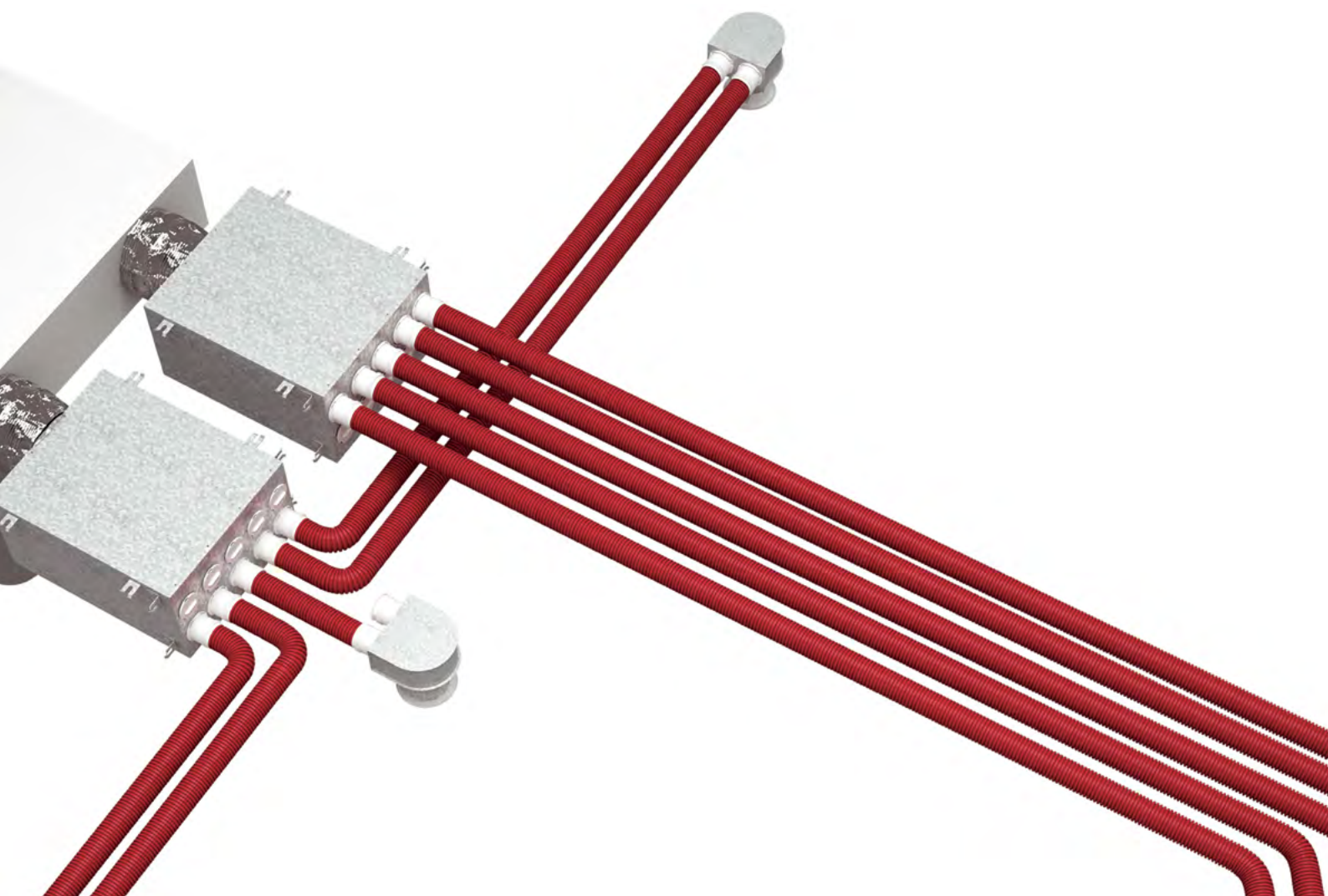


INSTALLATION INSTRUCTION

Modular air distribution system



FlexiVent

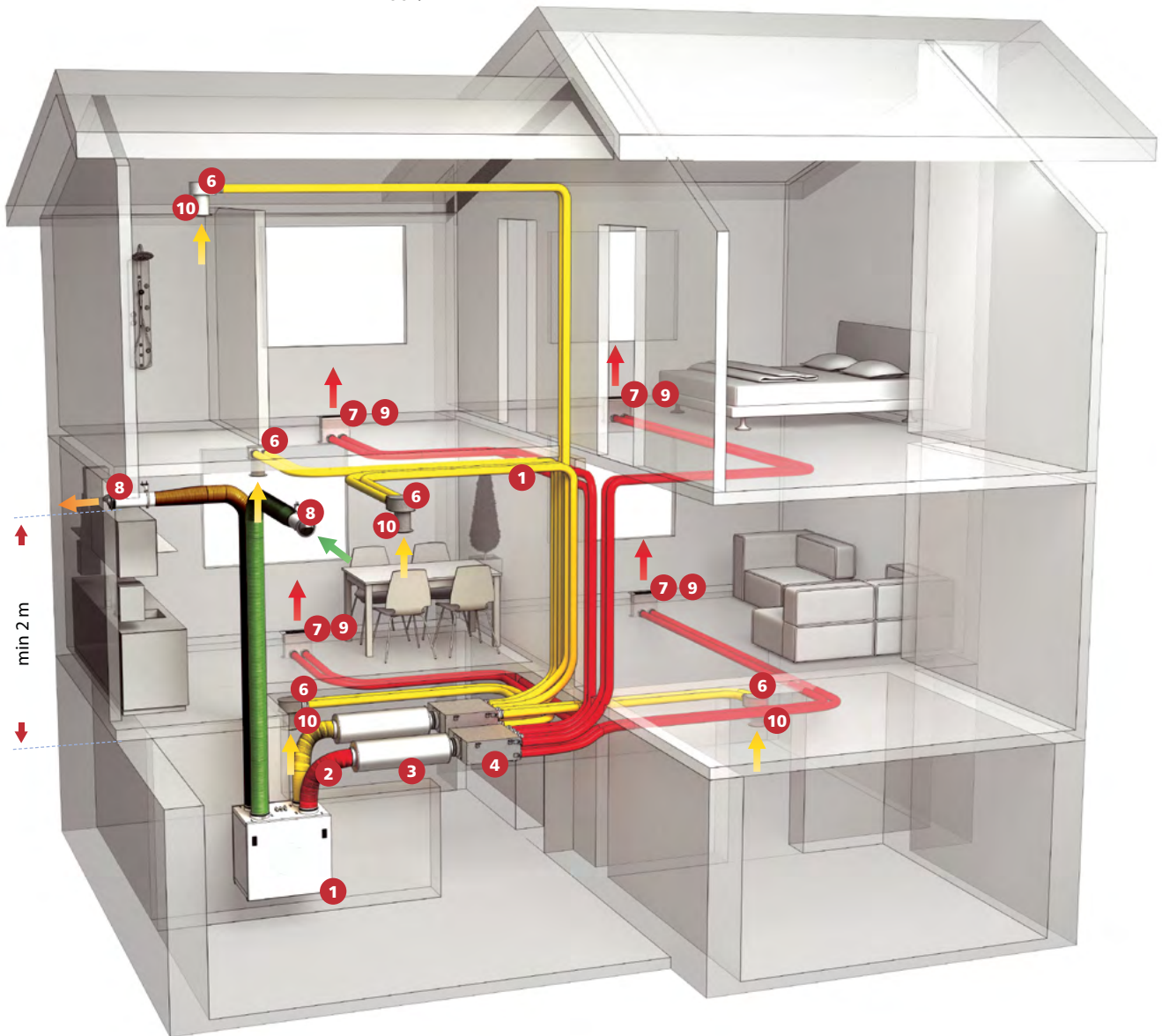


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TYPICAL CONFIGURATION

■ Intake air
 ■ Exhaust air
 ■ Extract air
 ■ Supply air



Air handling unit with heat recovery



Flexible insulated air duct



Silencer



Air distribution box



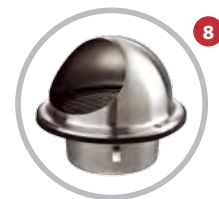
Semi-rigid air duct



Ceiling-mounted connector



Floor-mounted connector



Outer ventilation hood



Floor-mounted grille



Extract air disc valve

MOUNTING RECOMMENDATIONS FOR SUPPLY AND EXHAUST DIFFUSERS

when selecting supply and exhaust grilles and disk valves it is necessary to take into account the following factors:

- noise level;
- air flow;
- air jet spread.

Mounting recommendations for supply grilles and disk valves

- Depending on the air jet spread the supply grilles and disk valves can be mounted on the ceiling, on the wall, or in the floor near inner or outer walls.
- If supply grilles are mounted in the floor it is recommended to install a floor heating system to avoid the effect of "a local cold air lake".
- The distance to the area where people are situated should be not less than 1 m.
- Supplying air to the area where people are situated may cause draughts. To avoid this it is necessary to provide low air jet speed. The temperature of the air jet should be close to the air temperature in the room.
- It is forbidden to mount supply grilles and disk valves behind the curtains, wardrobes, beams.
- The distance from supply disk valves to the corners of a room should be not less than 500 mm in order to avoid uncomfortable conditions caused by an air jet.
- Supply grilles are allowed to be mounted nearer, depending on the type of an air jet.

Mounting recommendations for exhaust grilles and disk valves

- Exhaust grilles and disk valves should be mounted on the ceiling or on the wall as high as possible.
- The distance to the corners of a room should be not less than 200 mm.
- The exhaust ventilation elements should be installed near the sources of odours and dampness.
- It is recommended to install exhaust grilles and disk valves above the bath or the shower.
- It is not recommended to install exhaust ventilation elements above the radiator. It can lead to unnecessary heat loss.
- It is strictly forbidden to install an exhaust ventilation element above the cooker in a kitchen. It can lead to grease settling in the ventilation system.
- If air in the room abounds in sprayed fat particles it is recommended to use exhaust elements with in-built replaceable filters.

Recommendations on disposition of supply and exhaust diffusers

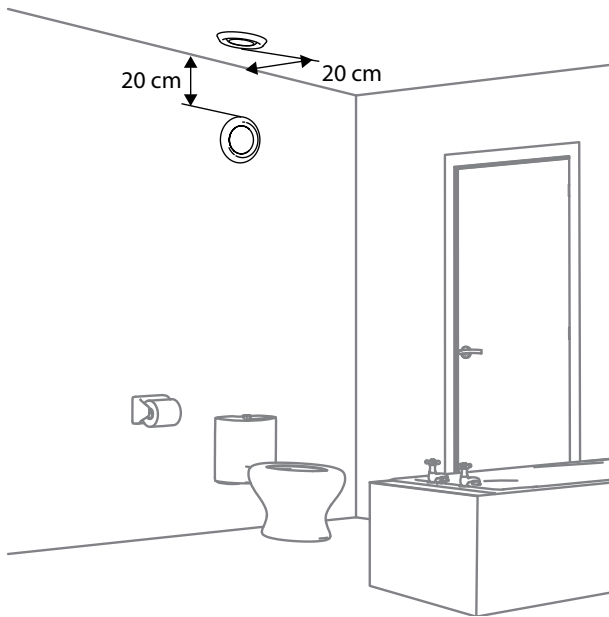
Air extract

Kitchen
Bathroom
Toilet
Pantry
Laundry
Sauna

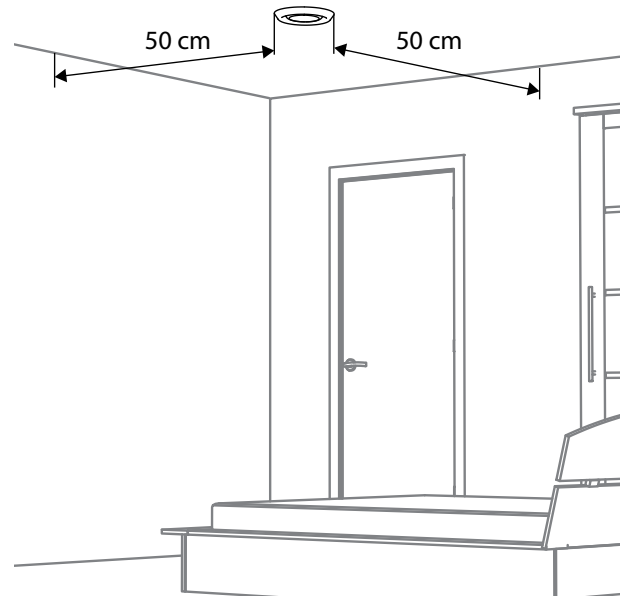
Air supply

Hallway
Dining room
Bedroom
Nursery
Office
Living room

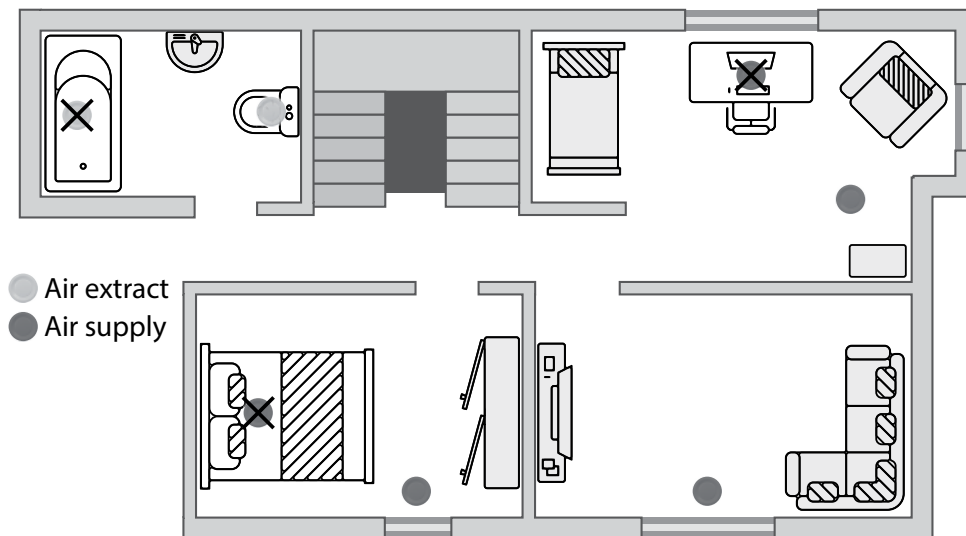
Exhaust grille disposition



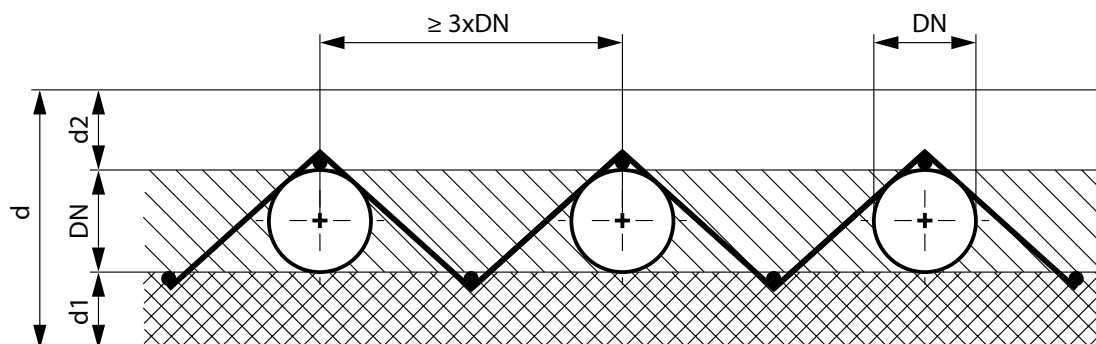
Supply air disk valve disposition



Recommendations on disposition for supply and exhaust grilles



Recommendations on calculation of floor slab thickness



Minimum thickness of a steel-reinforced concrete slab with air ducts containing combustible components according to DIN 4120

