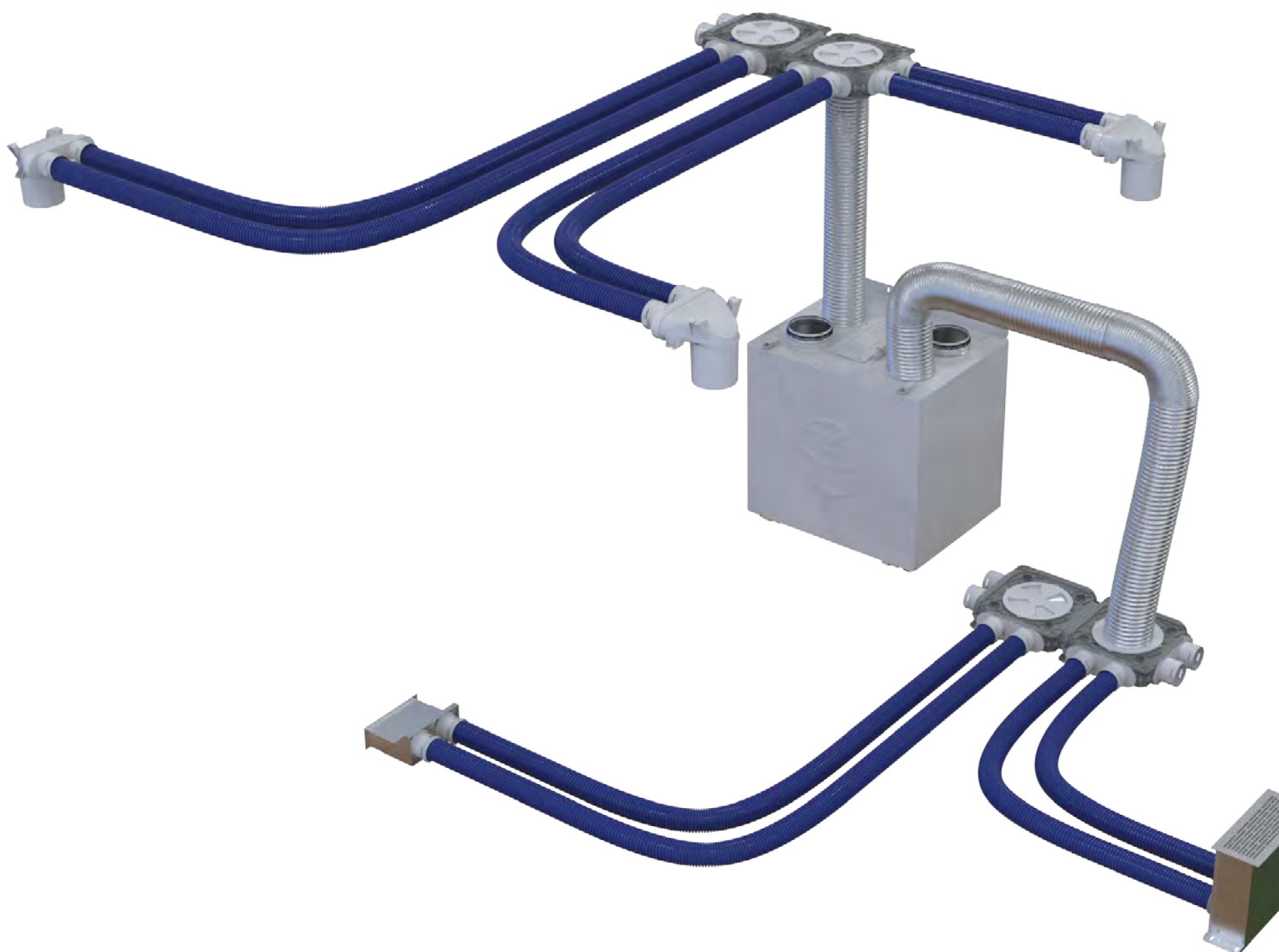


INSTALLATION INSTRUCTION

Modular air distribution system



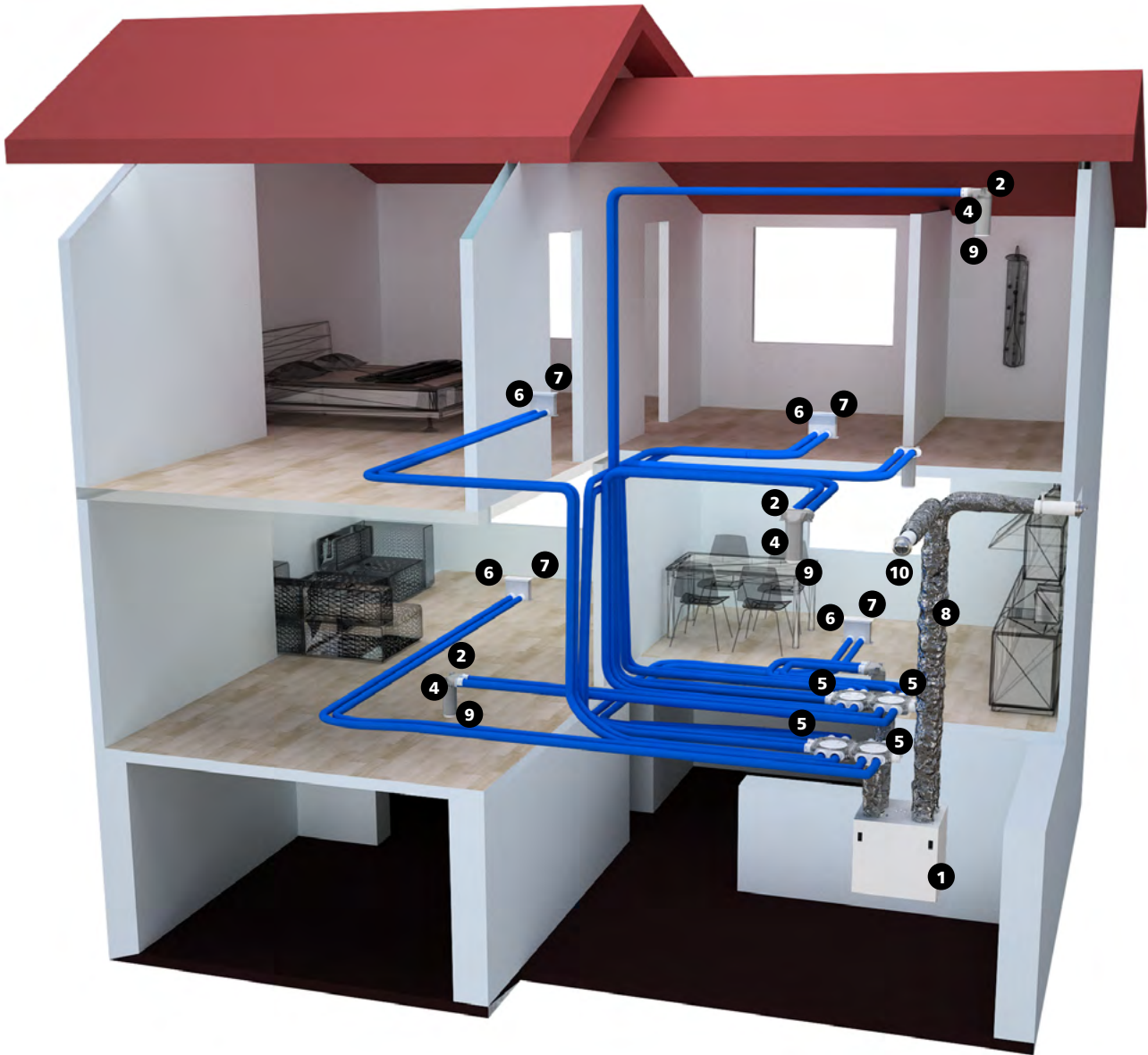
FlexiVent



CONTENTS

| | |
|--|----|
| Typical configuration | 3 |
| Mounting recommendations for supply and exhaust diffusers | 4 |
| Recommendations on calculation of slab thickness | 6 |
| Plastic air distribution boxes for oval ducts | 7 |
| Plastic air distribution boxes for round ducts | 9 |
| Metal air distribution boxes | 11 |
| Plastic ceiling connectors for round ducts | 15 |
| Mounting of the connector in the floor slab | 15 |
| Ceiling mounting of the connector | 17 |
| Plastic ceiling connectors for oval ducts | 20 |
| Mounting of the connector in the floor slab | 20 |
| Ceiling mounting of the connector | 22 |
| Ceiling-mounted metal connectors | 24 |
| Ceiling mounting of the connector | 24 |
| Plastic floor-mounted connector for oval ducts | 26 |
| Mounting the connector on top of the slab into the thickness of the floor insulation | 26 |
| Floor-mounted metal connectors | 28 |
| Mounting of the connector into the slab with concrete casting | 28 |
