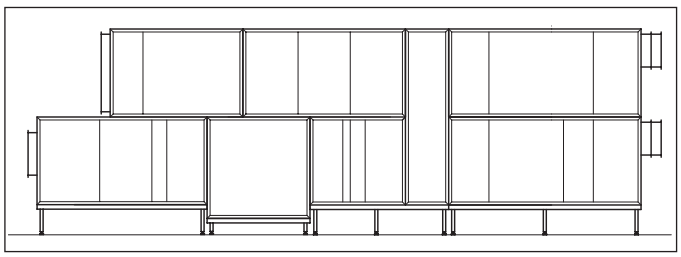
Screwing of supporting elements, like e.g. assembly angles, is only allowable in the correspondingly prepared profile frames from Seven- Air.
It is necessary to wear protective gloves during assembly of sharp-edged parts.

The loose assembly material is packed in the marked unit case.

Sticker reads: „Assembly material and loose parts are inside".

A sketch of the unit showing the individual unit parts and their weights is also supplied. A base frame plan is only supplied with multi-part versions.

The screw material for the base-frame is fastened directly on the frames.

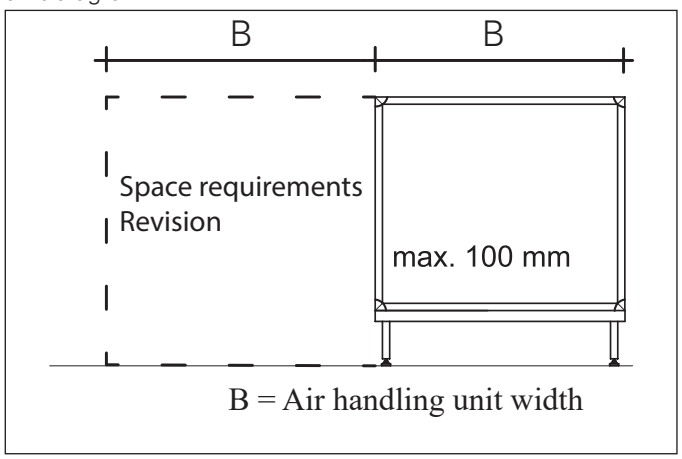


The transport path on the building site is to be determined prior to the actual assembly and the final location of the unit (i.e. the basic measurements) are to be marked on the ground by means of a marking line, also indicating the inspection side of the unit.

Units without adjustable feet: Prerequisite for a trouble-free operation is that the floor on which the unit is to stand must be completely even.

Minimum distances for operation, maintenance and replacement

On the inspection side, at least one unit width must be kept clear for operation, maintenance and replacement work (swivel range of inspection doors and removal of built-in components, etc.). The inspection side can be found in the unit diagram.



Assembly of the base-frame

• *Base-frame plan*

• *Screw material*
- Is fastened to the frame.

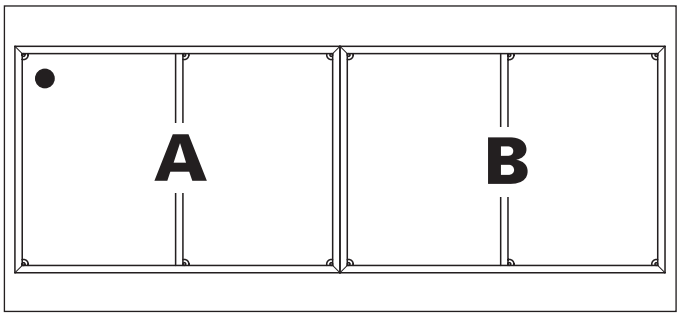
• *Tools*
- Fork wrench Size 24
- Ratchet brace with 6 mm Allan attachment
- Large water level, length ~1.5 m

Setting up

Mark the highest point of the floor ● in the place to be erected.

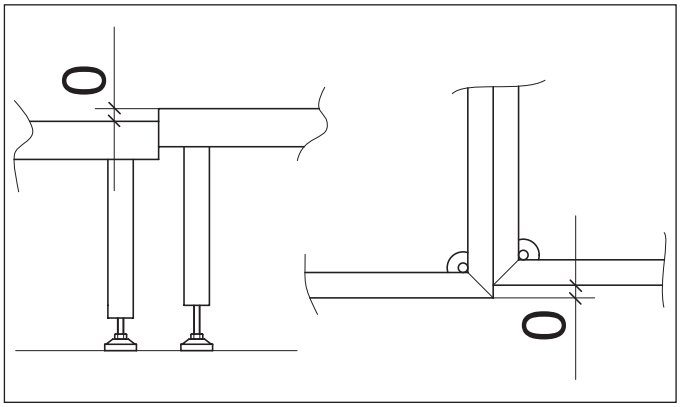
Install the base-frame in the place to be erected according to the base-frame plan, following the sequence Part A, Part B etc.

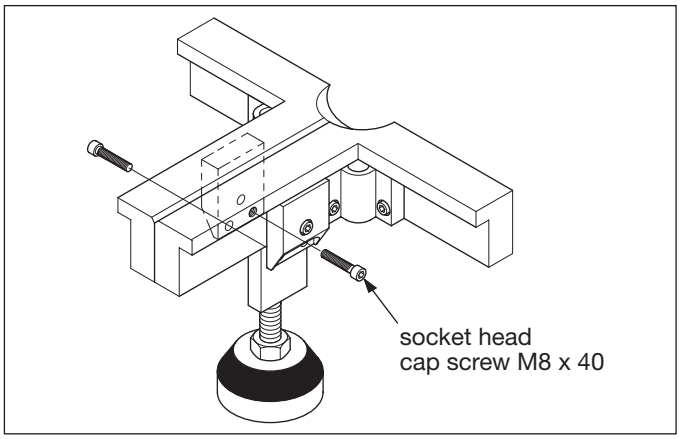
Remove the lettering on the frame and coupling points.



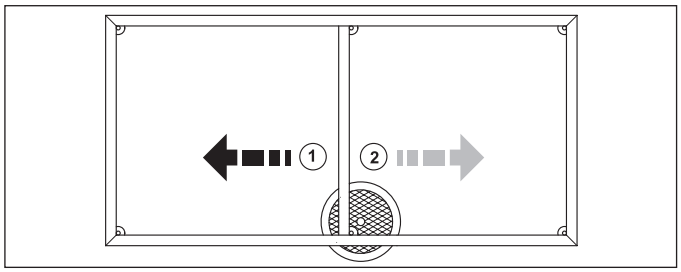
Screwing

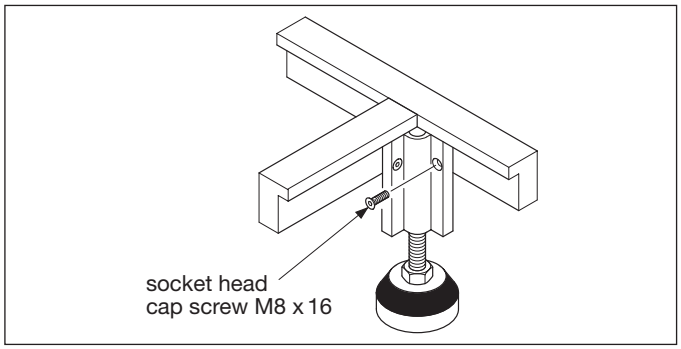
Align and screw the individual base-frame parts to each other.





The center channel and the feet of the base-frame are slideable to overcome unevenness or other building obstacles.





Leveling

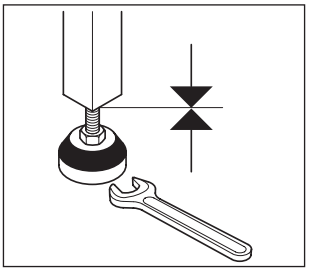
It is imperative for trouble-free operation to have the base-frame absolutely levelled.

1. The base feet of the center channel are to be completely screwed in.

2. The base foot at the previously determined highest point of the floor is adjusted as follows:

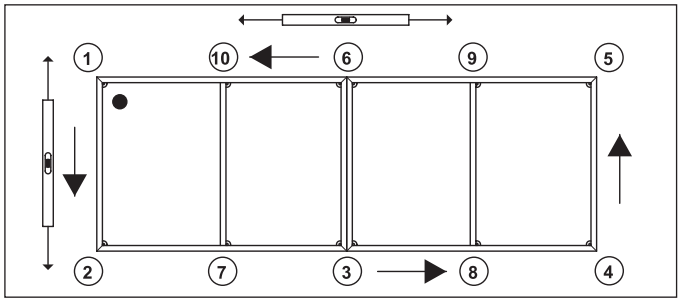
Base-frame height
100 – 140 mm:
Screw in the foot to the max.
(adjustment range: 0/+20 mm)

Base-frame height
150 – 500 mm:
Screw in foot to 10 mm
(adjustment range –10/+30 mm)



3. Level base-frame as per 1st base foot. Maintain the sequence in the same direction (1 d 2 d 3 d 4 d 5 d 6).

4. Unscrew the base feet of the center channel (7, 8, 9, 10) only as far until there is a slight pressure on the floor.



Level the base-frame of unit parts with steps (air washer, contact humidifier), only when the previous unit parts have been fitted.