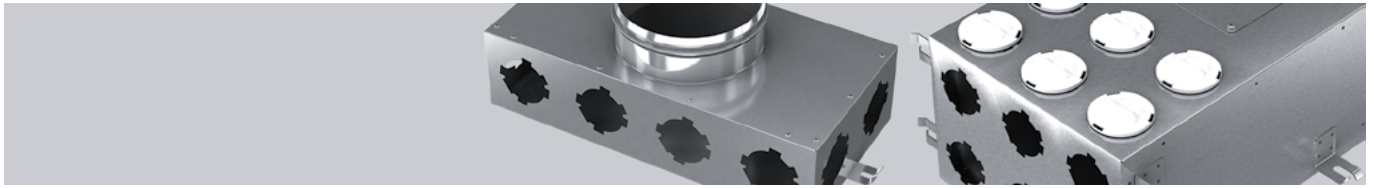
| Design peculiarities | Fire resistance class | | | | | |
|---|-------------------------|----|------------------------------|----|---|----|
| | One family house F 0 | | Low-rise buildings F 30-A | | High-rise buildings from 5 storeys F 90-A | |
| | d1 | d2 | d1 | d2 | d1 | d2 |
| Min. depth for air duct installation* [mm] | 50 | | 50 | | 50 | |
| Min. slab [mm] | | 50 | | 50 | | 50 |
| Min. recommended thickness with no account taken of the intersection of wires through the corrugated pipes for electric wiring [mm] | d = 180 | | d = 220 | | d = 240 | |
| | d = 200 | | d = 240 | | d = 260 | |

DN - Ø 63 or 75 mm air duct

Data in the table is appropriate for the mounting into the monolithic slab as well.

*Data is valid only in the case of mounting of jointless screed floor upon insulated basis (floating floor) with a minimum thickness of 25 mm.

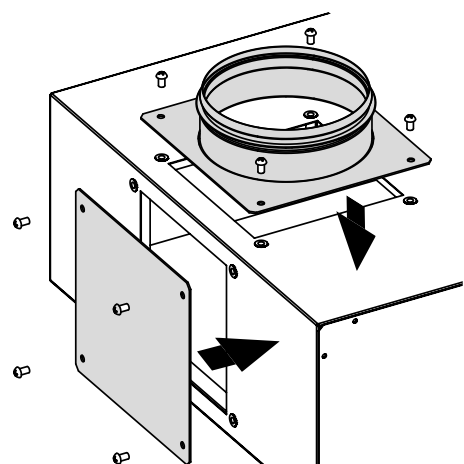
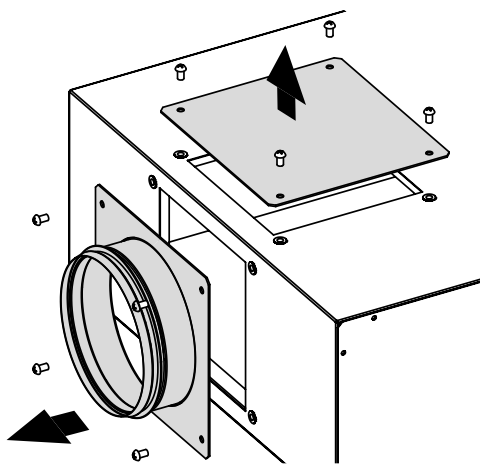
METAL AIR DISTRIBUTION BOX



1 PREPARATION FOR MOUNTING

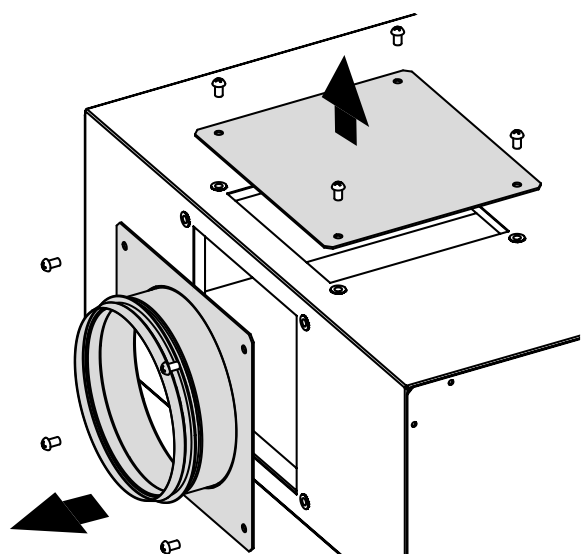
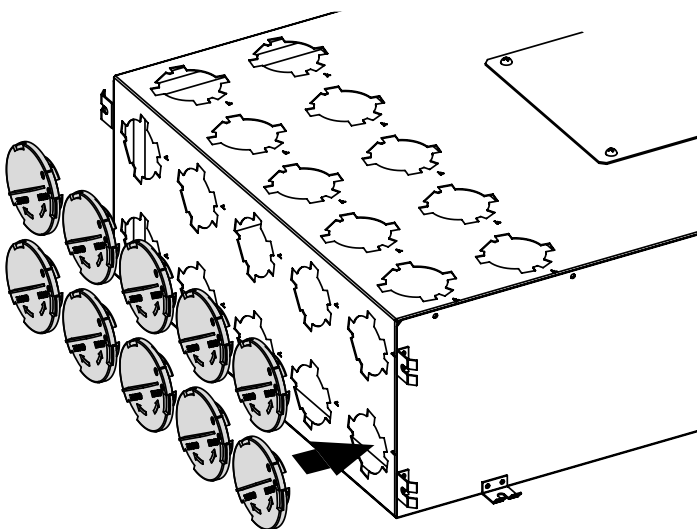
If the air distribution box design enables changing location of the spigot, follow the steps:

1. Unscrew the service panel and the spigot and disconnect them from the air distribution box.
2. Change location of the spigot and the service panel and fix them with screws to the casing of the air distribution box.



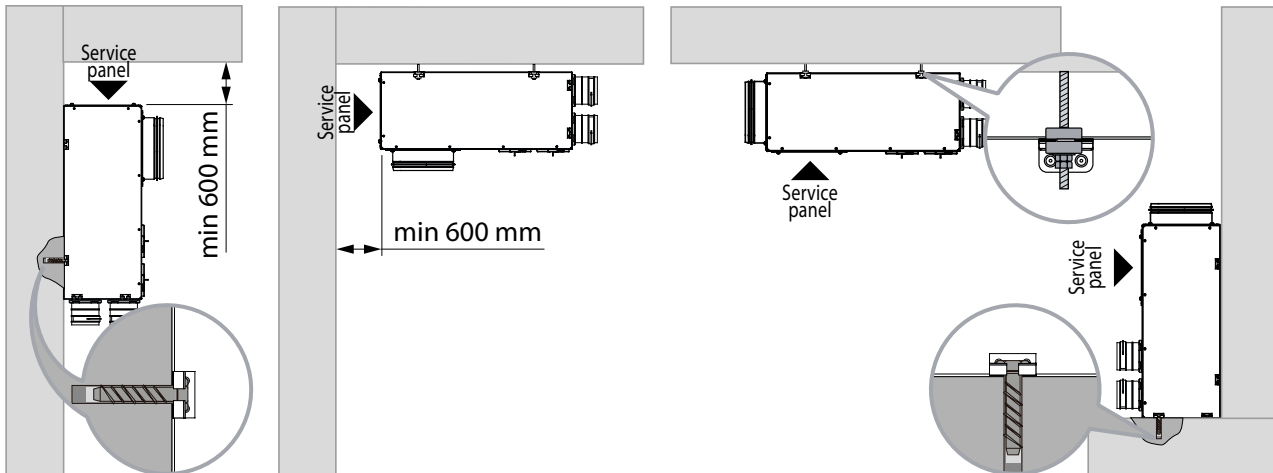
Reinstall the caps (included in the delivery set) depending on the way of mounting of the air distribution box:

1. Remove the caps from the mounting surface to be used for flange connection.
2. Install the removed caps on the surface not to be used for flange connection (refer to Installation of duct caps).







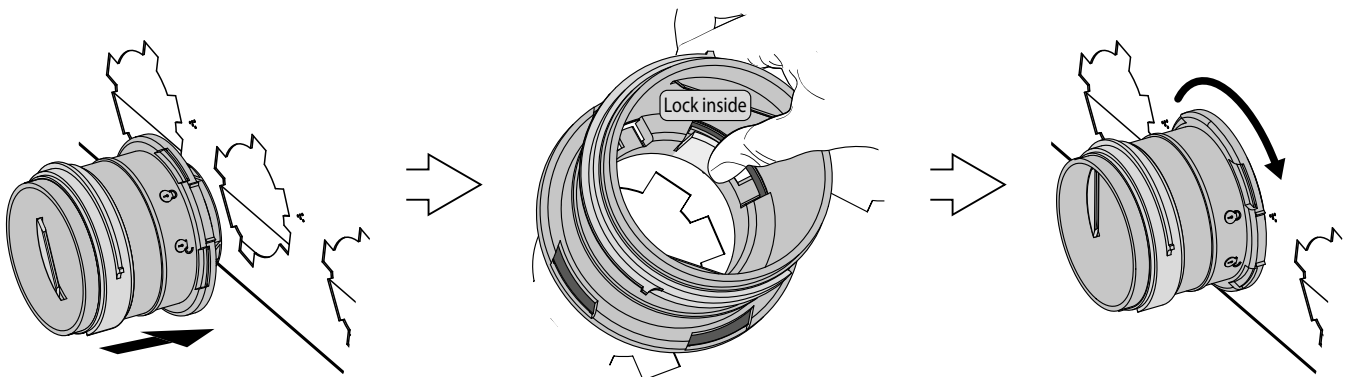
2 INSTALLATION OF AN AIR DISTRIBUTION BOX ON THE MOUNTING SURFACE

The air distribution box is designed for wall, floor, and ceiling mounting. Fix the air distribution box to the mounting surface using bolts or threaded rods (not included in the delivery set). While choosing fasteners consider the material of the mounting surface and the unit weight.





3 INSTALLATION OF FLANGES (not included in the delivery set)

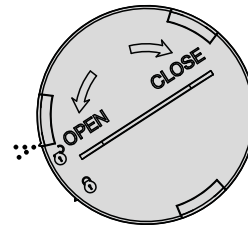
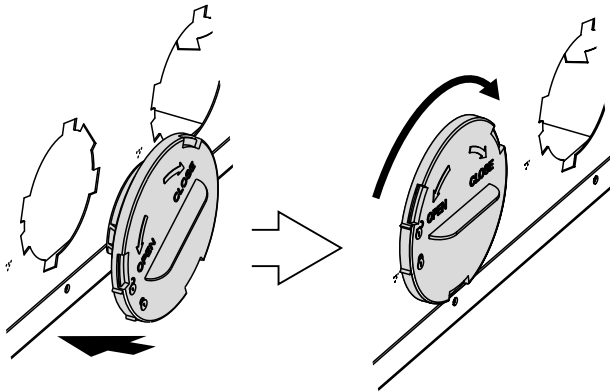
Insert the flange in the recessed vent in such a way that the open lock symbol  on the flange is located opposite the pointer  on the casing. Press the lock inside the flange and rotate the flange for fixation in the opening clockwise in such a way so that the closed lock symbol  on the flange is located opposite the pointer  on the casing.



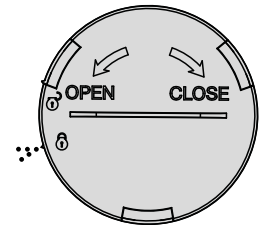
4 INSTALLATION OF DUCT CAPS (not included in the delivery set)

Install the caps into the openings not to be used for flange connection.

Insert the cap in the recessed vent and rotate it clockwise in such a way so that the closed lock symbol  on the cap is located opposite the pointer  on the casing.



Cap is open



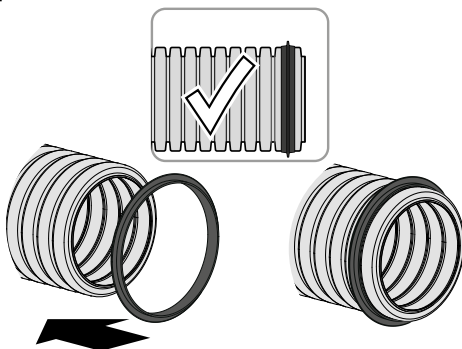
Cap is closed

5 CONNECTION OF SEMI-RIGID AIR DUCTS (specially ordered accessory)

1. Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.

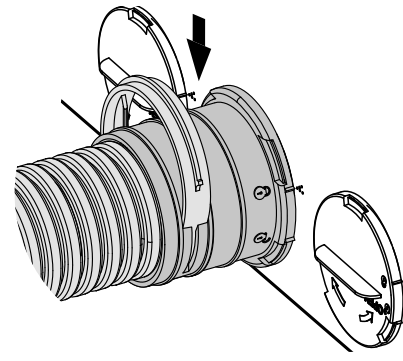
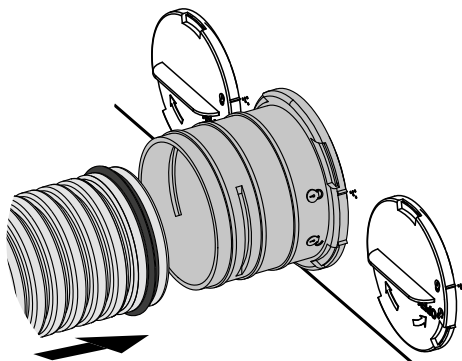
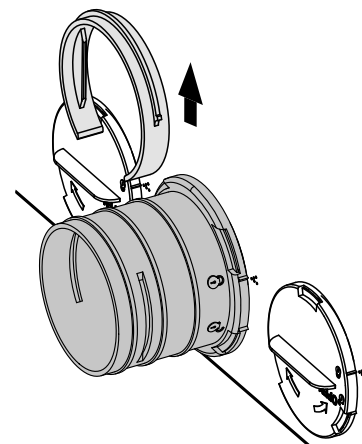
2. Remove the lock ring (supplied with the flanges).

WARNING! If the ducts and the air distribution box are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange using a cold shrink tape.