| Ventilation grille mounting | 30 |
| Wall-mounted metal connector | 32 |
| FlexiVent-Plastivent adapter sleeve | 34 |
| FlexiVent air duct | 36 |
| Flexible insulated air duct Isovent | 38 |
| Joining of flexible insulated air ducts | 39 |
| Commissioning of the ventilation system | 40 |
| Air flow control | 42 |
| Air flow rate control with a disc valve | 42 |
| Air flow regulation by means of installing the air throttling damper into the air distribution box | 42 |
| Air flow regulation by means of installing the air throttling damper into the connector | 43 |
| Air flow control in the connector with a rectangular air throttling damper | 45 |
| Air flow control in the connector with a circular air throttling damper | 46 |
| Technical maintenance | 47 |

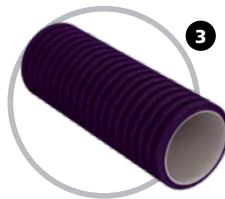
TYPICAL CONFIGURATION



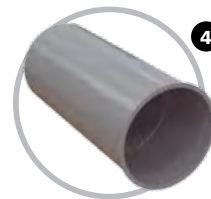
Air handling unit with heat recovery



Ceiling-mounted plastic connector



Round duct



Connector pipe



Plastic air distribution box



Floor-mounted connector



Floor-mounted grille



Flexible insulated air duct



Extract air disc valve



Outer ventilation hood

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.
- Expansion of the air jet.

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 the 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 occupied space should be not less than 1 m.
- Supplying air to the occupied area 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 can be positioned closer, depending on the type of air jet.

Mounting recommendations for exhaust grilles and air 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.
- Exhaust ventilation elements must be installed close to the source of contaminants such as moisture and odours.
- At the same time, it is not recommended to install exhaust grilles and disk valves above a bath or a shower.
- It is not recommended to install exhaust ventilation elements directly above radiators. It can lead to unnecessary heat losses.
- Do not install the exhaust ventilation element directly over the cooker in the kitchen, as this will result in grease entering the ventilation system.
- If the air in the room contains a lot of sprayed grease particles, it is recommended to use exhaust elements with built-in replaceable filters.