Assembling the unit

- *Seven-Air unit sketch (included in delivery)*

- *Screw material*
  - In marked unit part

- *Tools*
  - Trimming punch or plate shears
  - Ratchet with nut or fork key Size 13/8
  - Cross recessed screwdriver Size 3
  - Allan (torque) key Size 13
  - Allan keys No. 4, 5, and No. 6
  - Slip lubricant (e.g. Waxilit 22-30 P)
  - Plastic hammer 200 gr. (+ squared timber strip as underlay)

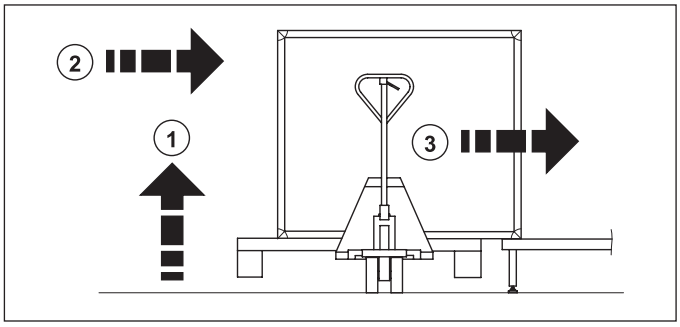
With doubledeck unit combinations the lower unit parts are to be assembled first. Unit parts with condensation outlets to the bottom are to be marked.

To avoid tripping or injuries, the metal bands holding the unit parts on the wooden palette are to be disposed of immediately after their removal. Unit parts supplied on top of each other are to be moved with special caution as they are not secured together.

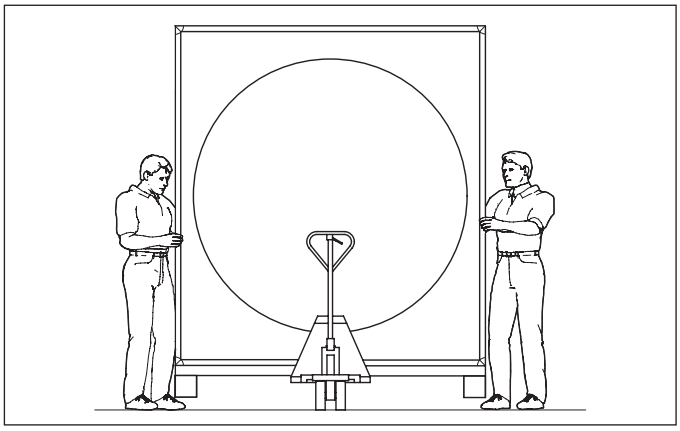
Never lift unit parts by the air heater or cooler connecting stays, dampers or flexible connections.

Placing unit parts on the base-frame

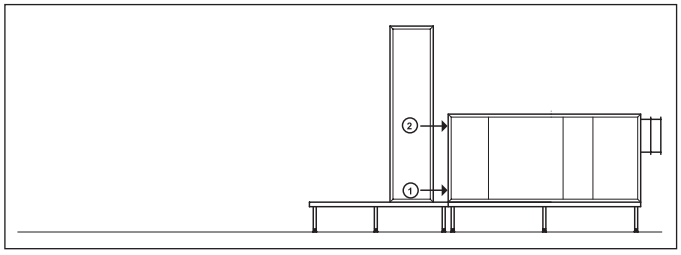
Position the forklift truck or hydraulic hoist parallel to the base-frame and lift until the top edge of the palette reaches at least the top edge of the base-frame. Now slide the subassemblies on the base-frame and place in correct position.



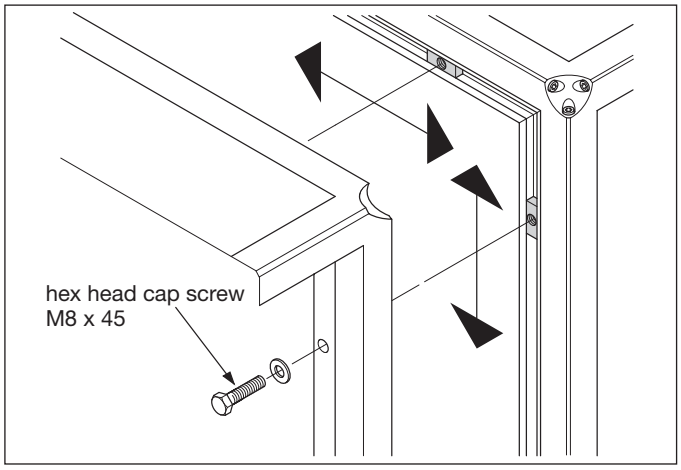
Extreme caution is advised with short, high sub-assemblies (e.g. rotating heat exchangers) because of danger of tipping. If possible the sub-assemblies are to be secured from the top.



Screwing the separated places together

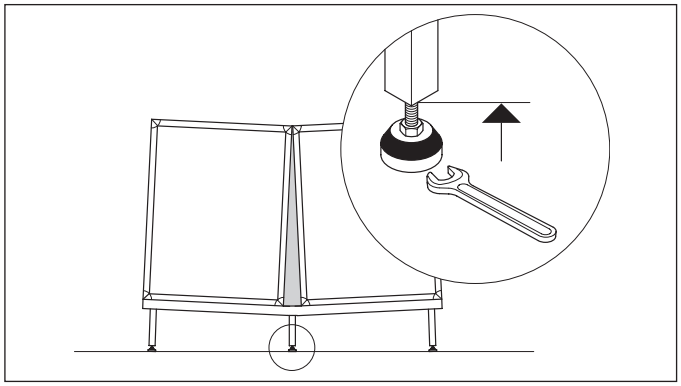


Prior to sliding the sub-assemblies together, the rubber seal and the correct position of the thread of the screw separation place is to be checked.



The unit parts are to be tightly pushed together prior to screwing. First tighten the lower and then the upper screws with a maximum torque of 22 Nm.

If a separated place cannot be completely pushed together (occurs mostly with heavier unit parts) the respective base foot is to be unscrewed.

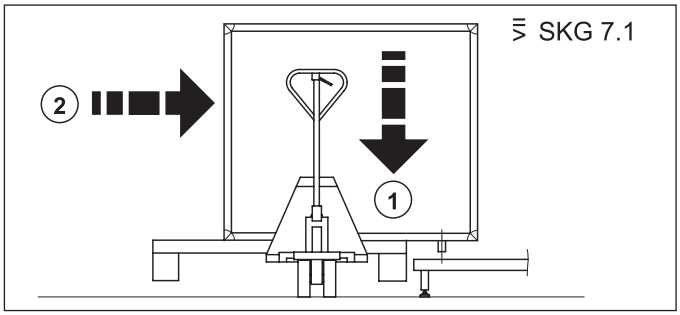


Unit parts with condensate drain pipes

The previously designated unit parts with condensate drain pipes on the bottom are to be set up on the base-frame with extra care.

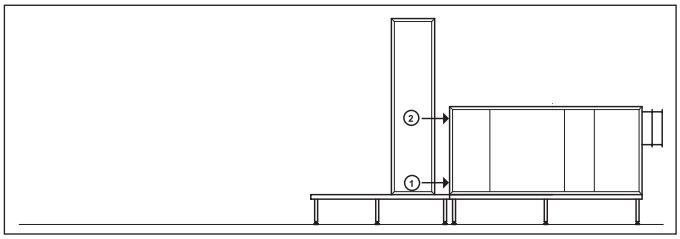
Unit parts up to SKG 4.2 are lifted to base height and carefully pushed on the base-frame up to the condensate pipe. Through simultaneous lifting and pushing the sub-assembly is brought to the base-frame.