3. Insert the duct with the sealing ring into the flange.

4. Secure the duct using the lock ring.



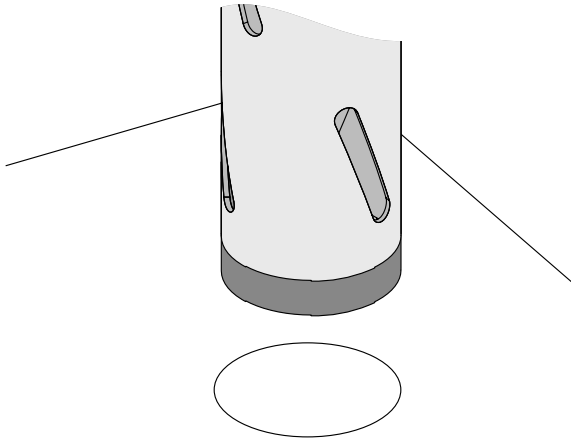
5. Mark the air ducts from both sides, indicating the type of a premise and a number.

CEILING-MOUNTED METAL CONNECTOR

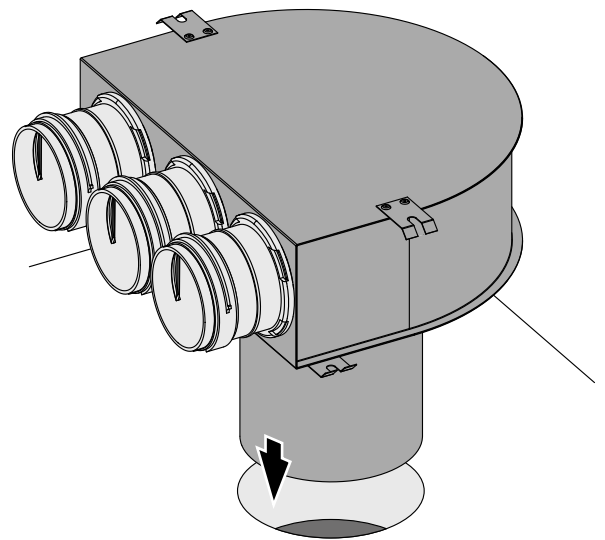


Mounting of the connector in the intermediate concrete slab

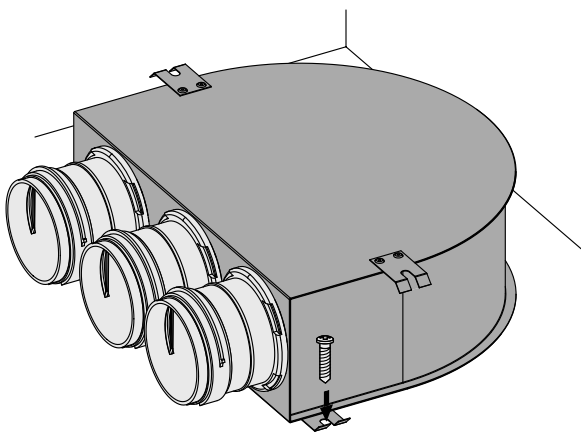
1 Bore a \varnothing 130 mm core hole in the slab for installation of the connector spigot.



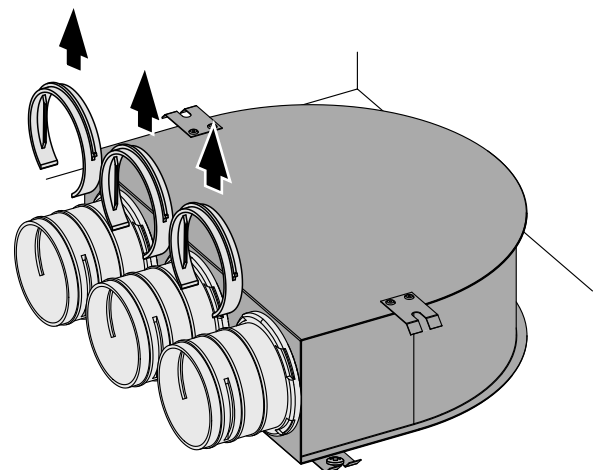
2 Insert the spigot in the opening. Seal the gaps between the spigot surface and concrete with sealant (mounting foam).



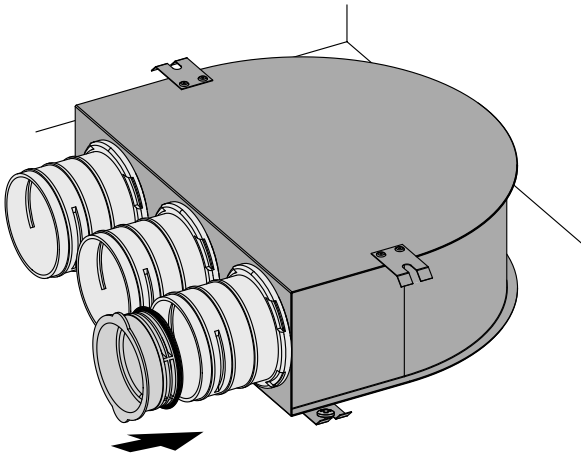
3 Attach the connector to the mounting surface using concrete nails.



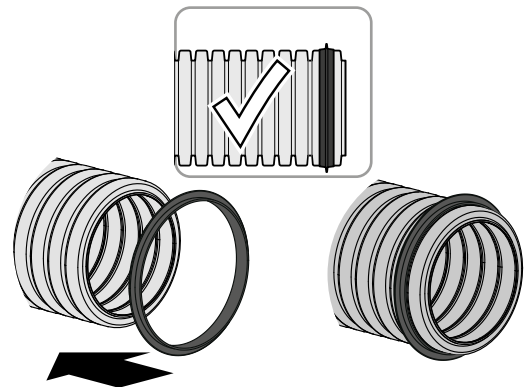
4 Remove the lock rings from the flanges (supplied with the flanges).



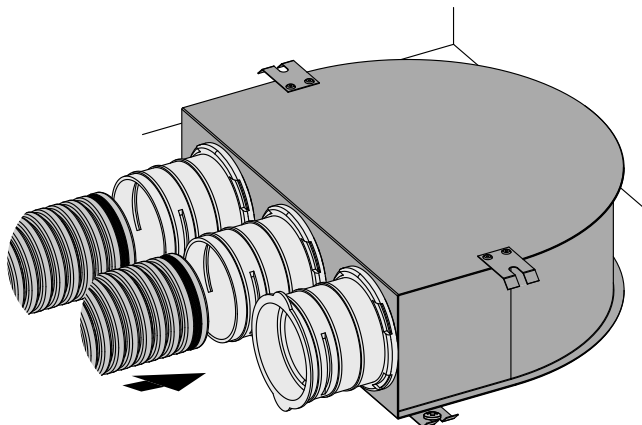
- 5** Cover the unused flanges with caps (not included in the delivery set).



- 6** Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.

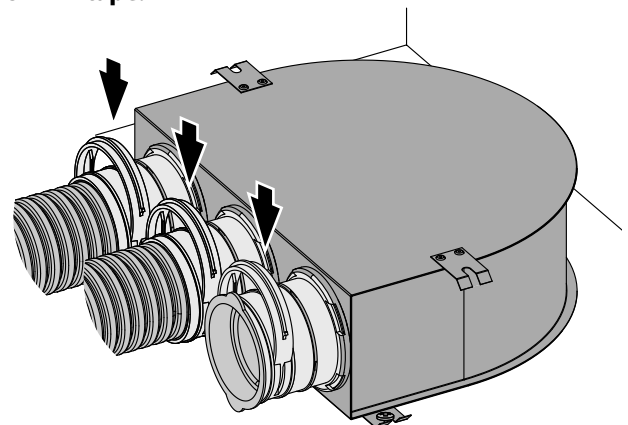


- 7** Insert the duct with the sealing ring into the flange.

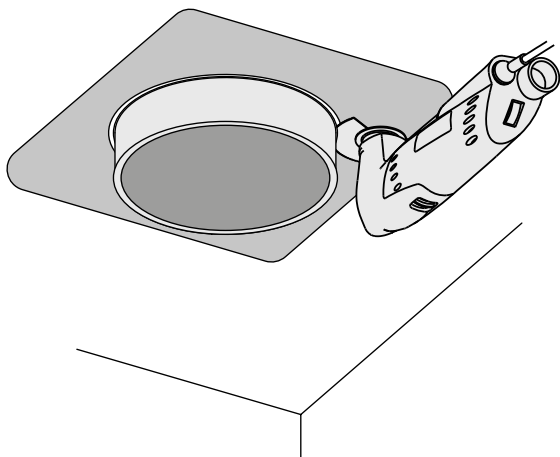


- 8** Secure the duct and the caps using the lock rings.

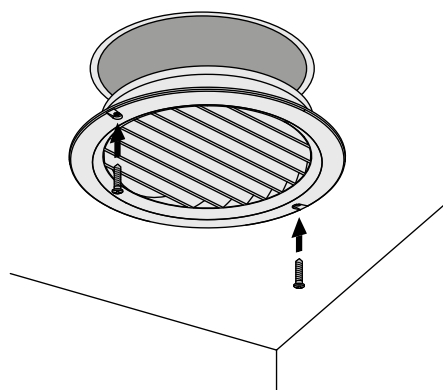
WARNING! If the connectors are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange using a cold shrink tape.



- 9** Protect the ceiling surface against damages with cutting tools and cut the protruding part of the spigot to be flush with the ceiling.

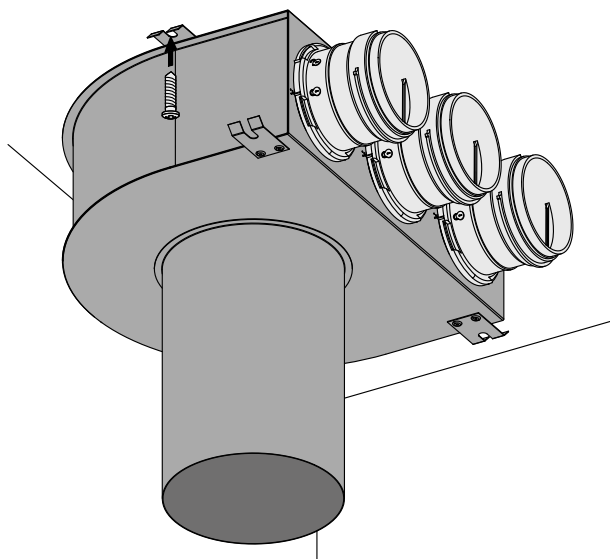


- 10** Mount a ventilation grille (not included in the delivery set).

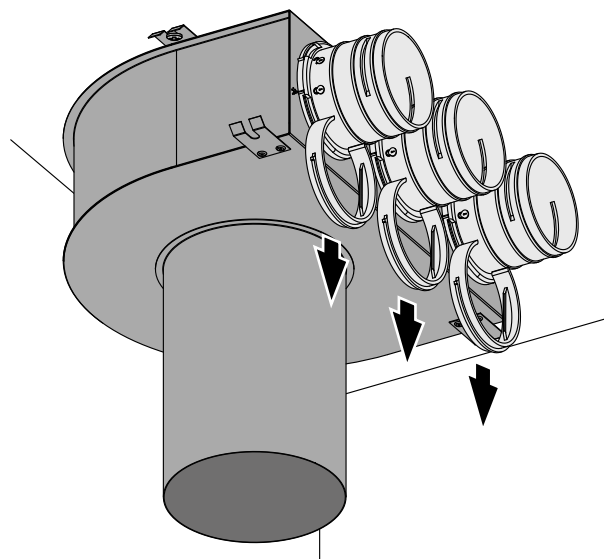


Ceiling mounting of the connector

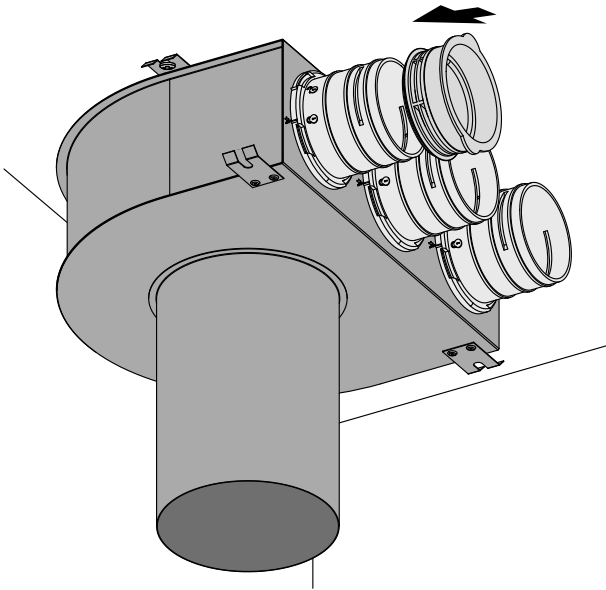
- 1** Attach the connector to the mounting surface using concrete nails.



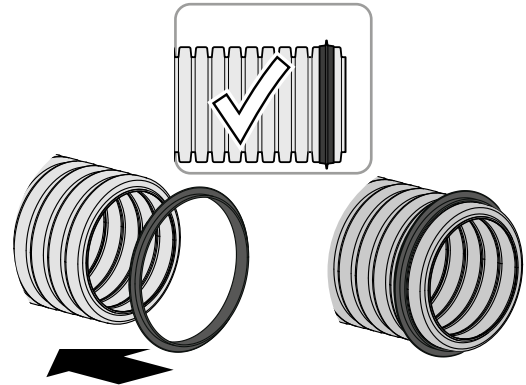
- 2** Remove the lock rings from the flanges (supplied with the flanges).



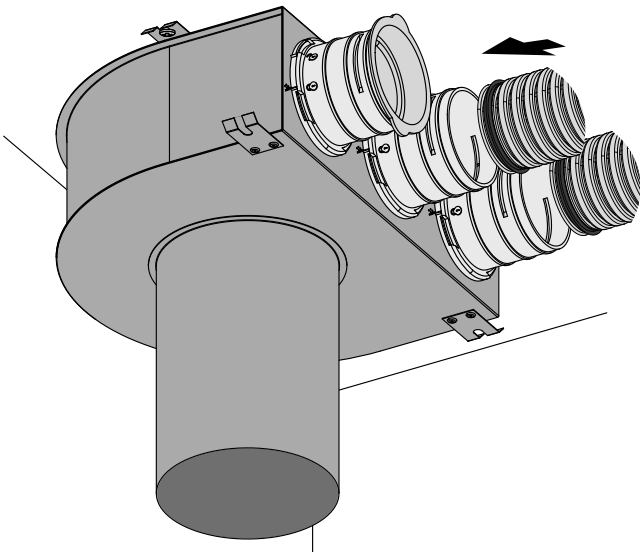
- 3** Cover the unused flanges with caps (not included in the delivery set).



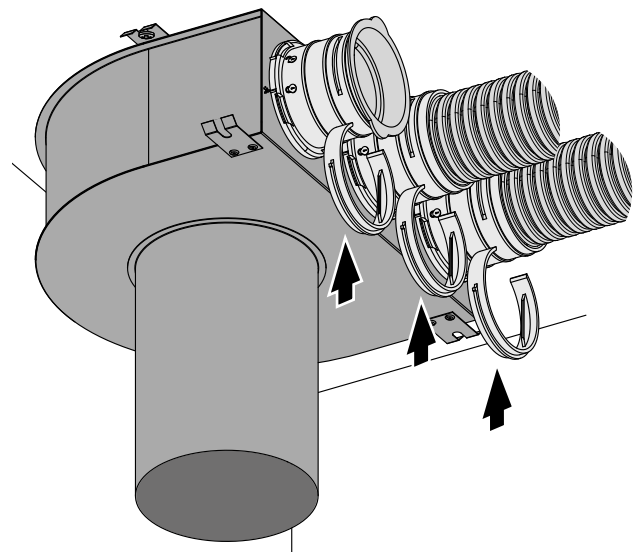
- 4** Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.