Recommendations for the positioning of supply and exhaust air diffusers

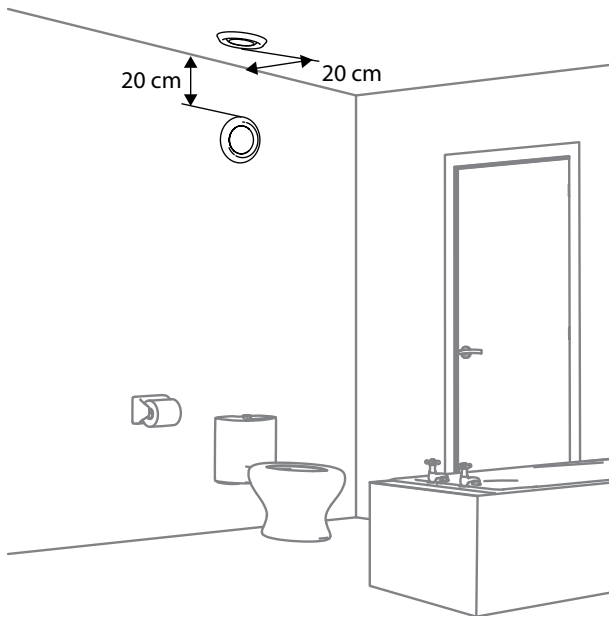
Air extraction

Kitchen
Bathroom
WC
Storage area
Laundry
Sauna

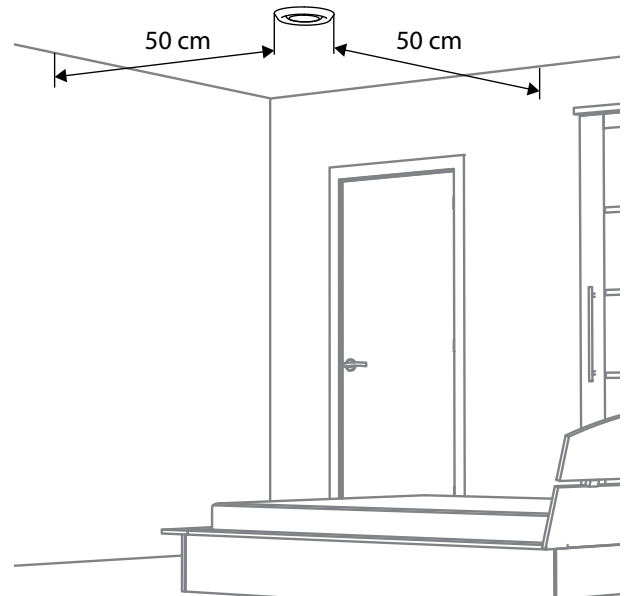
Air supply

Hallway
Dining room
Bedroom
Nursery
Office
Living room

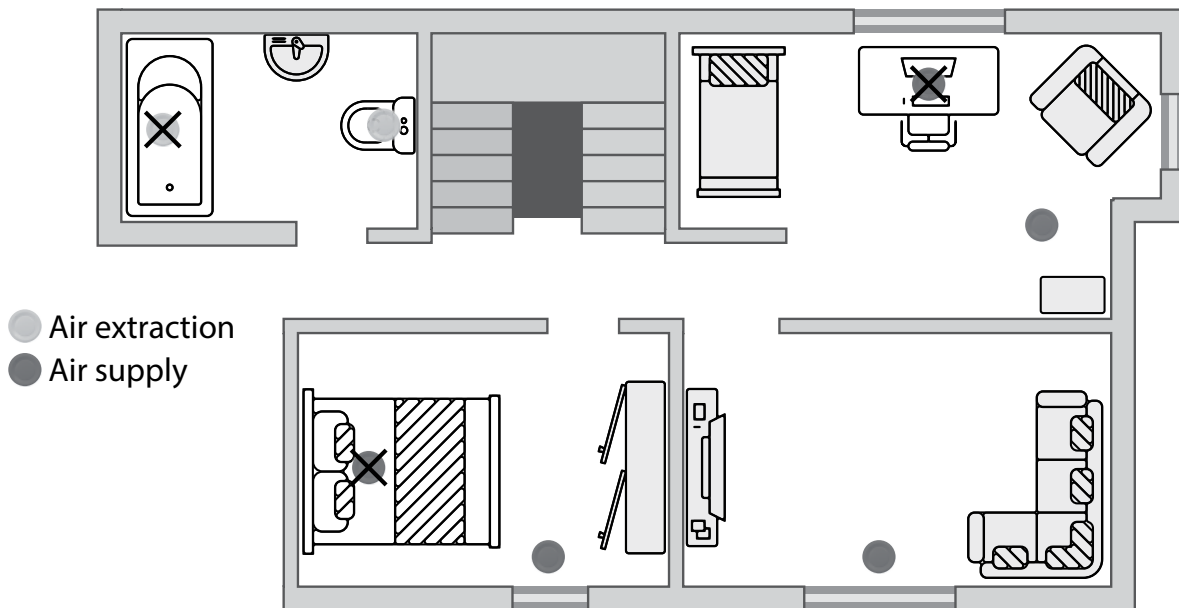
Exhaust grille location



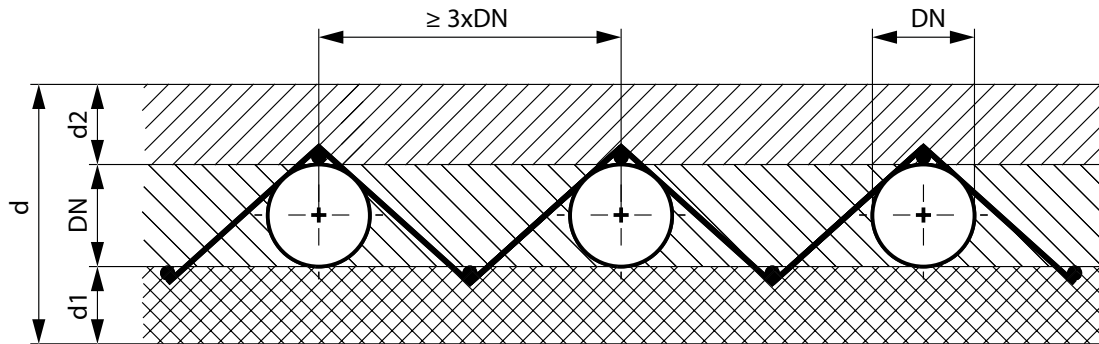
Supply air disk valve location



Recommendations on positioning of supply and exhaust grilles



Recommendations on calculation of slab thickness



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

| Design features | 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 without taking into account the crossing of wires through corrugated pipes for electrical wiring [mm] | d = 180 | | d = 220 | | d = 240 | |
| | d = 200 | | d = 240 | | d = 260 | |