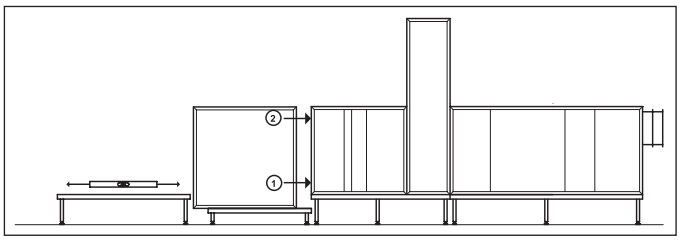
Units bigger than SKG 7.1 are pushed far enough from the palette while on the floor so that the unit part can be pushed onto the base-frame without any further lifting.



Unit parts with steps

The base part is to be leveled to the height of the already mounted base-frame. Place the unit part on the baseframe, align and screw down, as previously described.

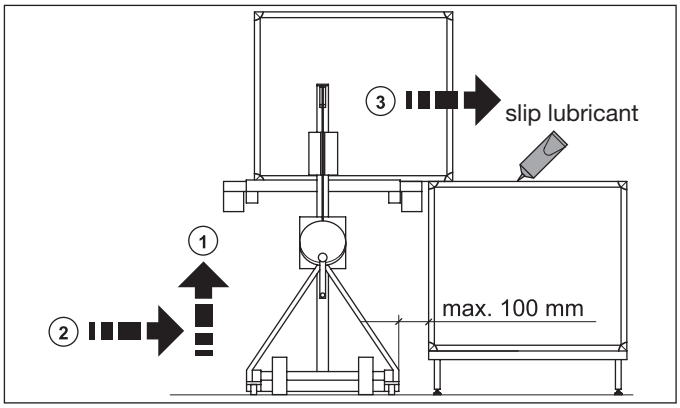


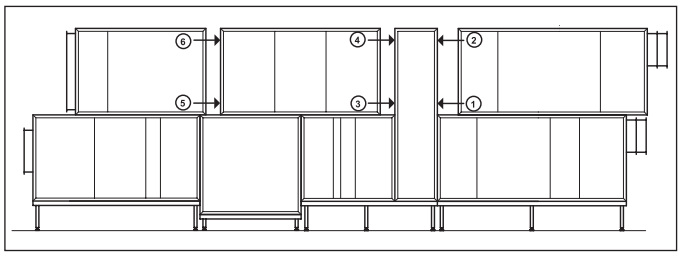


Doubledeck units

It is advisable to spread a slip lubricant on the upper section of the already mounted unit.

For hoisting to great heights, a forklift truck or hydraulic hoist suitable for the relevant weights is to be used.

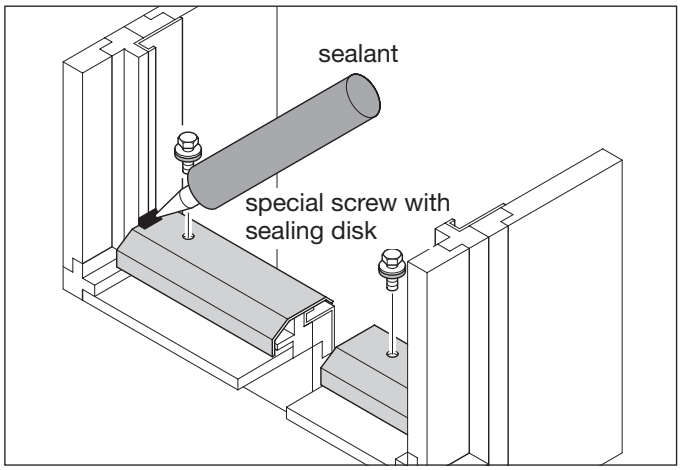




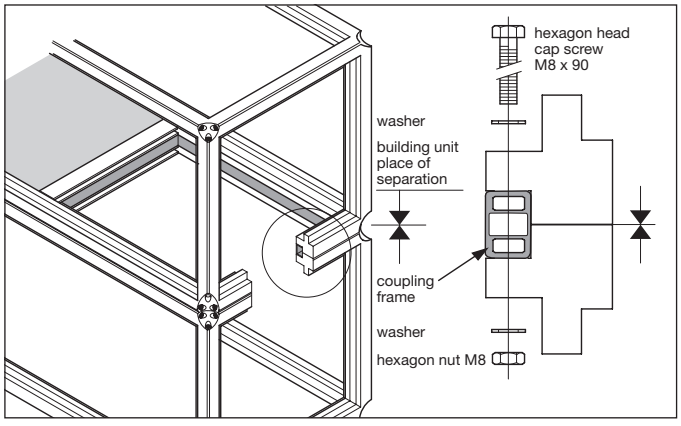
Special points of separation

To be able to screw up the points of separation, the case cover is first to be dismantled and the built-in components (air heater, air cooler, sound-absorbing baffles) are to be removed sideways.

Air cooler and air washer points of separation: After screwing the unit part, the loosely supplied cover sheet is to be screwed and sealed in the lower unit part above the point of separation.



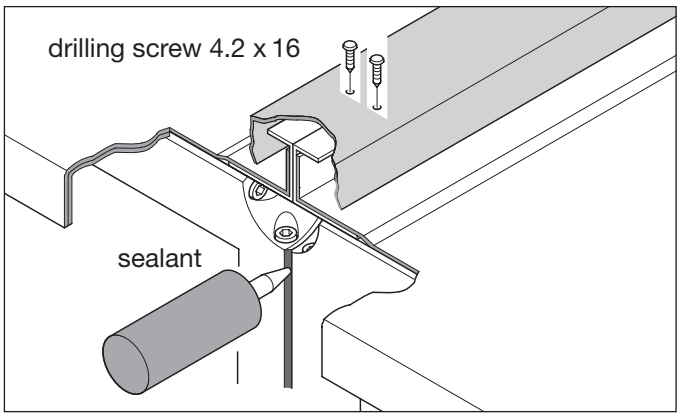
Coupling the vertical circulating-air coupling part and the deflecting part: Before the upper unit part is positioned, the loosely supplied coupling frame is to be placed on the section nose of the lower unit. Screw from above and below with a maximum torque of 22 Nm.



Units for outdoor installation

The mounting of the individual unit parts is made as previously described.

Sealing
The vertically and horizontal points of separation are to be sealed from outside with a weatherproof sealer.

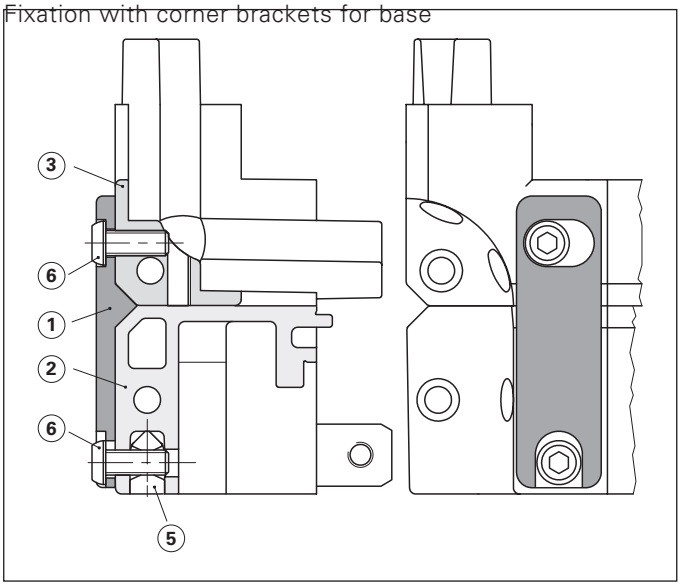


The loosely supplied cover sheet is to be screwed with the angle sheet of the roof's separation part.

Protection to move (no wind protection)

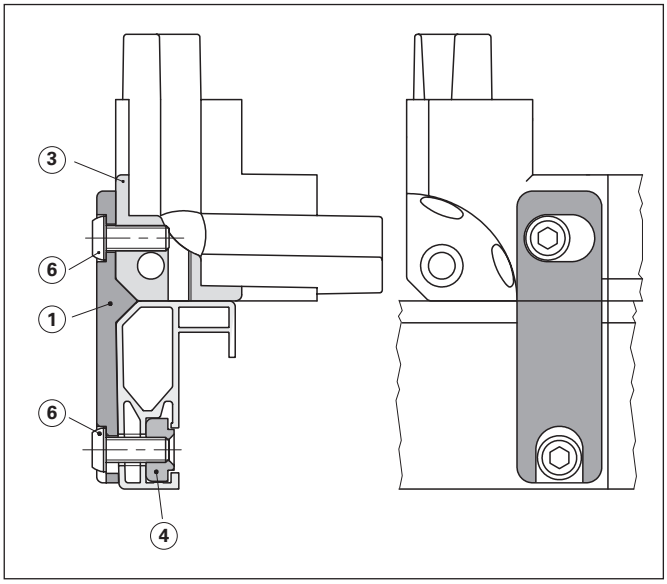
Fixation of assembly on base frame
The assembly and the base frame must be secured with the fixation tool; screws and fixation tool are included in the shipment.