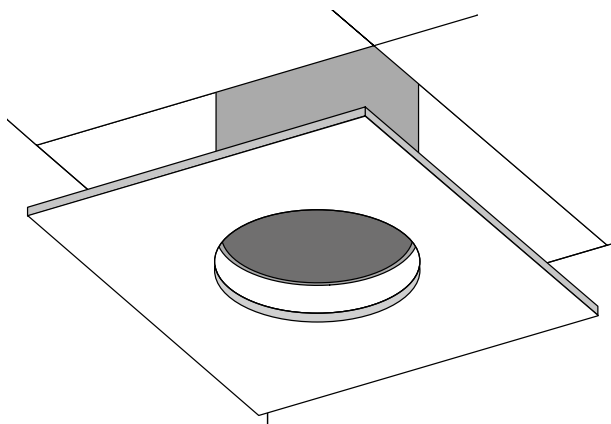
- 5** Insert the duct with the sealing ring into the flange.



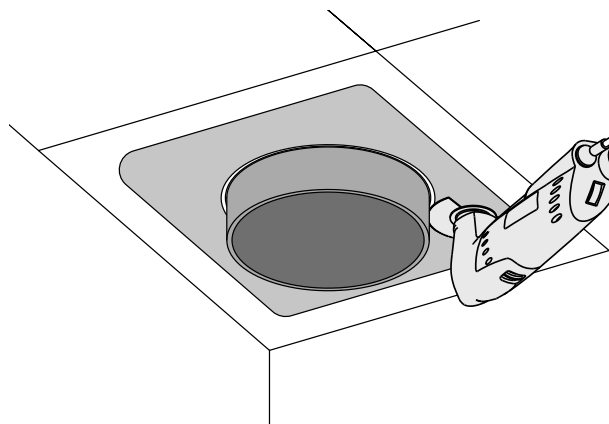
- 6** Secure the duct and the caps using the lock rings.



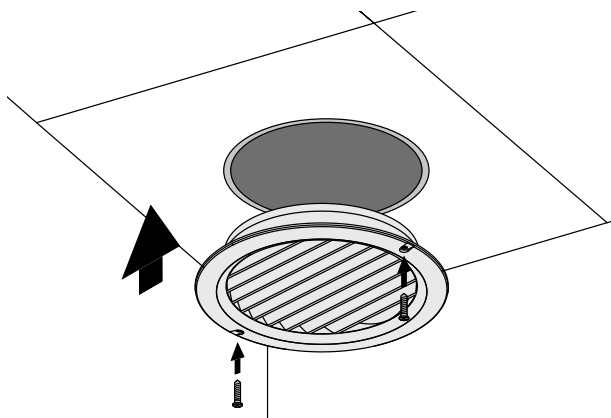
- 7** Prepare a Ø130 mm opening in the ceiling for installation of the connector spigot and install the suspended ceiling.



- 8** Protect the mounting surface against damages with cutting tools and cut the protruding part of the spigot to be flush with the ceiling.



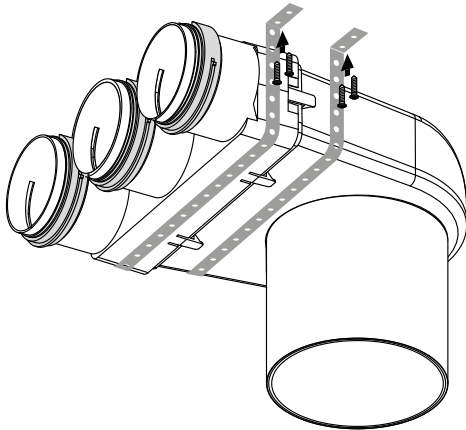
- 9** Mount a ventilation grille (not included in the delivery set).



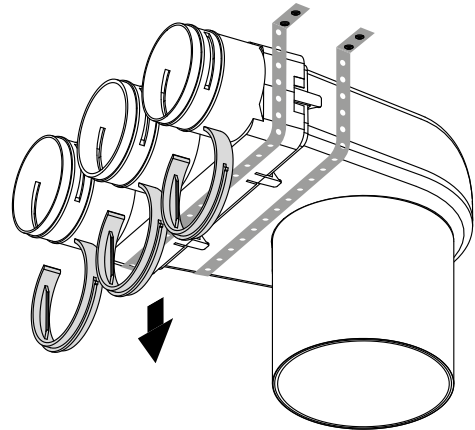
CEILING-MOUNTED PLASTIC CONNECTOR



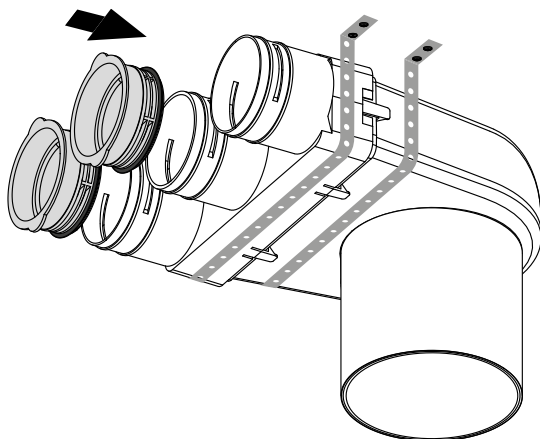
1 Remove the lock rings from the flanges (supplied with the flanges).



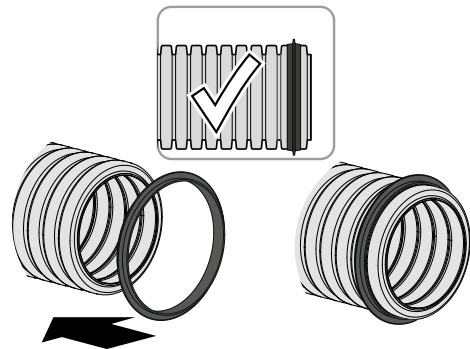
2 Install the connector under the ceiling using a perforated mounting band.



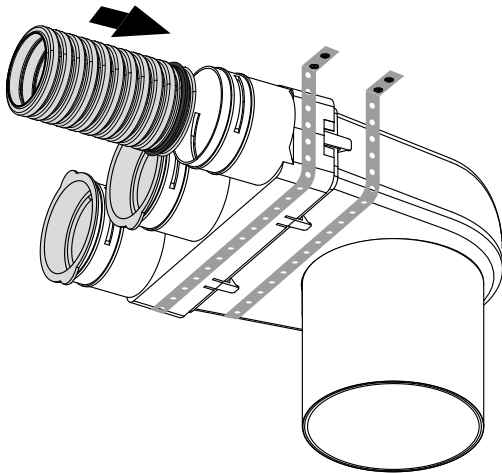
3 Cover the unused vents with caps (not included in the delivery set).



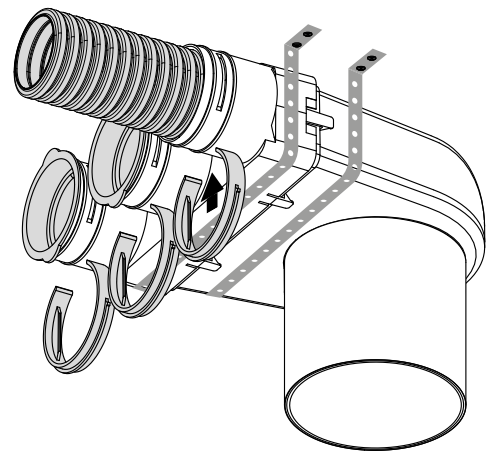
4 Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.



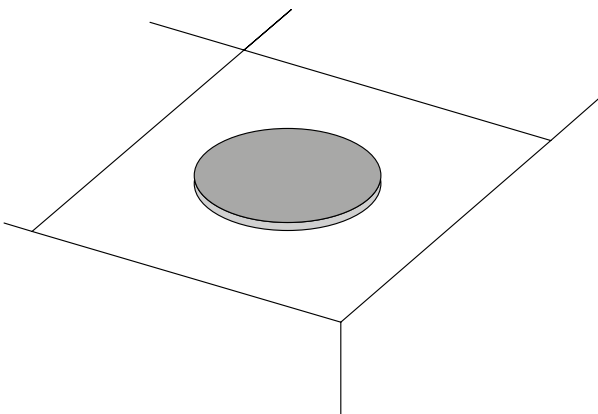
- 5** Insert the duct with the sealing ring into the flange.



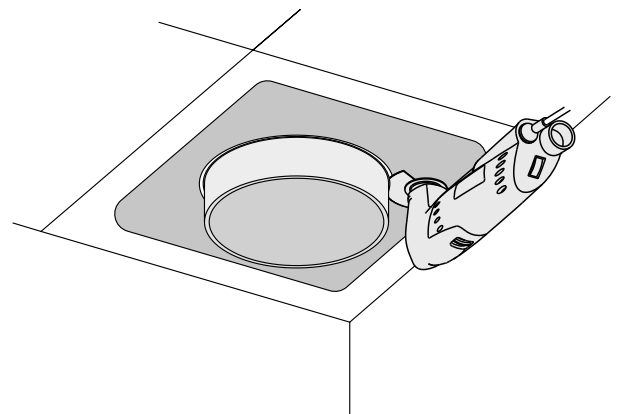
- 6** Secure the duct and the caps using the lock rings.



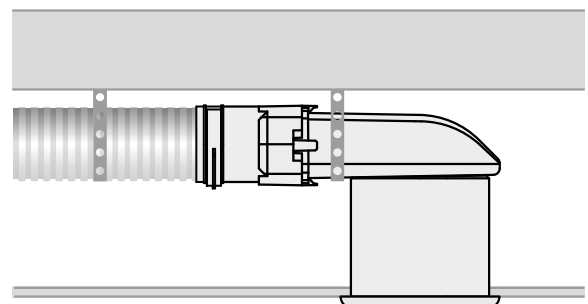
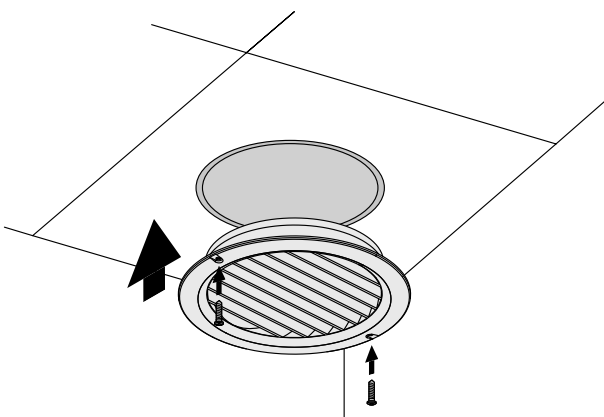
- 7** Prepare a \varnothing 130 mm opening in the ceiling and install the suspended ceiling.



- 8** Protect the mounting surface against damages with cutting tools and cut the protruding part of the spigot to be flush with the ceiling.



- 9** Mount ventilation grilles (not included in the delivery set) upon completion of the interior decoration works).

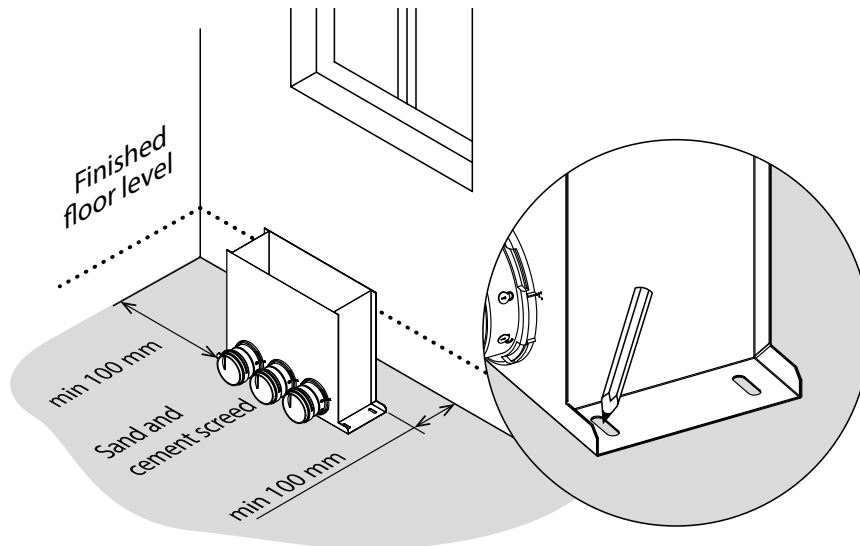


Note: ceiling-mounted plastic connector is not designated for being covered with concrete.

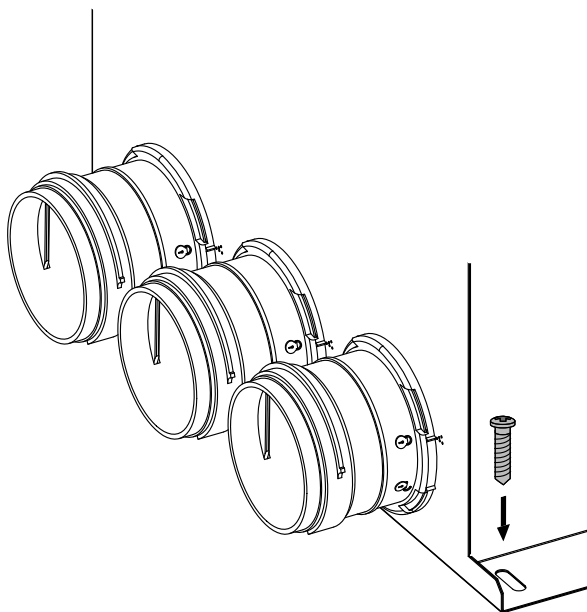
FLOOR-MOUNTED METAL CONNECTOR



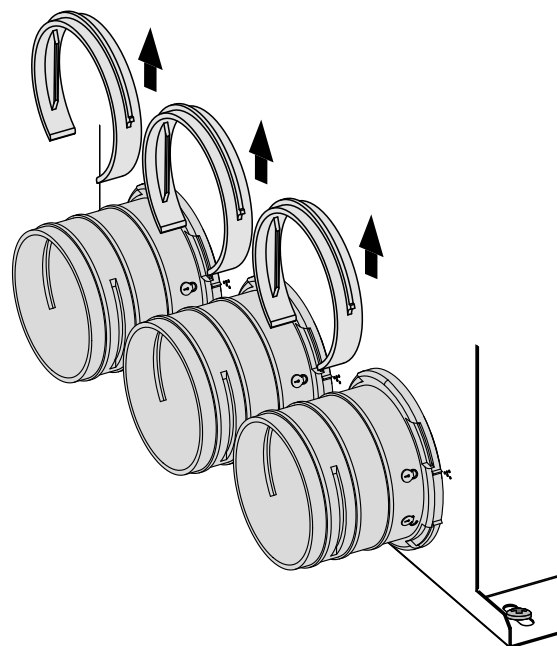
- 1** Mark holes for fasteners on the screed. Use the connector as a template.