DN - Ø 63, 75 or 90 mm air duct

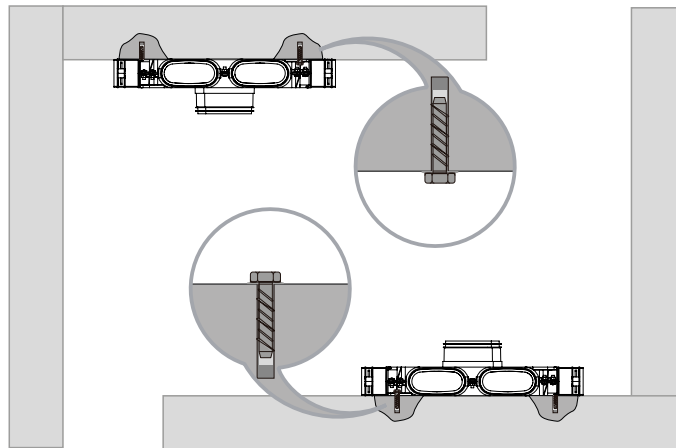
The data in the table also applies to installation in a monolithic slab.

*The data is only valid for the installation of a seamless screed on an insulated base (floating floor) with a minimum thickness of 25 mm.

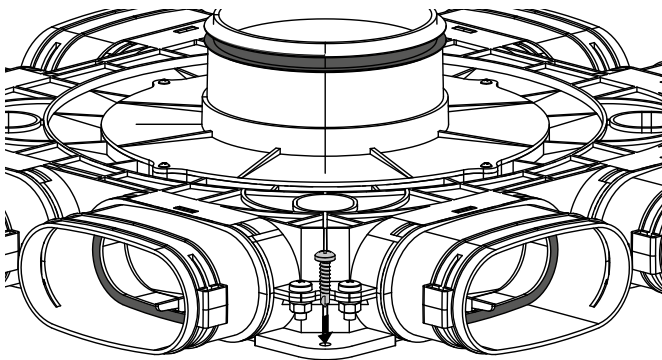
PLASTIC AIR DISTRIBUTION BOXES FOR OVAL DUCTS



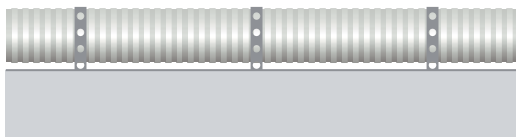
The air distribution box is designed for wall, floor, and ceiling mounting.



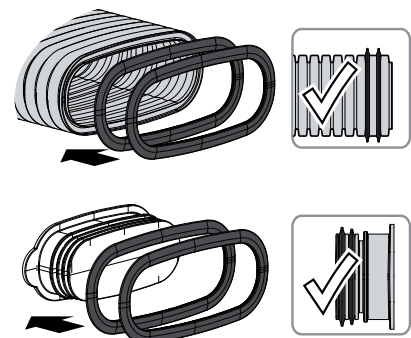
- 1** Fix the air distribution box to the mounting surface. Fasteners to be purchased separately. While choosing fasteners consider the material of the mounting surface and the unit weight.



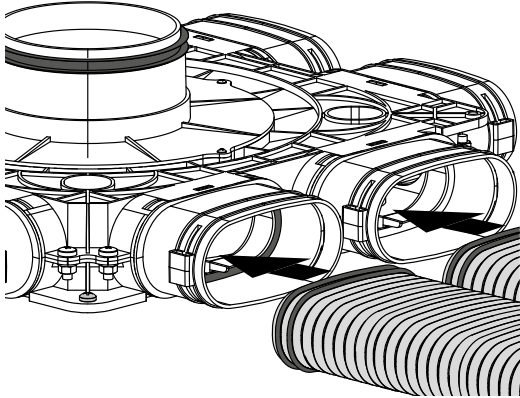
- 2** Lay the air ducts by securing them to the surface with mounting tape.