Fixation with corner brackets for base



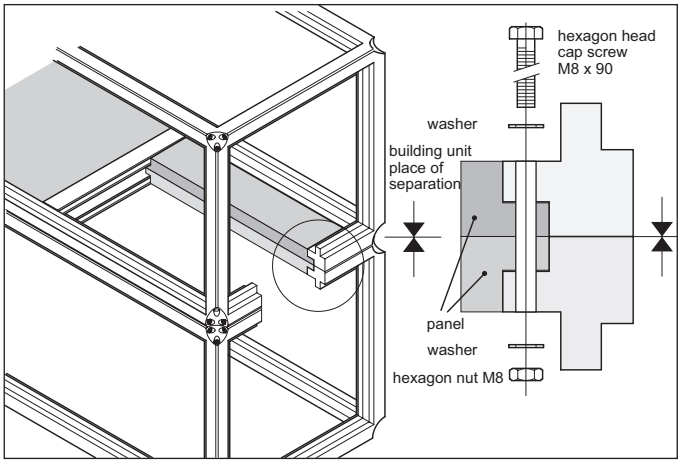
① Fixation tool
② Corner bracket with bore hole
③ Corner bracket with threads
⑤ Spacer and square nut
⑥ Screw (hexagon socket)

Fixation with frame profile for base



① Fixation tool
③ Corner bracket with threads
④ Screw (hexagon socket)
⑥ Screw (hexagon socket)

Fixation for two-story equipment
Screw from above and below with a maximum torque of 22 Nm. The respective bore holes in panels and frame are premade; Screws are included in the shipment.



Units for outdoor installation - wind protection

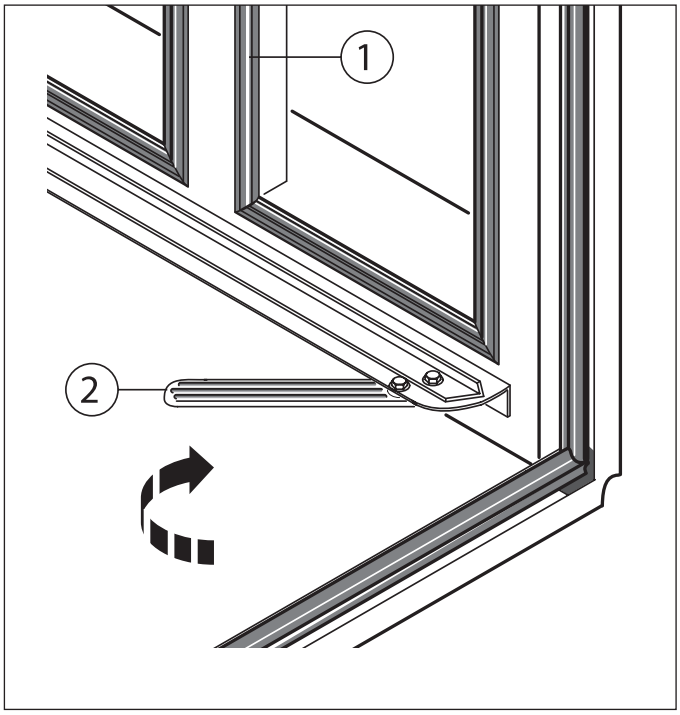
STOP **Air handling units placed outdoors in exposed areas like e.g. on flat roofs, must be secured against movement due to the wind.**

STOP **The need for wind protection devices for equipment placed outdoors is to be clarified on site. In order to ensure that the fastening point on the equipment can bear the required load, the on-site wind protection device must be discussed in advance with Seven-Air.**

Assembly Instructions

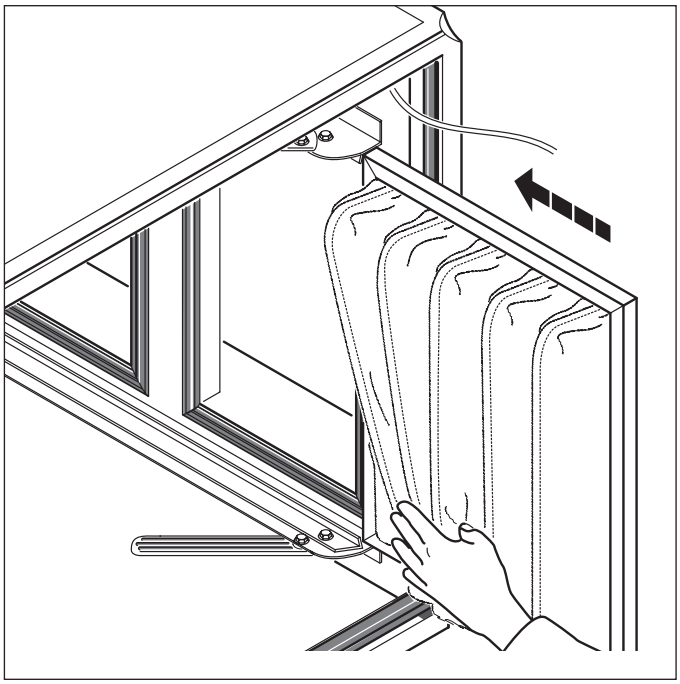
Filter installation „extractable“

- Check the filter gasket (1) for perfect condition.
- Open each pressure lever (2).



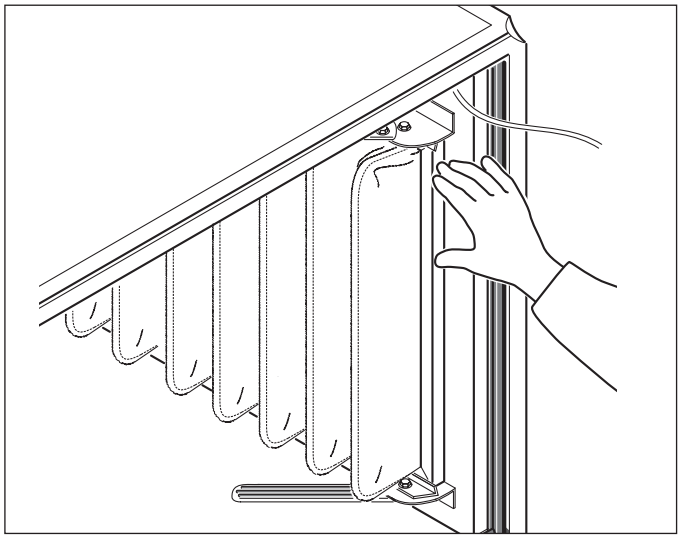
- Insert the filter into the guide rails.

Do not clamp the filter mat / filterpockets. Install filter pockets in an upright position.

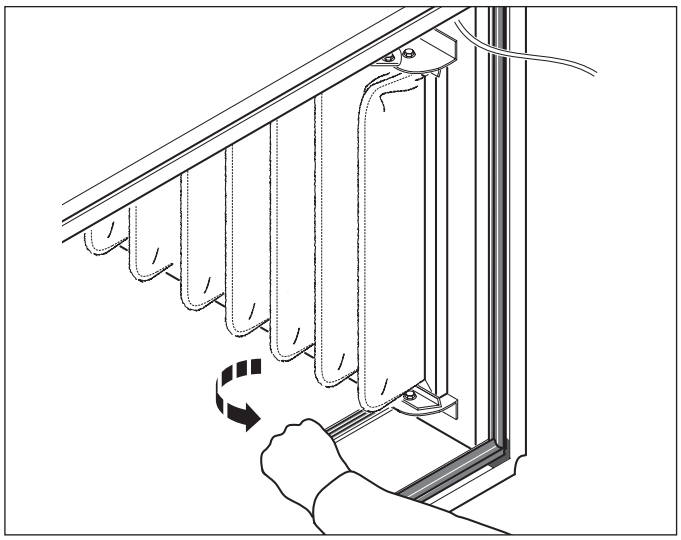


- Locate filters.

Follow the filters’ size sequence and do not keep a distance between the filter cells.