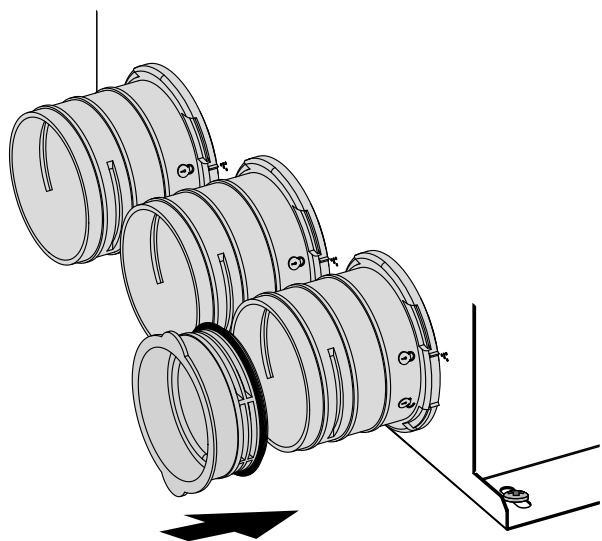
- 2** Drill holes according to the spacing and fix the connector on the floor surface.



- 3** Remove the lock rings from the flanges (supplied with the flanges).

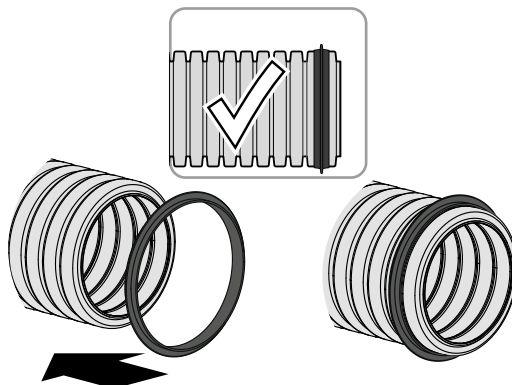


- 4** Cover the unused flanges with caps (not included in the delivery set).

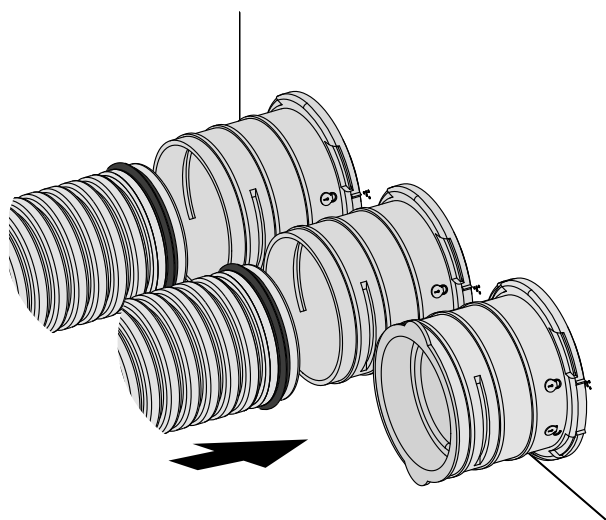


- 5** Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.

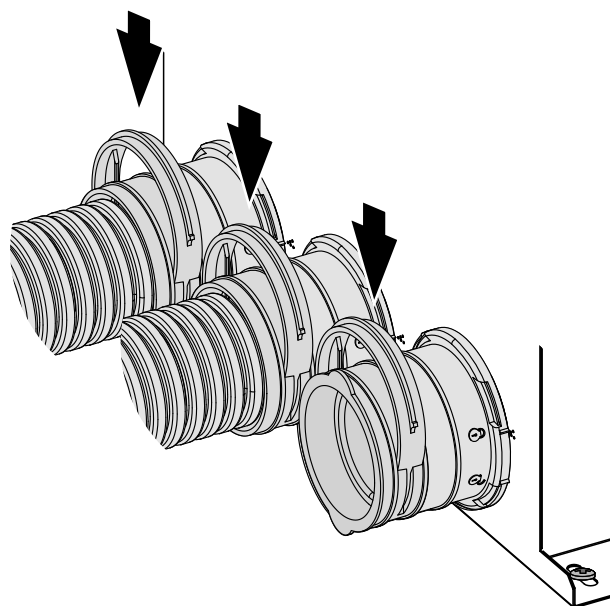
WARNING! If the ducts and the air distribution box are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange using a cold shrink tape.



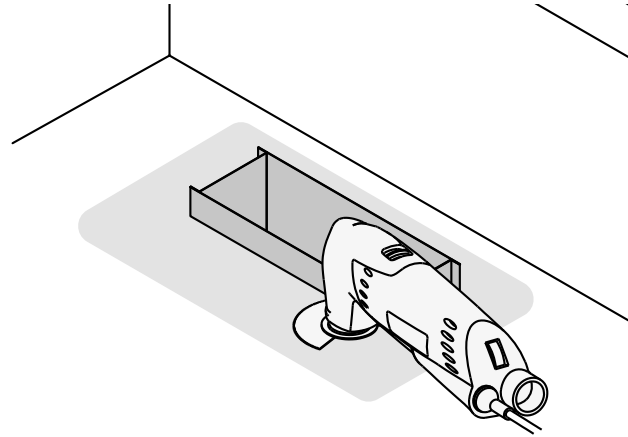
- 6** Insert the ducts with the sealing ring into the flanges.



- 7** Secure the duct and the caps using the lock rings.



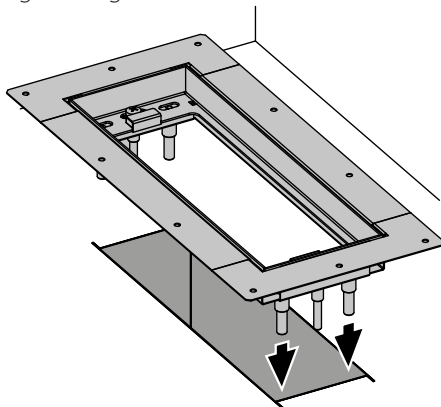
- 8** Cut the protruding part of the connector to be flush with the floor. The protruding part of the connector can be cut either upon completion of the floor finishing or after mounting of the floor covering depending on the ventilation grille installation type. The floor surface must be protected against damages with cutting tools.



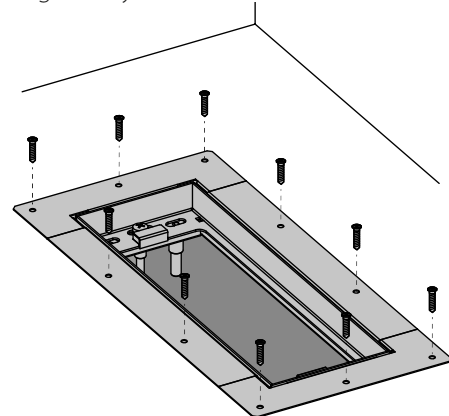
- 9** Mount a ventilation grille (not included in the delivery set).

Installation of a flush-mounted ventilation grille

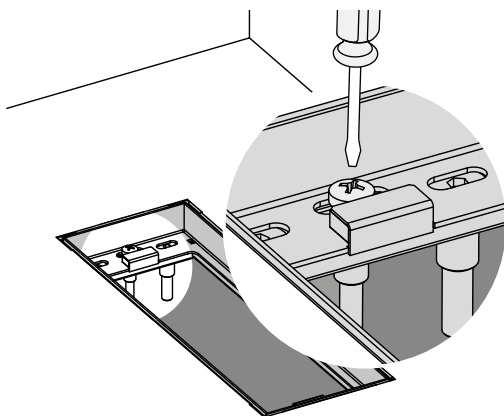
1. Insert the frame into the connector prior to installation of the finishing flooring.



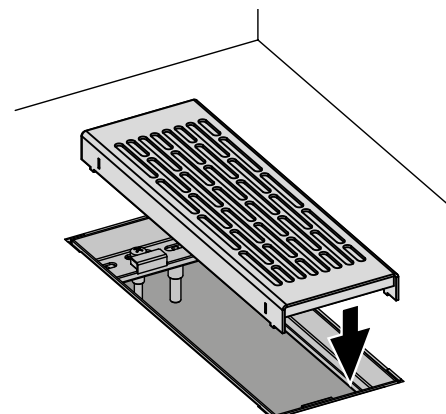
2. Secure the frame on the floor surface and cover the floor with finishing overlay.



3. Unscrew the fixing screw with a screwdriver. Use a hexagonal wrench to adjust the levelling screws and fix the frame by tightening of the fixing screw.

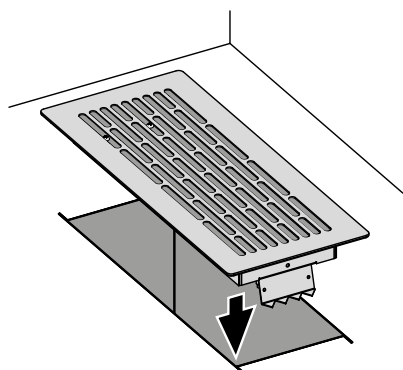


4. Insert the grille into the frame.

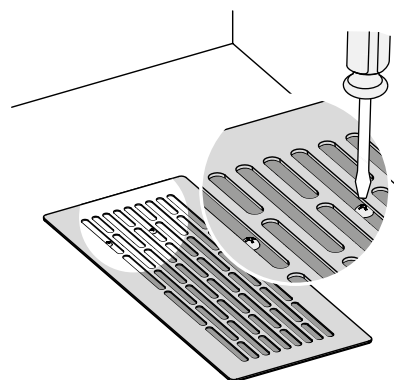


Installation of a laid-on ventilation grille

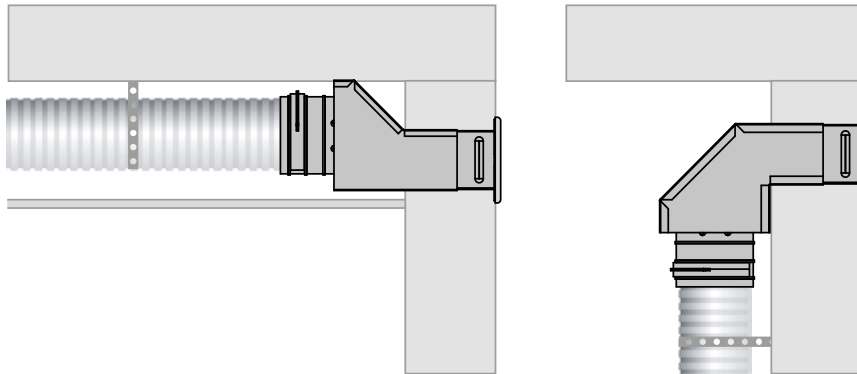
1. Insert the grille into the connector after installation of the finishing flooring.



2. Secure the grille in the connector by tightening the fixing lug screws with a screwdriver.

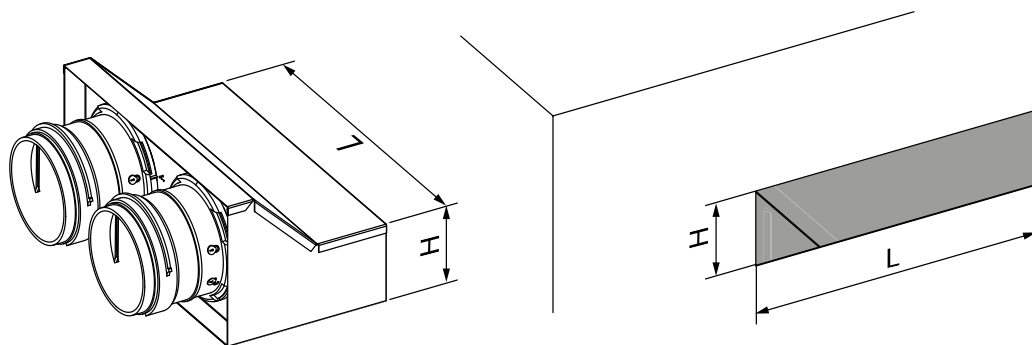


WALL-MOUNTED METAL CONNECTOR



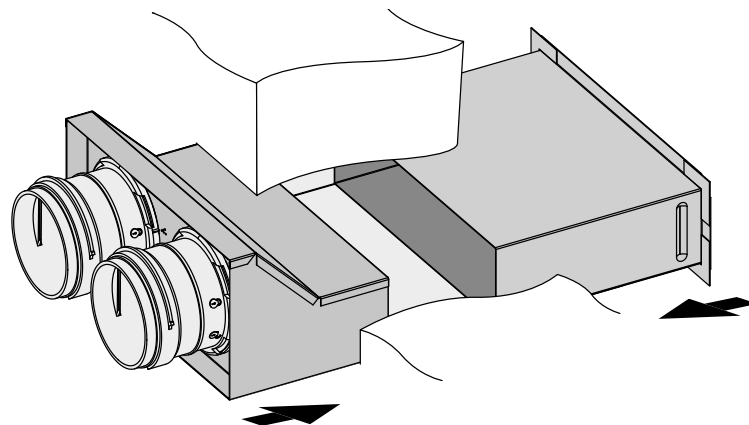
1

Bore a rectangular core hole in the wall.

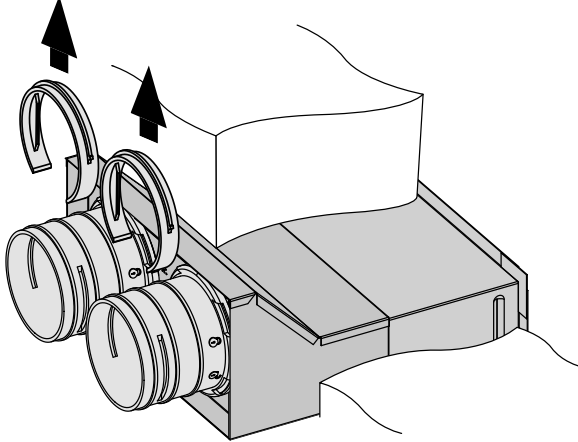


2

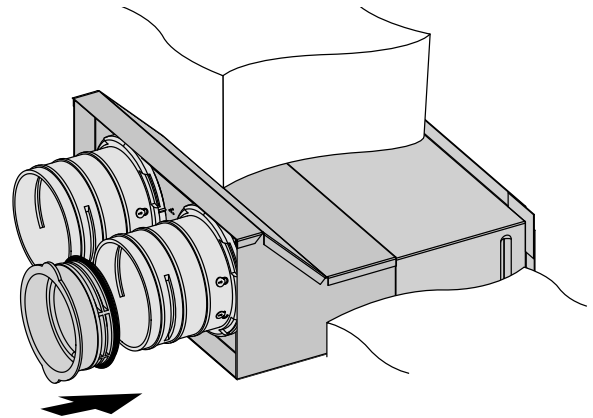
Insert the connector in the opening. Seal the gaps between the connector and the wall with expanding foam.



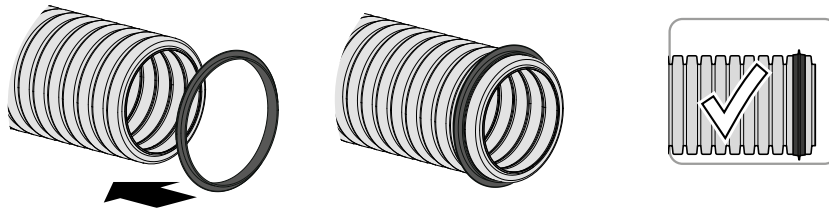
3 Remove the lock rings from the flanges (supplied with the flanges).