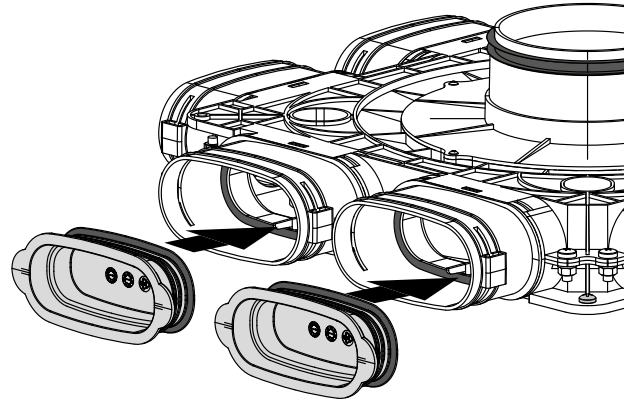
- 3** Put two seals on each end of the air ducts from the flange connection side. Put two seals on the plug.



4 Insert the ducts into the flanges.

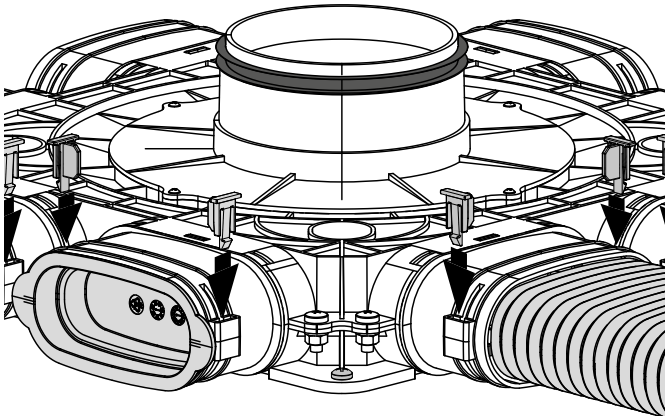


5 Cover the unused flanges with plugs (not included in the delivery set).

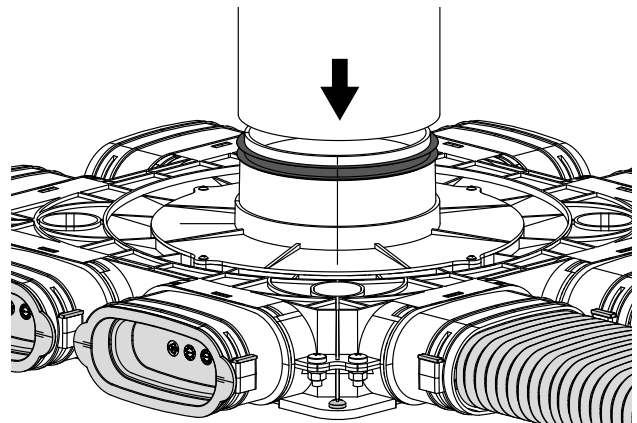


WARNING! If the ducts are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange and the joint between the flange and the plug using a cold shrink tape.

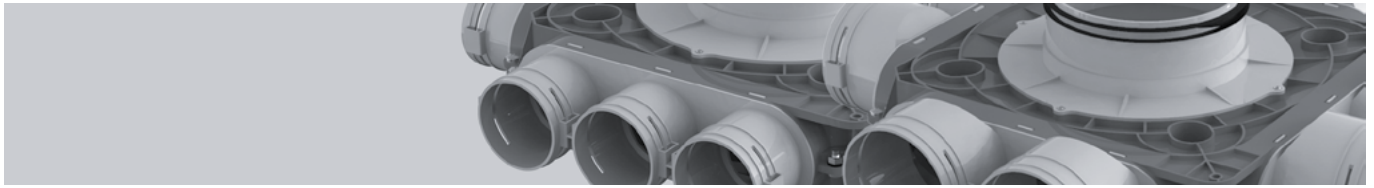
6 Secure the air ducts and plugs on both sides with universal locks.