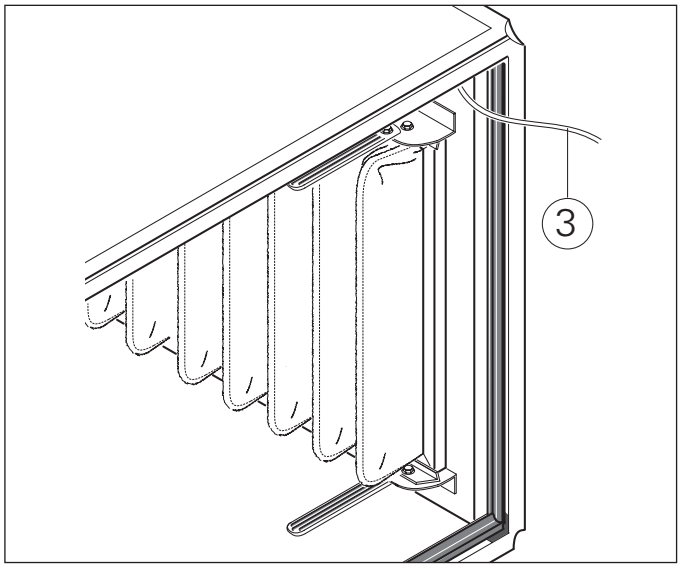


- Close the pressure lever.



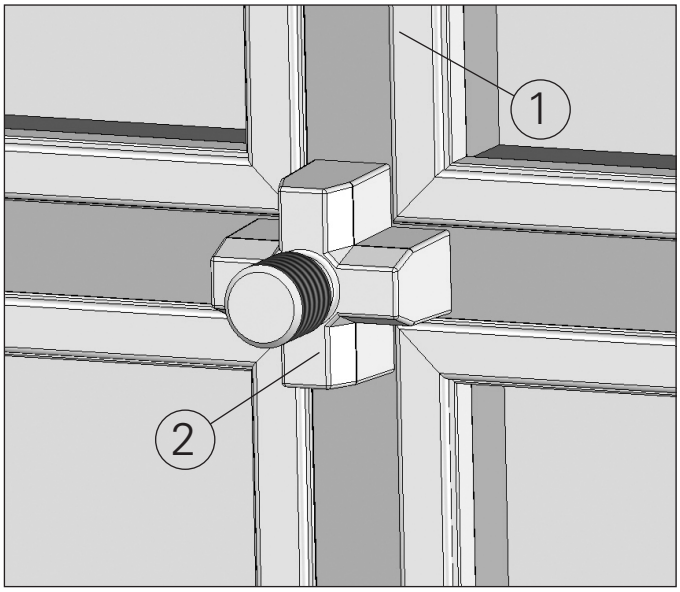
- Check each pressure lever for closed state (pull the lever).

Do not clamp the measuring hose (3) when closing the door.

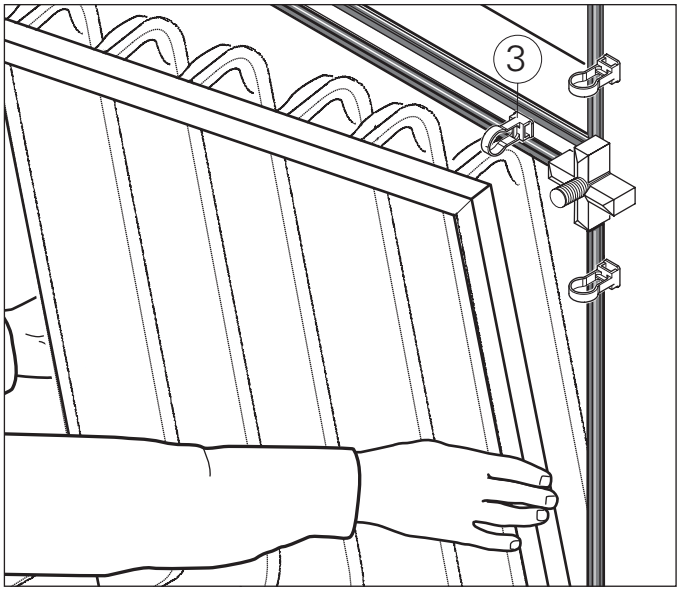


Filter installation „fixed

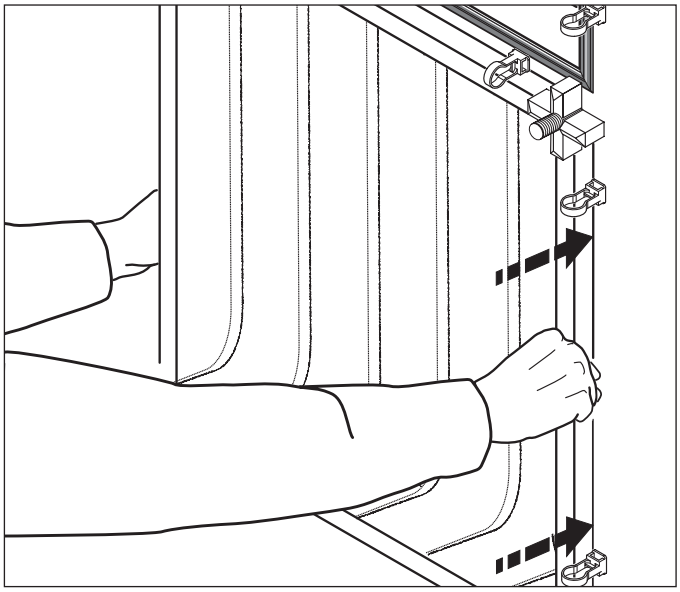
- Check the filter gasket (1) for perfect condition.
- Fixation cross device (2) is preassembled.



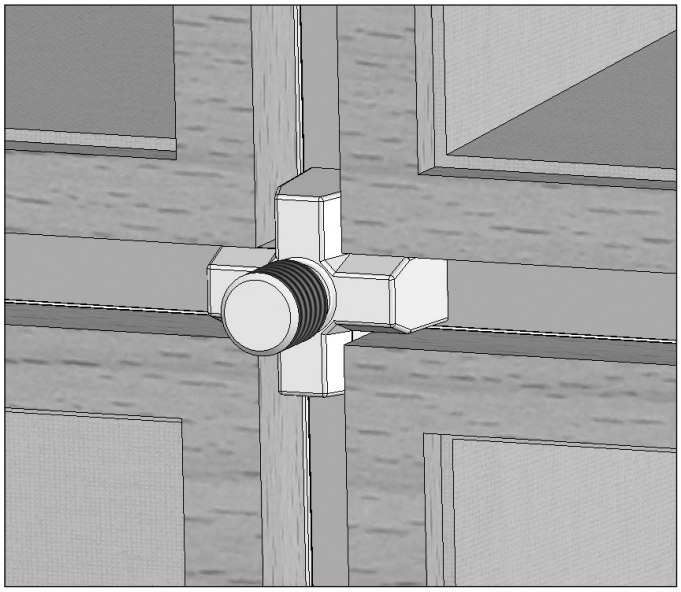
- Insert the filters into the holding clamps (3).



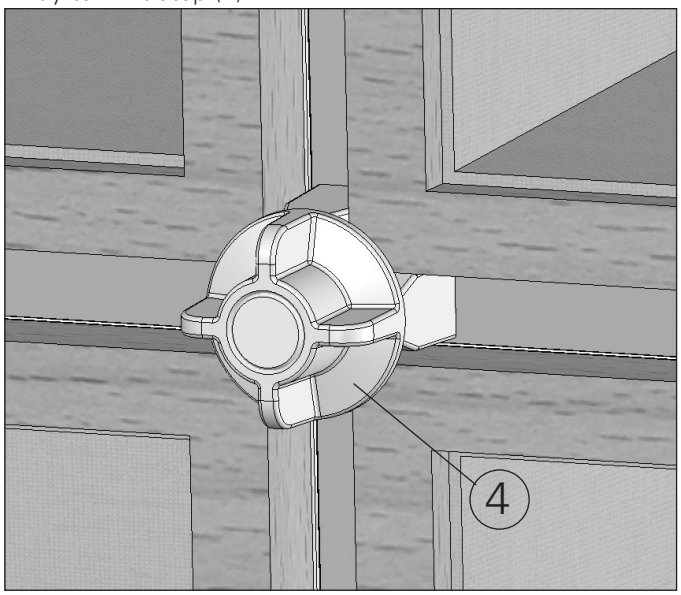
- Locate the filters in the holding clamps.



- Filter pushed in.