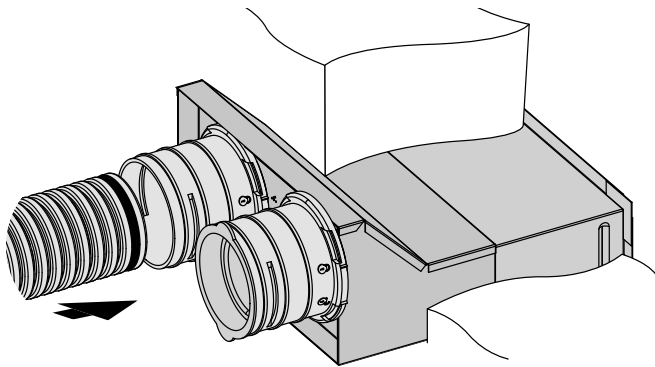
4 Cover the unused flanges with caps (not included in the delivery set).



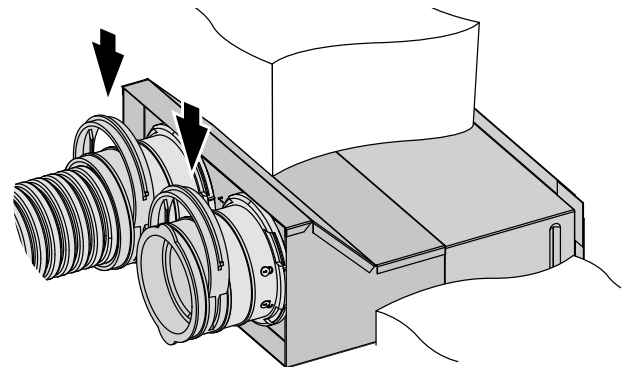
5 Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.
WARNING! If the duct and the air distribution box are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange using a cold shrink tape.



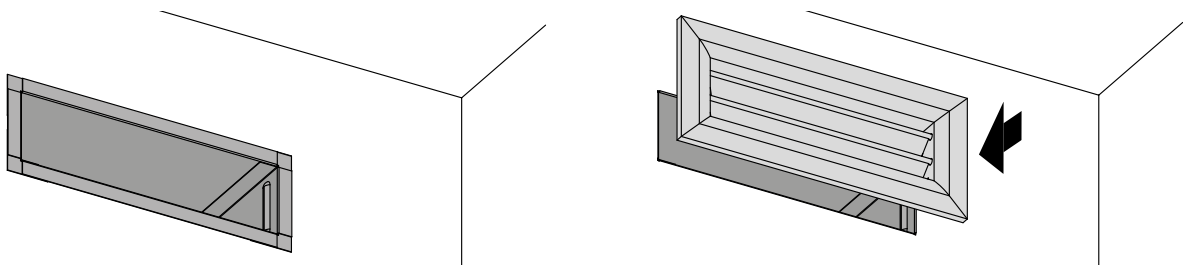
6 Insert the duct with the sealing ring into the flange.



7 Secure the duct and the caps using the lock rings.



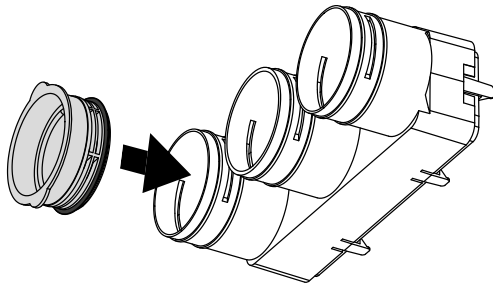
8 Mount ventilation grilles (not included in the delivery set) upon completion of the interior decoration works.



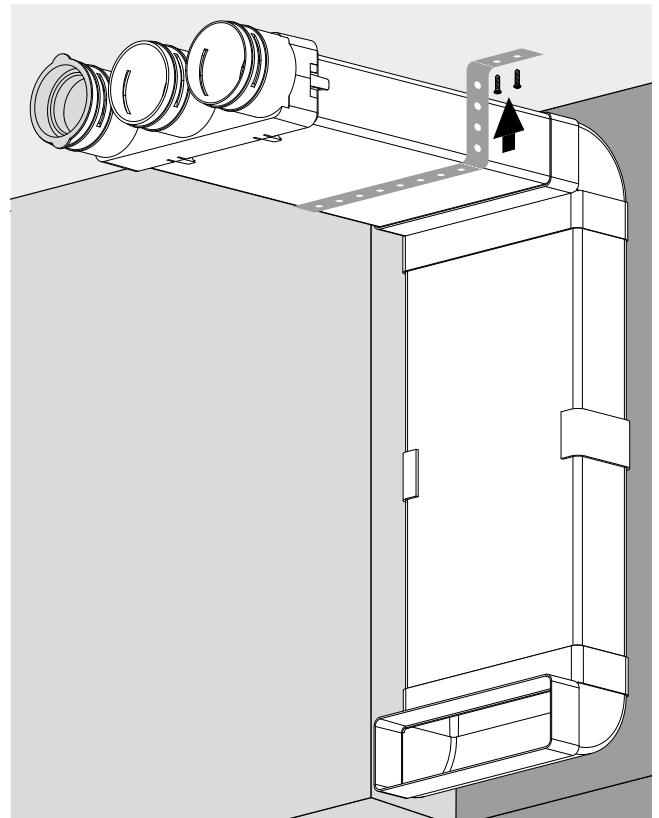
ADAPTER SLEEVE FLEXIVENT-PLASTIVENT



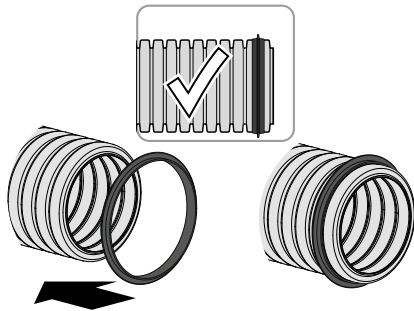
1 Cover the unused vents with caps (not included in the delivery set).



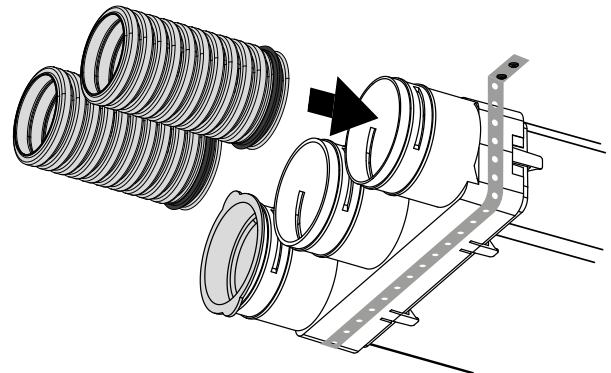
2 Connect the Plastivent system elements and fix them to the mounting surface using a mounting perforated tape. **Joints between the elements should be insulated by an adhesive tape.**



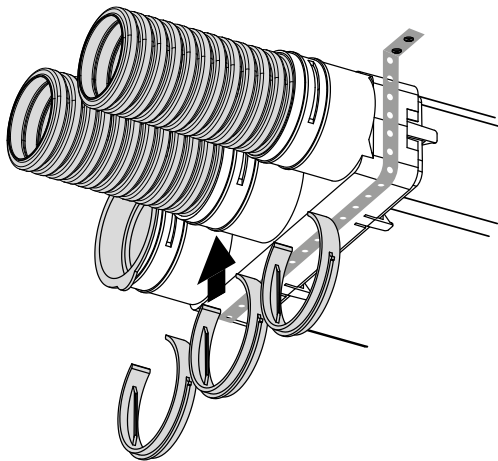
- 3** Fit the sealing ring (not included in the delivery set) onto the air duct to ensure airtight connection with the flange.



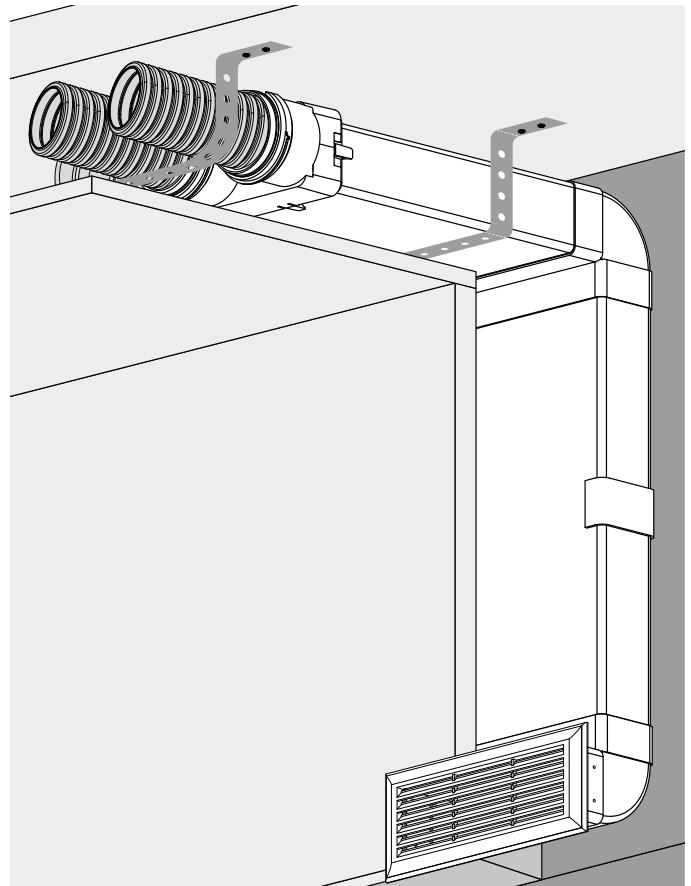
- 4** Insert the duct with the sealing ring into the flange.



- 5** Secure the duct and the caps using the lock rings.



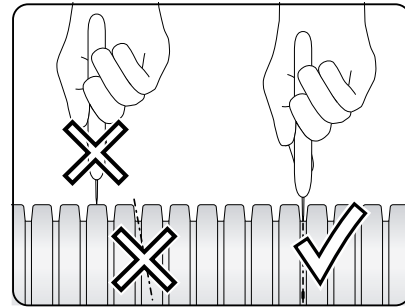
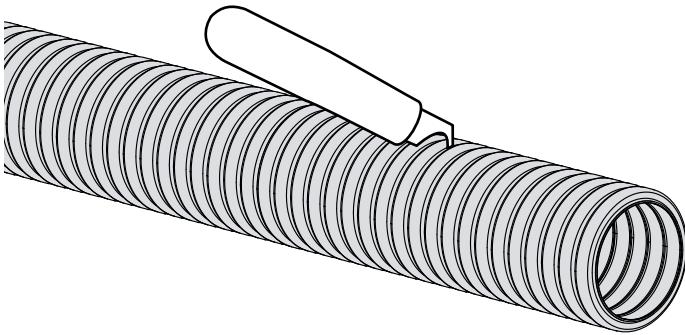
- 6** Mount a ventilation grille upon completion of the interior decoration works.



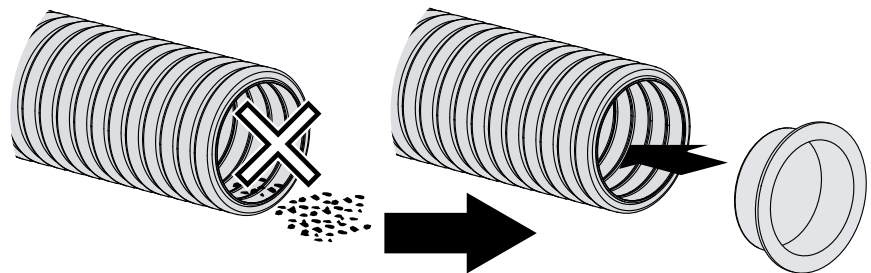
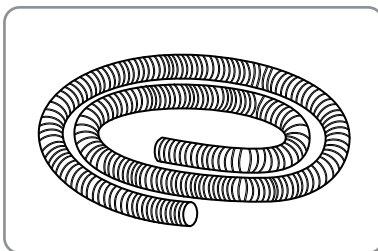
AIR DUCT FLEXIVENT



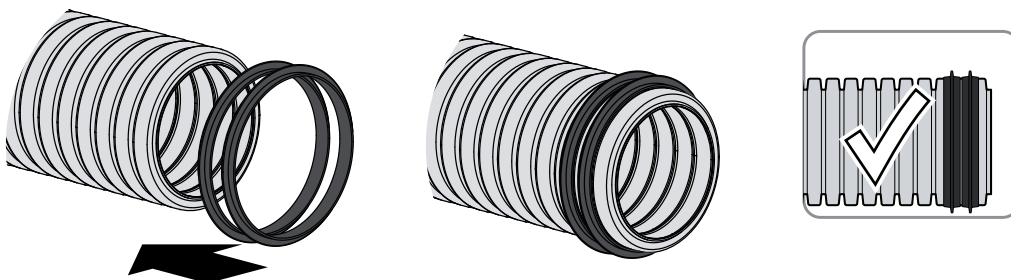
- 1** Cut a required air duct length.



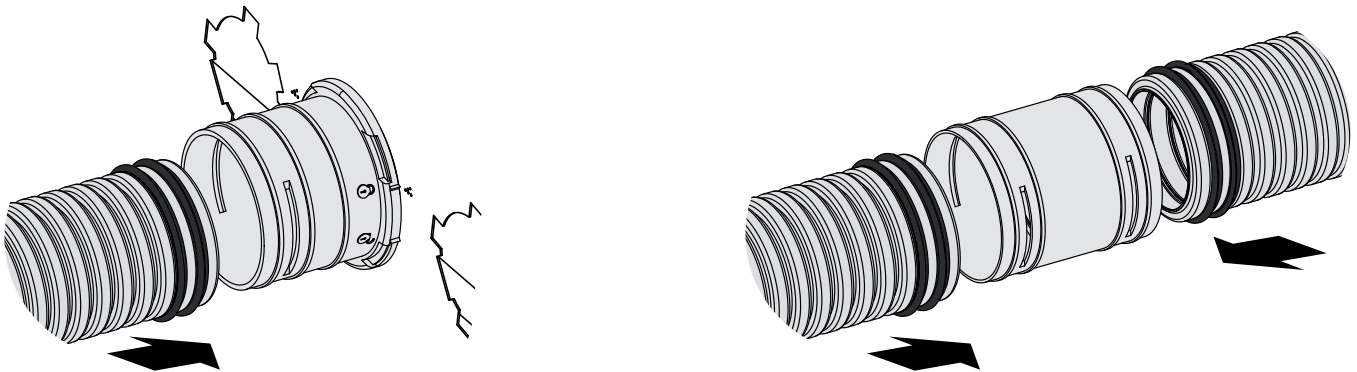
- 2** Cover the vents with caps to prevent ingress of foreign objects in the air ducts during mounting.



- 3** Cover the air duct with the sealing ring for airtight connection with the flange. Two sealing rings should be used to provide air tightness of the class D. The sealing rings are purchased separately.