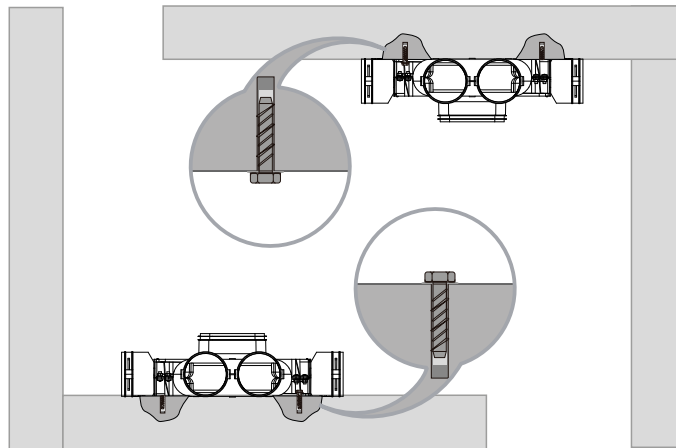
7 Connect the main air duct to the corresponding spigot of the air distribution box.



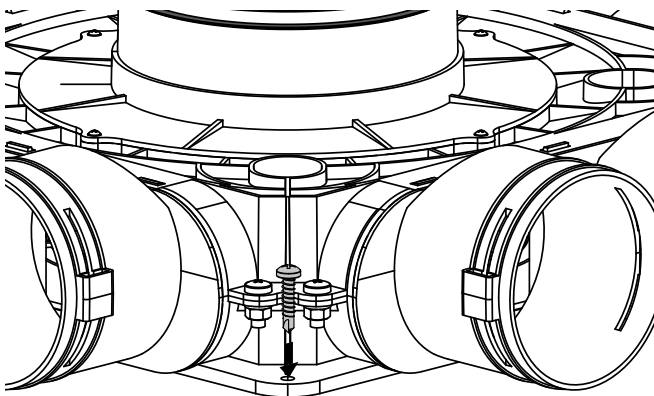
PLASTIC AIR DISTRIBUTION BOXES FOR ROUND DUCTS



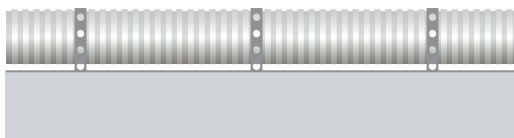
The air distribution box is designed for wall, floor, and ceiling mounting.



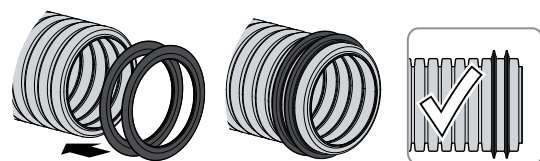
- 1** Fix the air distribution box to the mounting surface. Fasteners to be purchased separately. While choosing fasteners consider the material of the mounting surface and the unit weight.



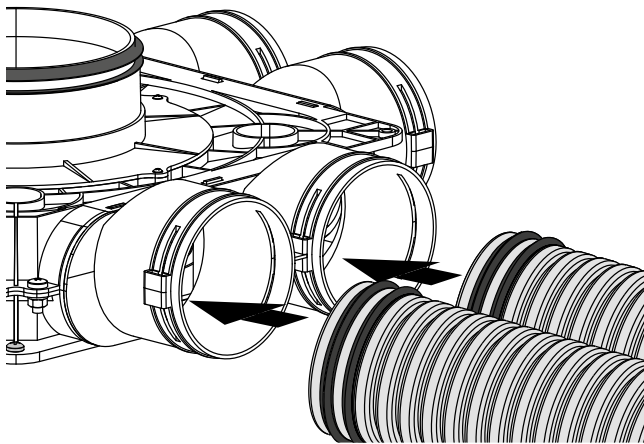
- 2** Lay the air ducts by securing them to the surface with mounting tape.



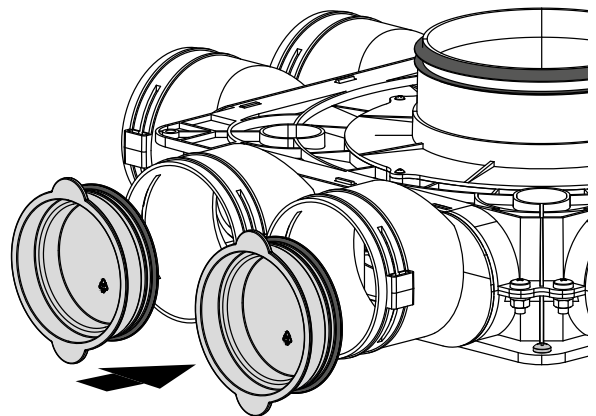
- 3** Place two seals on each duct end on the flange connection side.