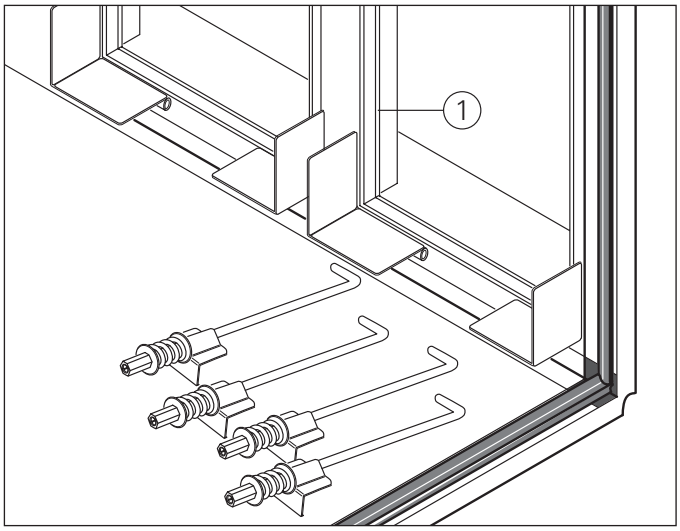


- To fix filter in place: twist the threaded cap by hand all the way to limit stop (4).



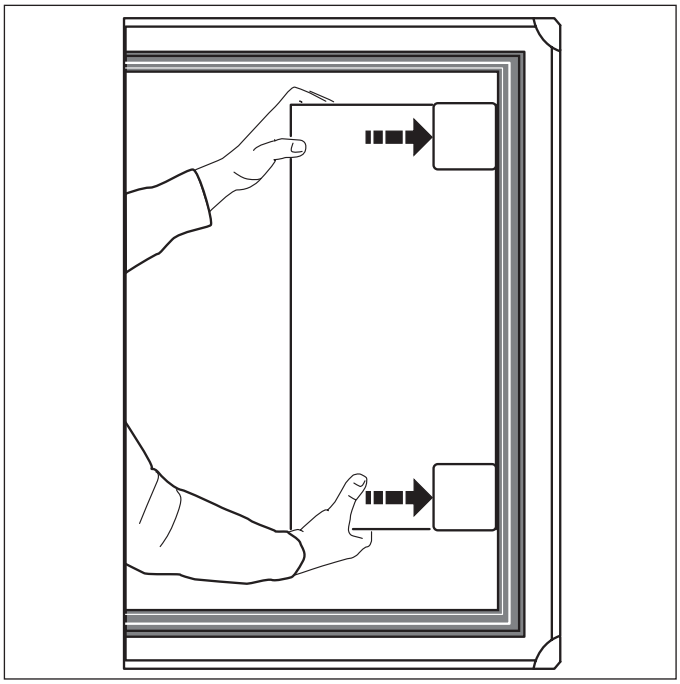
Installation of HEPA Filters

- Check the seal groove/filter gasket for perfect condition (1).
- Provide 4 threaded rods for each filter cell.

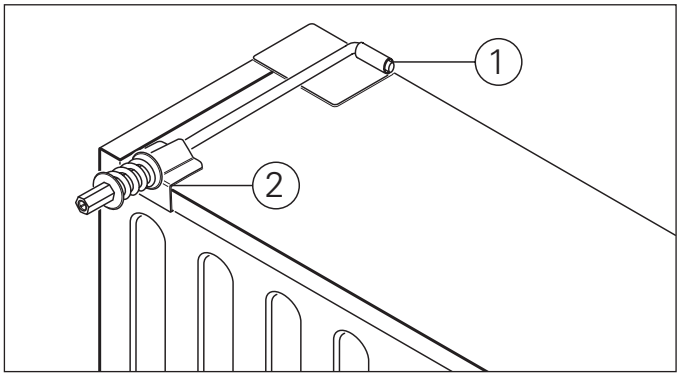


Centre the filter in the guiding corners.

You may need to pay attention to the filter's air direction marking.

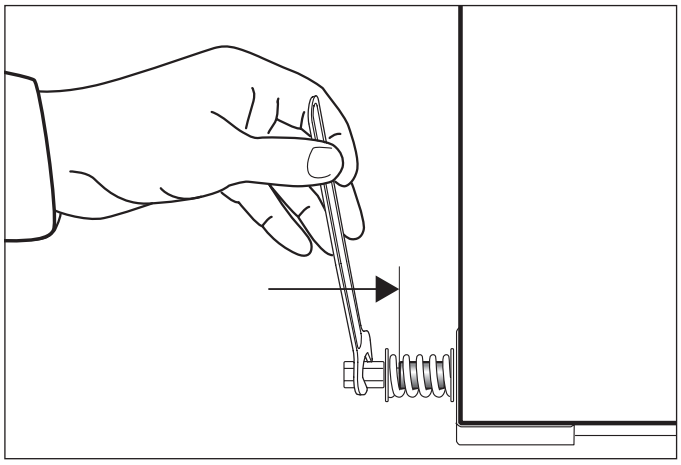


- Insert the threaded rods into the guide bushings (1).
- Locate holder at the filter frame (2).

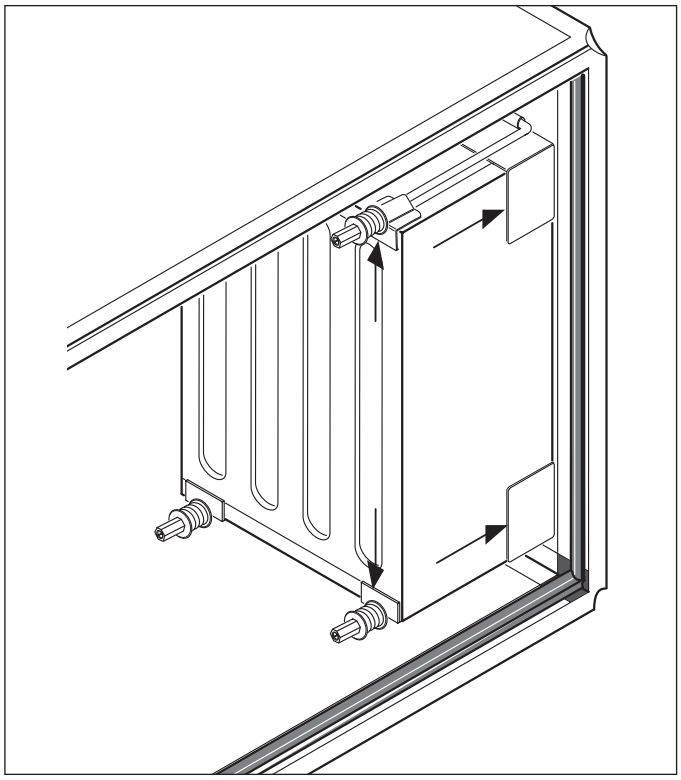


- Tighten captive nut to the distance bushing.

The captive nut does not need to be retightened before the next filter change (the spring constantly generates a clamping pressure).

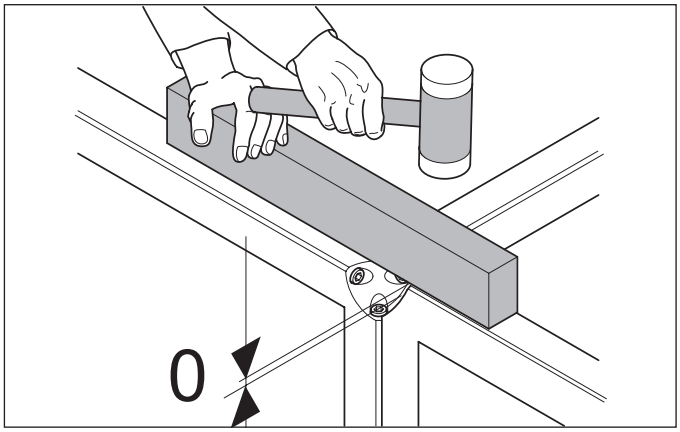


- Check each threaded rod and filter cell for proper installation.