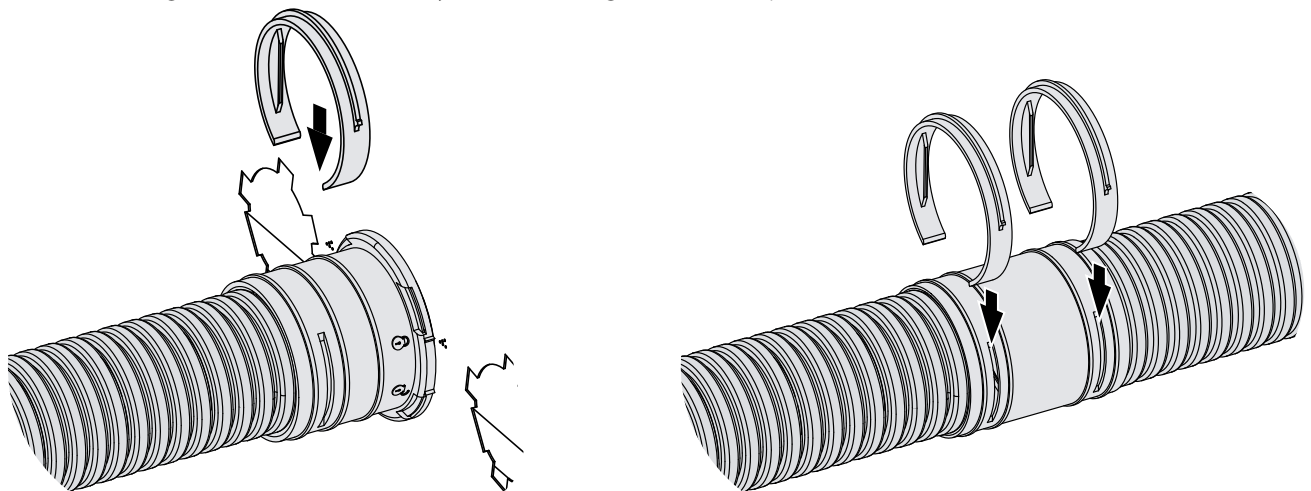
- 4** Insert the air duct with the sealing ring into the flange or in the adapter sleeve.



WARNING!

If the ducts and the air distribution box are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange using a cold shrink tape.

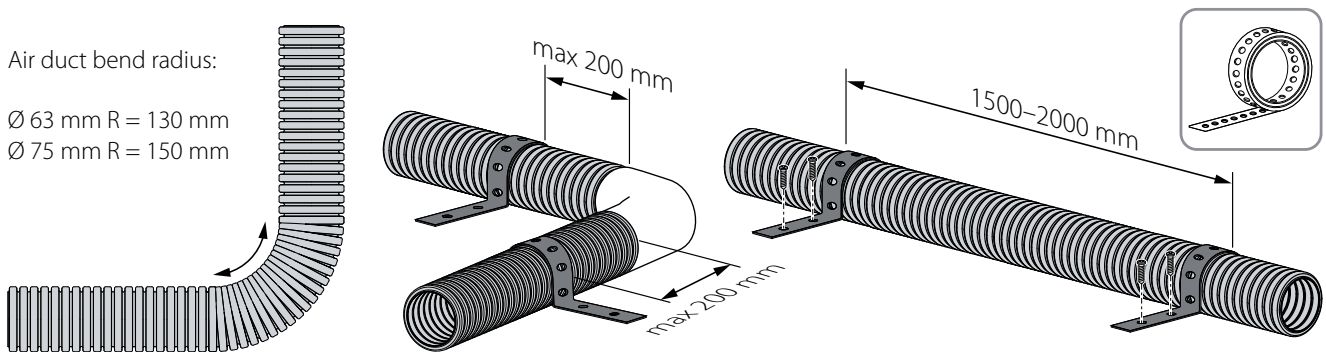
- 5** Use a lock ring (included in the delivery set of the flange and the adapter sleeve) for reliable fixation of the air duct.



- 6** Attach the air ducts to the mounting surface using a mounting perforated tape.

Air duct bend radius:

Ø 63 mm R = 130 mm
 Ø 75 mm R = 150 mm



Note: additional technical information is given in the catalogue.

FLEXIBLE INSULATED AIR DUCT ISOVENT

General recommendations

While mounting flexible insulated air ducts it is necessary to take into account the following factors: an air duct installation route, a number of bends, an angle of bends, and the number of saggings between the fastening points. These factors influence the resistance of air ducts. Use a minimum flexible air duct length for connection of ventilation elements. It is not recommended to use a redundant air duct length, as you may need some free space for relocation of diffusers or other elements.

Avoid mounting of flexible insulated air ducts in places where direct sunlight can affect them. Long-term sunlight exposure can lead to an external layer destruction, while UV lamps mounted in the ventilation system - to an internal.

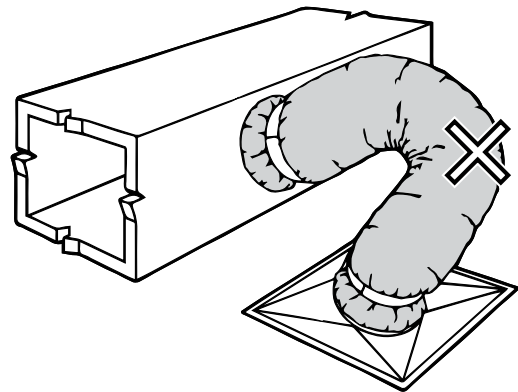
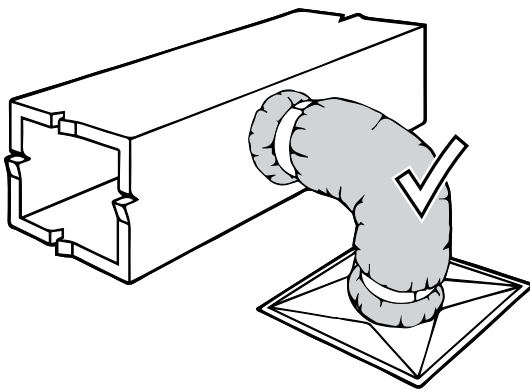
Diffusers and the other ventilation elements should be fastened to load-bearing walls separately from an insulated air duct.

If the external layer of an insulated air duct is damaged, it can be repaired by means of an adhesive tape, suitable for that kind of work. In case of the internal layer damage the insulated air duct should be replaced.

Mounting and operation

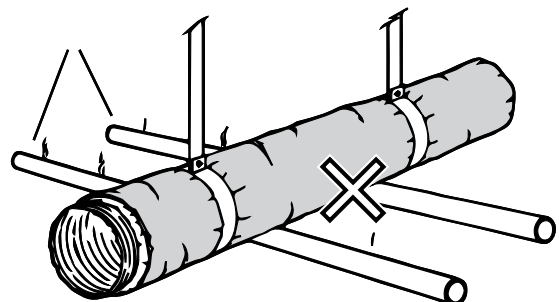
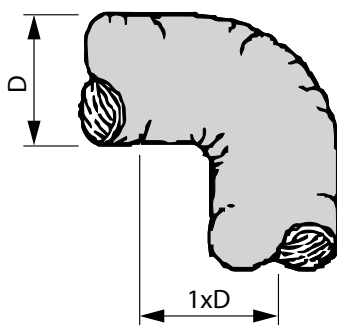
It is necessary to stretch an insulated air duct to the maximum before mounting.

It is forbidden to mount too stretched or compressed air ducts as it can increase aerodynamic drag inside the air duct.



The air duct should be mounted so as to avoid turning sharp angles or touching metal fasteners or pipes. Air duct bend radius along the central line should be not less than one air duct diameter.

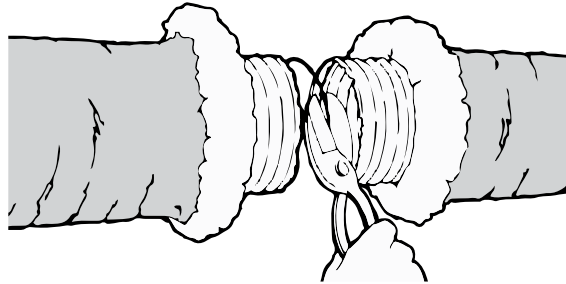
It is strictly forbidden to mount insulated air ducts near heat emitting appliances such as heaters or heat pipes, the temperature of which exceeds the recommended temperature for air ducts application.



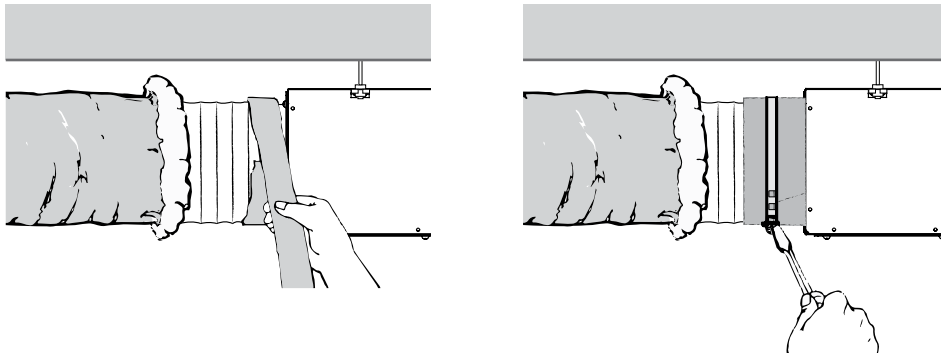
Joining of flexible insulated air ducts

Flexible insulated air duct must cover the flange of a fitting to which it is secured for not less than 50 mm. The nipple used for attaching air ducts should be not less than 100 mm. A corresponding adhesive tape and clamp should be used for providing air tightness and fixation of a joint. Flexible insulated air ducts can be applied in the ventilation systems with the pressure up to 1500 Pa.

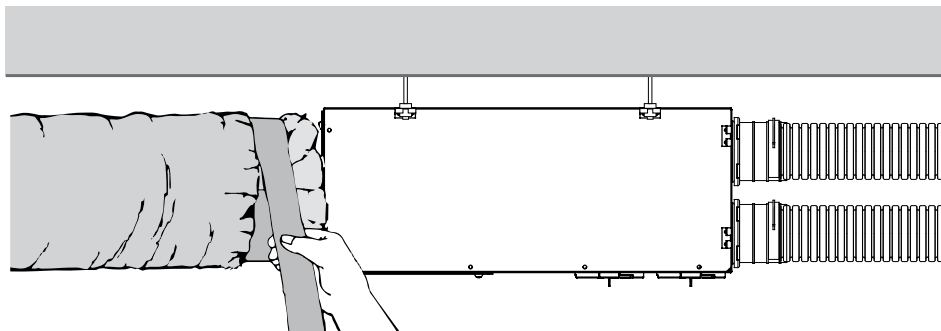
1. Measure off the necessary length of an air duct and cut it with a knife or scissors. Cut the wire with pliers.



2. Pull not less than 25 mm of the inner layer onto the spigot. Insulate the joint between the spigot and the air duct inner layer by two layers of an adhesive tape. Secure the joint by a clamp placing it over the inner layer of an air duct and an adhesive tape.

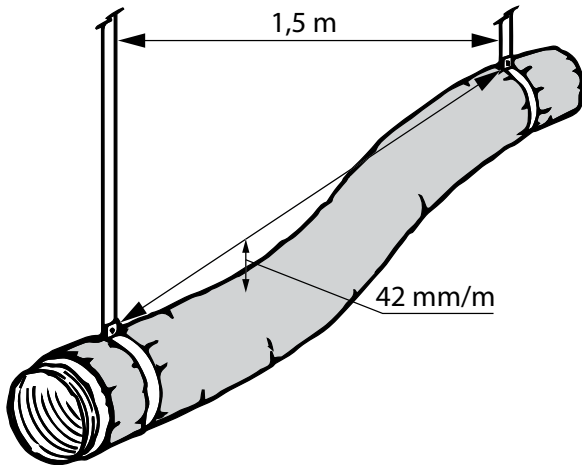


3. Pull the insulation of an air duct and its outer layer back, over the inner layer. Coil not less than two turns of an adhesive tape around the outer layer of an air duct. A clamp can be applied with an adhesive tape or separately.

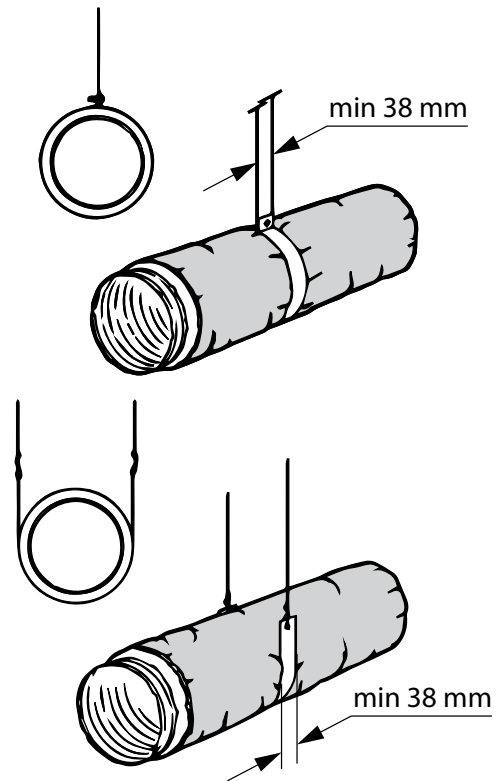


Fastening of flexible insulated air ducts

The distance between the fasteners must not be more than 1.5 m. The flexible air duct sagging between the fasteners must not exceed 42 mm/m. The place of connection to the rigid ventilation system elements is considered to be a fastening point. Long horizontal runs of a flexible insulated air duct with sharp bends should have fasteners before and after the bend at the distance of one diameter from the bend center line.



The supports of a flexible insulated air duct should be not less than 38 mm wide.



COMMISSIONING OF THE VENTILATION SYSTEM

pre-commissioning should be carried out in accordance with the local norms and standards.

The aim of the commissioning and adjustment

- Ensuring microclimate conditions in accordance with the local construction and sanitary norms and regulations.
- Total air flow adjustment.
- Supply and exhaust air flow balancing.
- Ensuring the necessary minimum of air exchange in separate rooms.

Verification of general provisions

- The Blauberg ventilation components solely were used for mounting.
- Mounting is completed and the facility is ready to be put into operation.
- Supply grilles and/or disk valves are in place.
- Disk valves, grilles, and the other valves are opened as much as possible for providing minimum resistance.
- A ventilation unit has project documentation and a user's manual.
- A representative of an installation company is present at commissioning and adjustment.
- Access is provided to all the necessary ventilation system components (ventilation unit, supply and exhaust ventilation elements).
- The unit was not operating during construction.
- The unit bypass is closed.