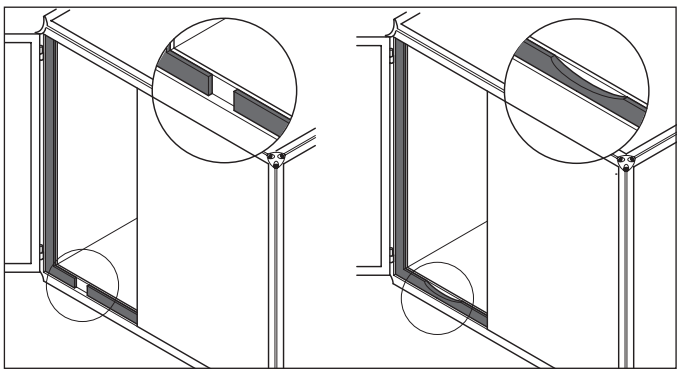


Post erection work

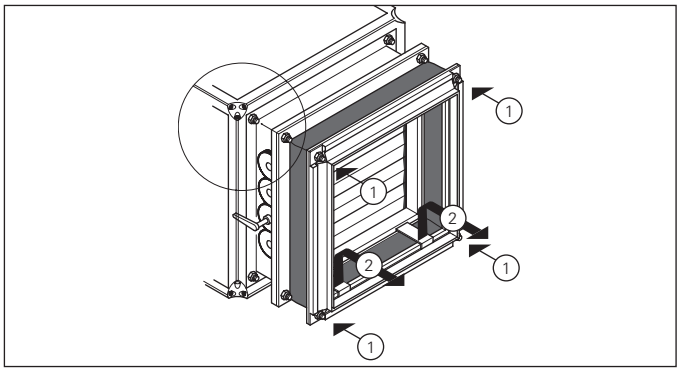
Small corrections to frame sections and corner joints that are not absolutely flush or in alignment with the base-frame or unit frame can be made using the plastic hammer and with a squared strip of timber as an underlay.



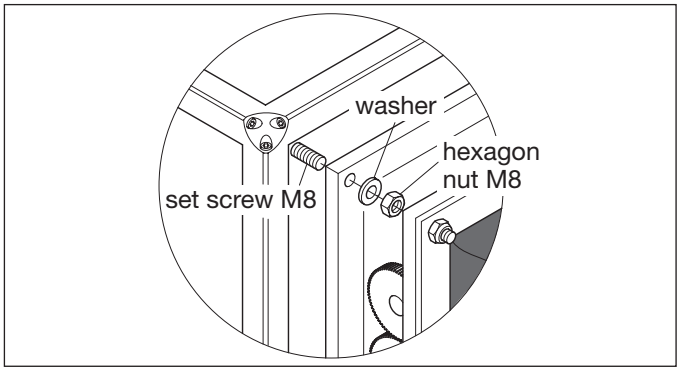
Check the door seals on the inspection doors
- Impact points of the seals are to be pushed together.
- Press the seals in the frame grooves.



Remove the collar clips before mounting the flexible connection.



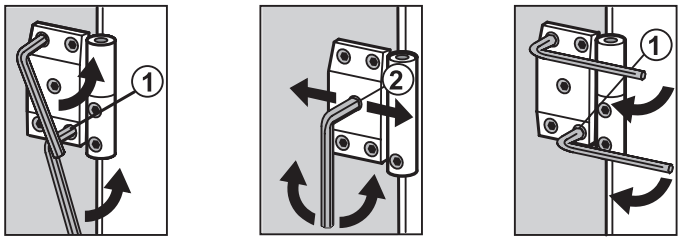
Loosely supplied duct connecting elements (dampers flexible connections) are to be screwed to the unit.



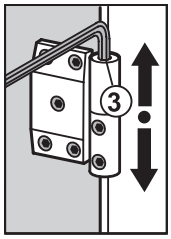
Adjusting the door hinges

The hinges of the inspection doors are two-dimensionally adjustable.
The alignment of the doors can be adjusted with a No. 4 Allan Key.

Horizontal adjustment
Loosen the fastening screws (1) about 90° each.
Adjust the horizontal position with center screw (2).
Tighten the fastening screws (1) again.

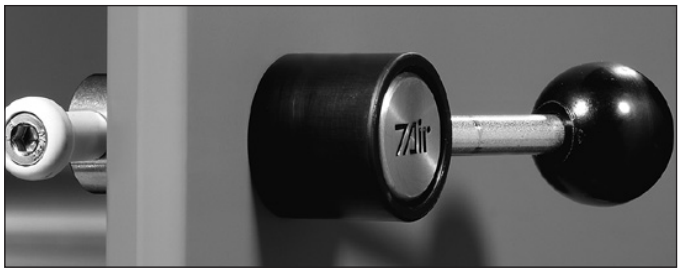


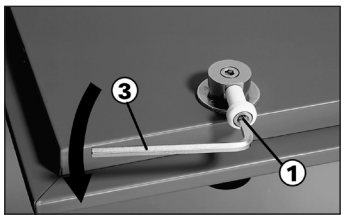
Vertical adjustment
Set height with the adjusting screw (3).



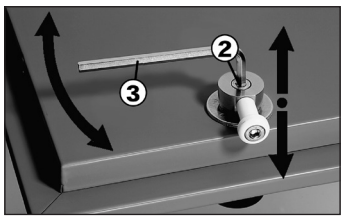
Adjusting the door locks

The locks of the inspection doors are adjustable. The contact pressure on the door seal can be adjusted with a No. 6 Allan Key.

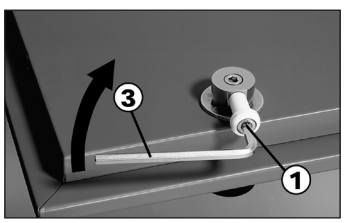




Loosen the arresting screw (1) on the pressure reel with a No. 3 hexagon socket screw wrench by about 90°.



Turn adjusting screw (2) with the Allan Key (3) until the desired contact pressure is reached.



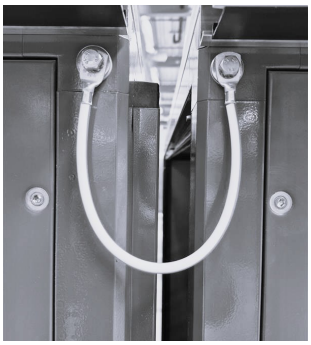
Re-tighten arresting screw (1).

Appliance connections

Potential equalisation

To divert fault currents and dangerous electrostatic charges, the Monobloc device is to be properly integrated into the measure of local potential compensation. The grounding cable connection has to be fix on the device profile frame.

For Air handling unit with coated profile frames, all assemblies must be connected with an equipotential bonding cable (see image). The connection holes with cables and screws are prepared or already present on the Air handling unit. Only when all connection cables are correctly installed is equipotential bonding ensured for the entire Air handling unit.



Duct connections

Ventilation ducts must be assembled in such a way that the Air handling unit appliances are not put under strain by their weight. The flexible sleeve is used to compensate for slight misalignments (up to max. 20 mm) between the Monobloc and the trunking. However, it must not be subjected to any mechanical loads such as tensile or lateral forces. The potential equalisation cable is supplied with the flexible sleeves and is to be mounted as intended (bypassing the non-conductive sleeve).

Heat exchanger connections

Water, steam and refrigeration connections must only be carried out by qualified specialist personnel.

All heat exchangers must be connected according to the counterflow principle. When air enters the heat exchanger, the medium return must always be connected, and when air exits, the medium supply must always be connected (see also unit diagram). Permissible connection principles are listed below for the respective medium types. Deviations from these can be found in the respective unit diagram.

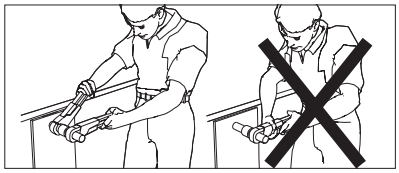
The dead weight and expansion forces of the hydraulic system must under no circumstances place a load on the heat exchanger connection ports.

The connections must be designed so that the heat exchanger can be easily removed at a later date and so that piping, including its insulation, does not obstruct adjacent access panels or prevent them from opening.

Water-brine heat exchanger

Water and brine heat exchanger must always be connected in counterflow in the direction of the arrows on the connection points. Inlet and outlet should be labelled. It must be possible for the hydraulic network to be ventilated at its highest point and drained at the lowest points.

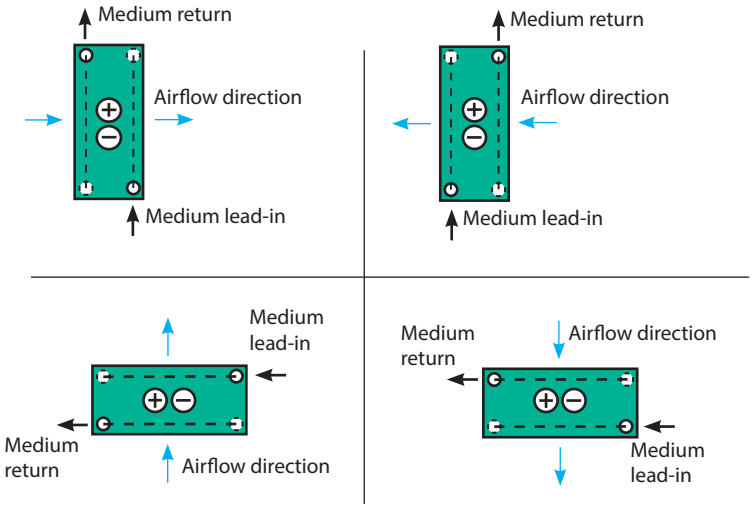
When tightening the screwed pipe fittings the connections must always be held using a pipe wrench.



Victaulic couplings are used from 2.5 inches upwards. Tighten until the two coupling halves touch each other or until no air gap is visible.



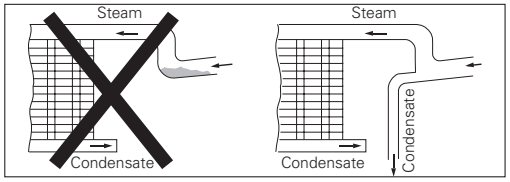
Water / Brine Connection Diagram:



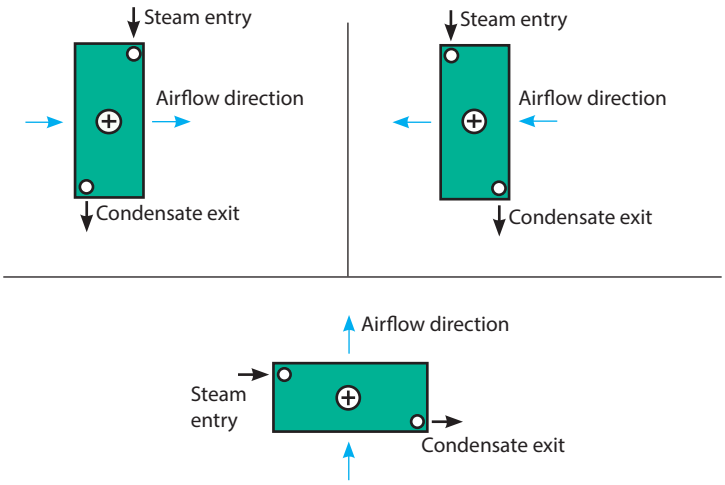
Steam heat exchanger

Condensation in the steam heat exchanger can lead to a number of problems: Loss of power, corrosion and erosion, liquid impacts.

The steam pipe must be run in a gradient down to the heat exchanger and must be drained before reaching the steam valve.
The condensation pipe must be run in a gradient away from the air heater to the steam trap



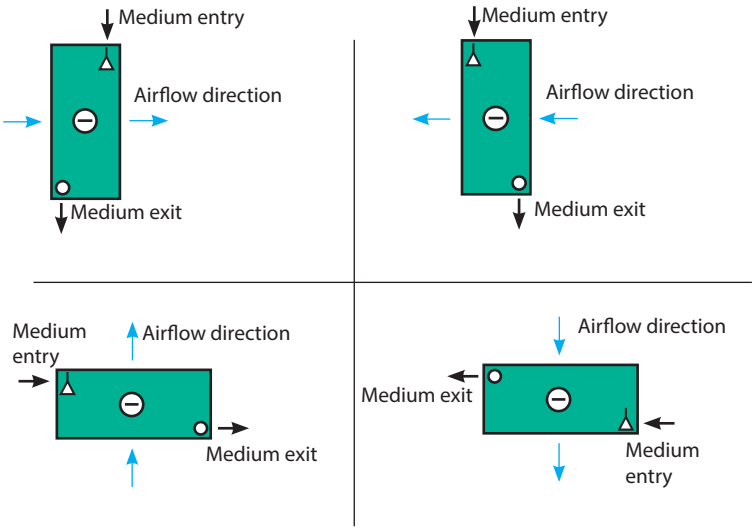
Steam Connection Diagram:



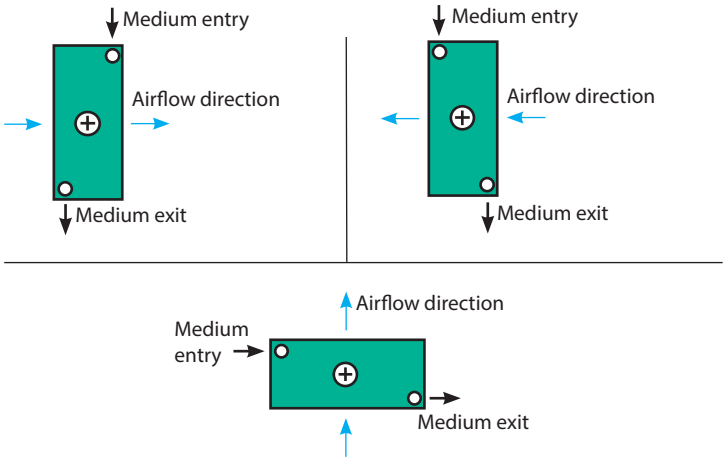
Refrigeration heat exchanger

Refrigeration coils are filled with inert gas and can only be opened immediately before starting to assemble the refrigeration network. Before soldering, the connections must be cleaned to remove all grease and dyes.

Conncection Diagram for Refrigerant Direct Evaporators:



Connection Diagram for Refrigerant Condenser:



Siphoning

A siphon must be connected at the water drain pipe for the cooling coil or humidifier. The following points must be observed:

The appliance must be mounted on a base or base frame so that it is high enough to attach the siphon.

Before the commissioning as well as after a long standstill of the RLT unit, the condensate drip trays and the siphons are to be checked for cleanliness and unobstructed drain. For a smooth operation, the siphons must be filled with water. Filling and refilling should be realized via the condensate drip tray.

Siphons that are only partially filled will be emptied if there is negative pressure in the air handling unit or blown out if there is overpressure.

In the case of a siphon that has not been filled or has been emptied, the water cannot drain away. This results in the appliance or the equipment room becoming flooded.

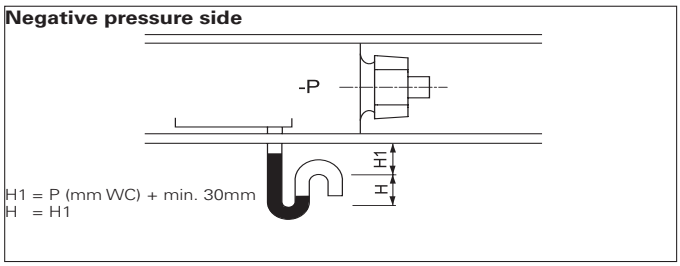
In the case of large control centres with a large number of appliances it is practicable to attach a refilling and control connection to the siphon.

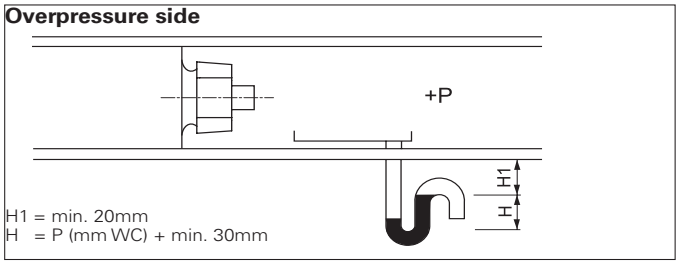
Multiple drain pipes from different pressure zones within the unit must not be connected to a single trap.

The siphon and drain pipes must not be exposed to temperatures below 0°C. In the case of external installations the siphon and drain pipes must be insulated.

Plugs on condensate drip tray run-outs must be removed before the siphon is connected.

The effective siphoning height H (mm) must be at least as high as the maximum negative or overpressure mm WC in the appliance plus 30mm (1mm WC ≅ 10 Pa).





Tip:
To easily calculate the required siphon height, the "**7Air-Calculator"** app is available for iPhone and Android in the app stores.

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These assembly instructions are a component of the delivery. Read them through carefully in order to carry out the assembly correctly and without danger.

Keep these assembly instructions ready at all times. We reserve the right to make alterations. No part of these assembly instructions may be reproduced in any way for any purpose whatever without prior consent of the producer.

STOP This symbol indicates a safety hint, the disregard of which could cause injury to persons.

This symbol indicates a safety hint on avoiding damage to the appliance.

This symbol draws attention to the prevention of technical faults.

In addition to the details specified in these instructions all local laws, regulations and guidelines as well as all internal work, operational, and safety regulations issued by the operating company must be observed.

Note
The information given in this manual is correct at the time of going to press. Seven-Air reserves the right to change the design and equipment of the units at any time.

In case of questions and uncertainties as well as for the delivery of replacement material, contact our customer service (see address above).
For efficient and competent service, the order number on the type plate on the unit is required.

04/2026