Total supply and exhaust air flow regulation

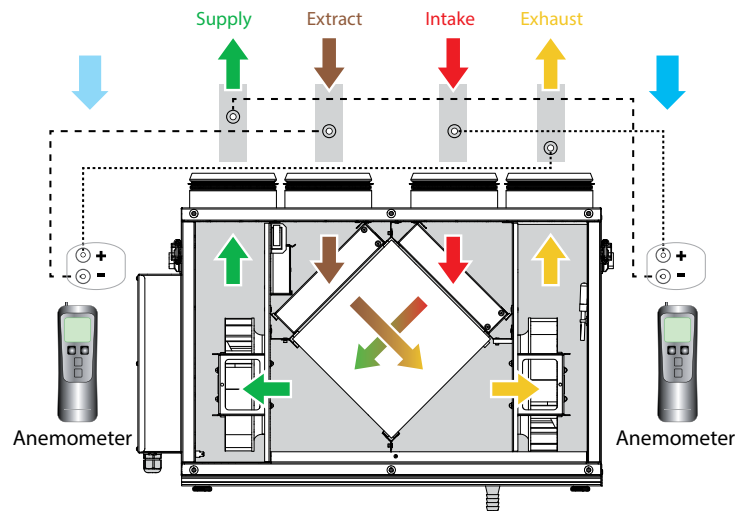
Necessary equipment:

- differential pressure switch;
- measuring tubes, 2 pcs.;
- pressure outlets, 4 pcs.;
- drill with a \varnothing 7.5 mm drill bit for metal, if necessary.

Total supply and exhaust air flow is regulated as follows:

1. Install the pressure outlets into the air ducts at the distance of 10-15 cm from all the unit spigots (supply, extract, exhaust, intake) and secure them.
2. Connect the differential pressure switch to the pressure outlets, which are located near the intake and supply spigots. Determine pressure difference between them.
3. Determine the supply air flow by means of the diagram of dependence of the unit performance from pressure. If necessary, change the speed of the supply fan and redo measuring.
4. Connect the differential pressure switches to the pressure outlets, which are located near the extract and exhaust spigots. Determine pressure difference between them.
5. Determine the extract air flow by means of the diagram of dependence of the unit performance from pressure.
6. If necessary, change the speed of the extract fan and redo measuring.

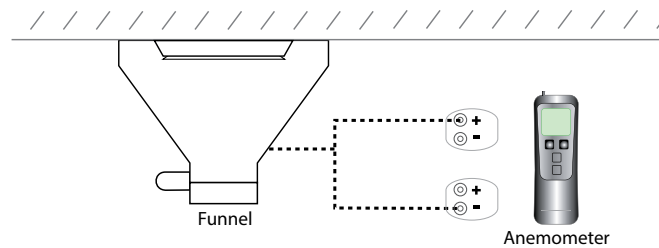
Connection of a differential pressure switch to air ducts for pressure difference measurement



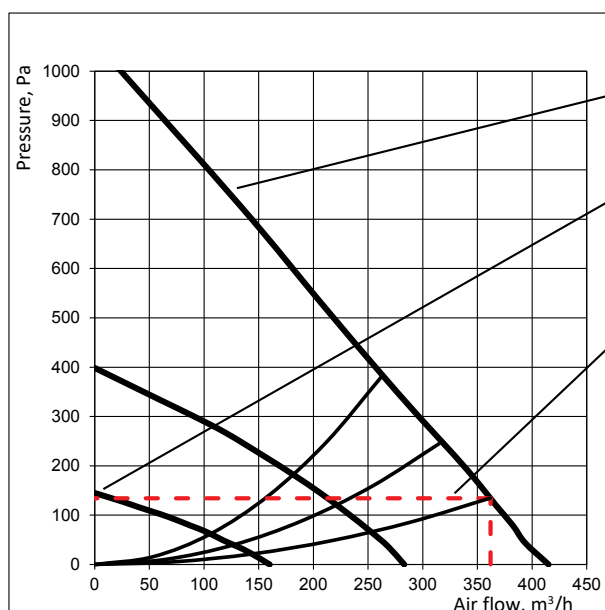
Air flow regulation through ventilation grilles or disk valves in the rooms

An anemometer with an appropriate funnel should be used for measuring of the air flow through a ventilation grille.

Measurement of the air flow through a ventilation grille or disk valve



Reduce or increase air flow, if necessary. For this, change the air pass of a disk valve or install an air throttling damper into an air distribution box or a floor-mounted connector.



Identify the unit speed curve on the diagram.
Example: maximum speed.

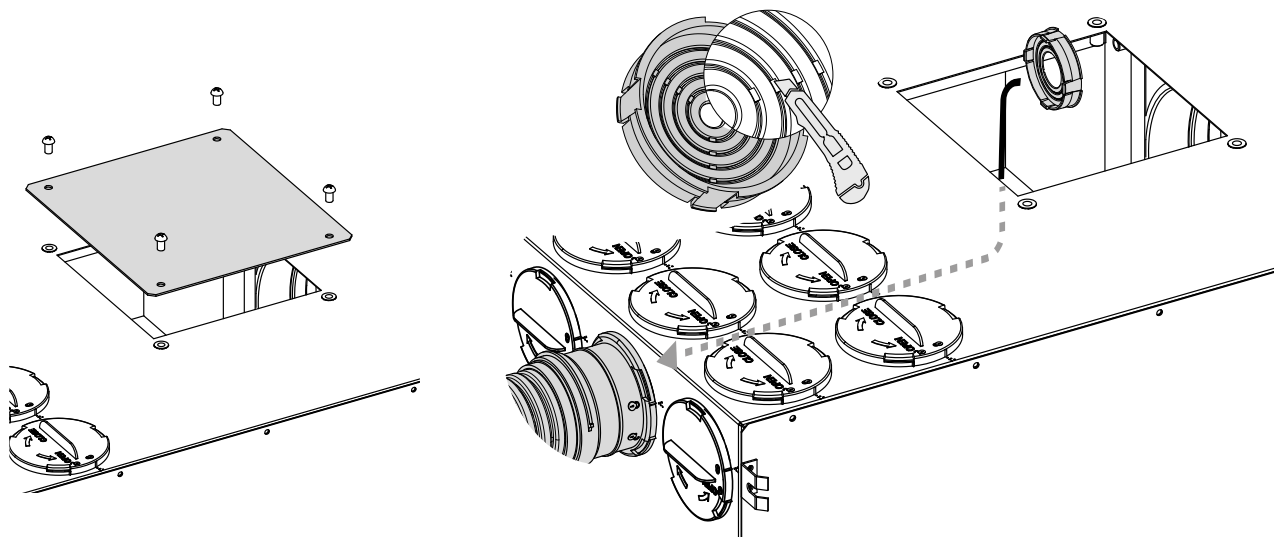
Draw the horizontal line corresponding to pressure difference measured by a differential pressure switch on the diagram.
Example: 134 Pa.

From the point of intersection of the horizontal line and the unit speed curve draw a vertical line to the horizontal axis to determine performance.
Example: 360 m³/h.

AIR FLOW REGULATION

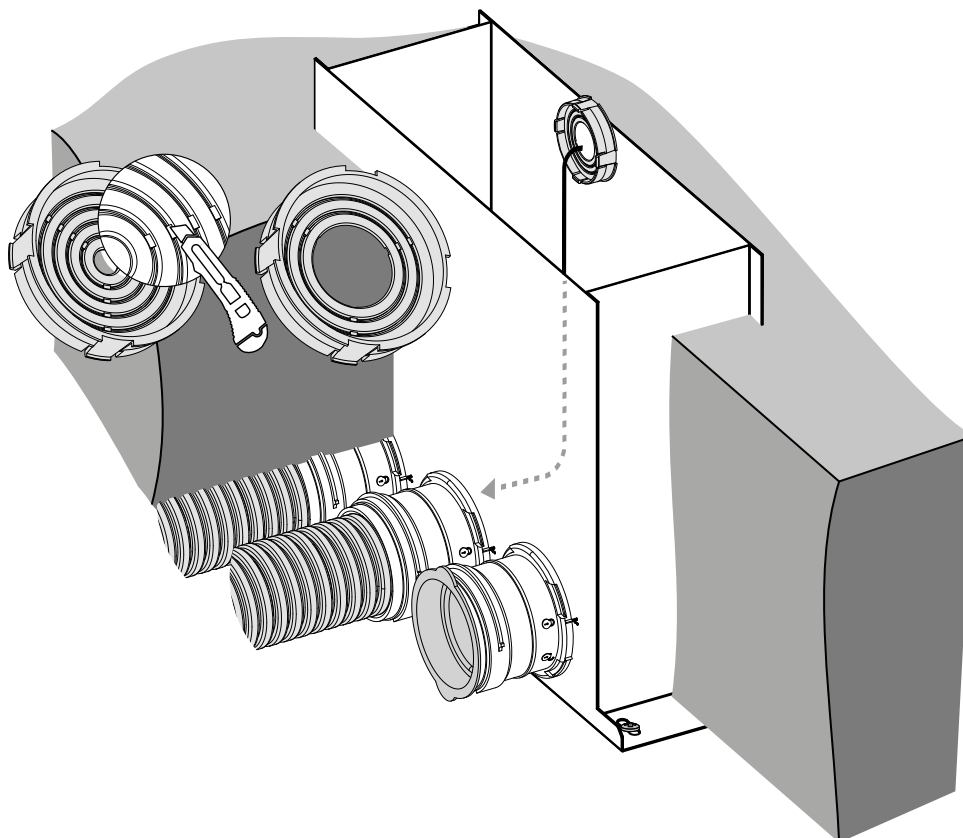
Air flow regulation by means of the air throttling damper installed into the air distribution box

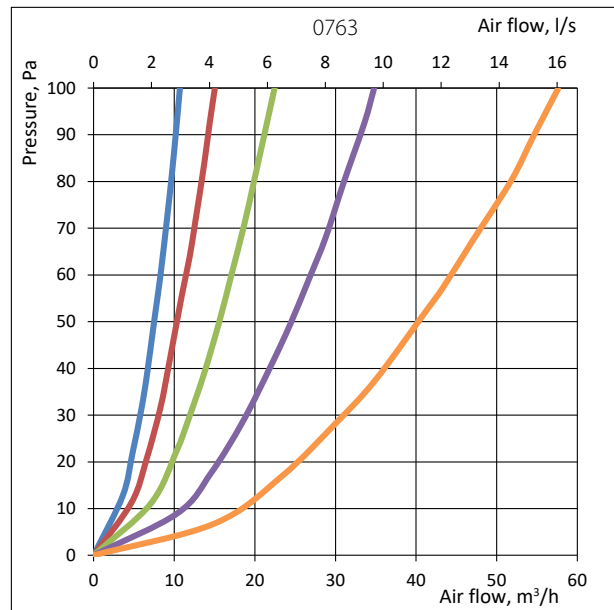
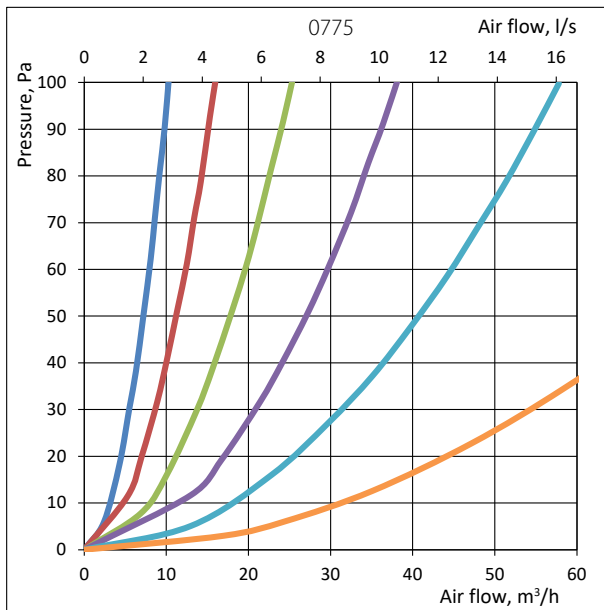
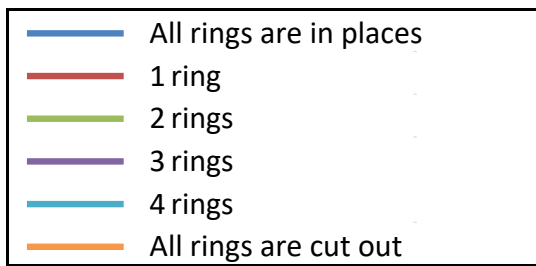
1. Cut the diaphragms between the rings with a knife and remove the unnecessary rings.
2. Remove the service panel of the air distribution box.
3. Install the air throttling damper in the flange on the inner side of the air distribution box.
4. Install the service panel to its original location.



Air flow regulation by means of the air throttling damper installed into the connector

1. Cut the diaphragms between the rings with a knife and remove the unnecessary rings.
2. Remove the ventilation grille from the connector.
3. Install the air throttling damper in the flange on the inner side of the floor-mounted connector.
4. Install the ventilation grille back into the connector.

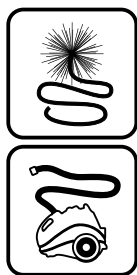




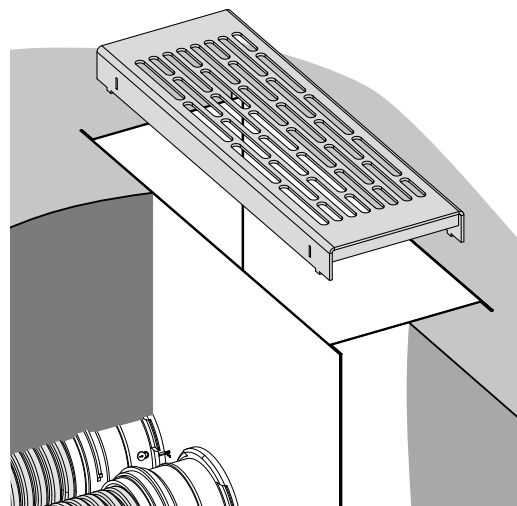
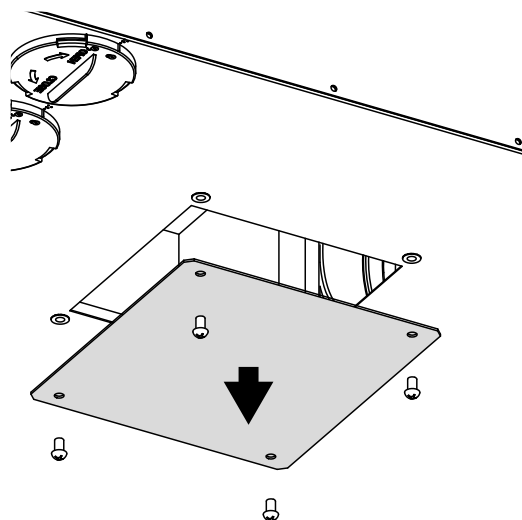
TECHNICAL MAINTENANCE

Technical maintenance includes overall cleaning up of the system elements from contaminants and dust deposits.

1. Cleaning of the ventilation air ducts.



Clean the air ducts using a specially designed brush or a vacuum cleaner nozzle that matches the flange. The access to the air ducts is provided through the service panel and the ventilation grille.



2. Cleaning of the inner side of air distribution boxes, grilles, and disk valves.



Clean the surfaces with a soft brush or cloth. Do not use aggressive solvents, sharp objects, etc. for cleaning to avoid damaging.

3. Maintenance of the ventilation unit is carried out in compliance with the user's manual of the corresponding unit.