4 Insert the ducts into the flanges.

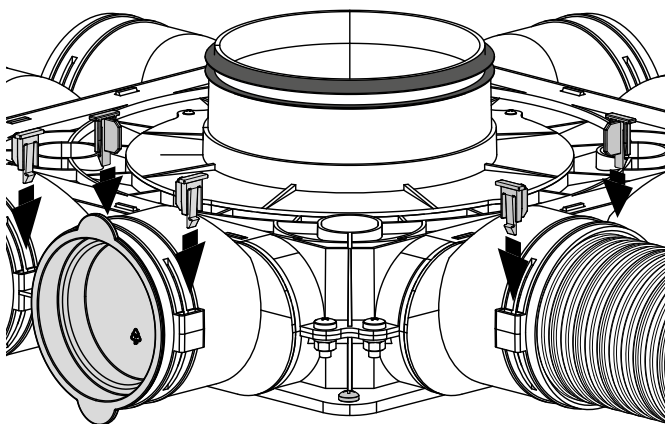


5 Cover the unused flanges with plugs (not included in the delivery set).

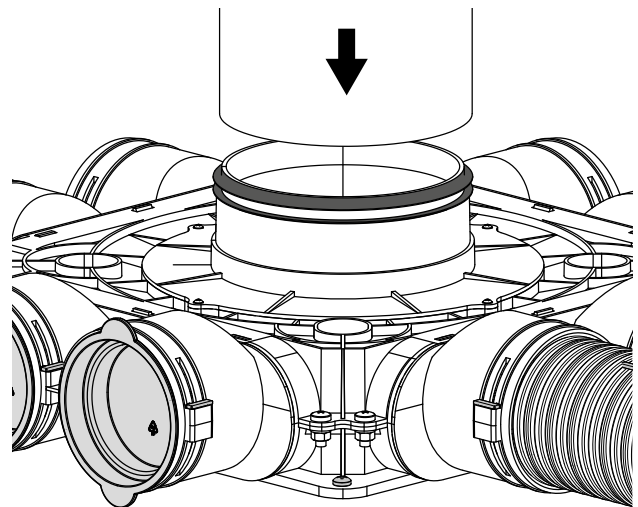


WARNING! If the ducts are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange and the joint between the flange and the plug using a cold shrink tape.

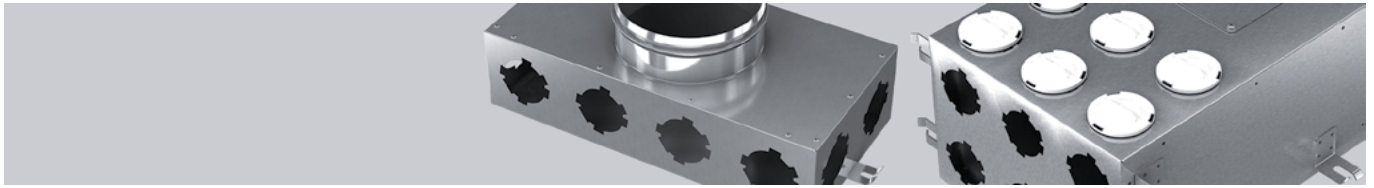
6 Secure each duct and each plug on both sides with universal locks.



7 Connect the main air duct to the corresponding spigot of the air distribution box.



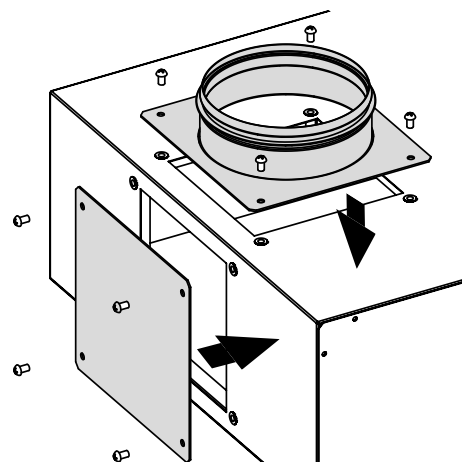
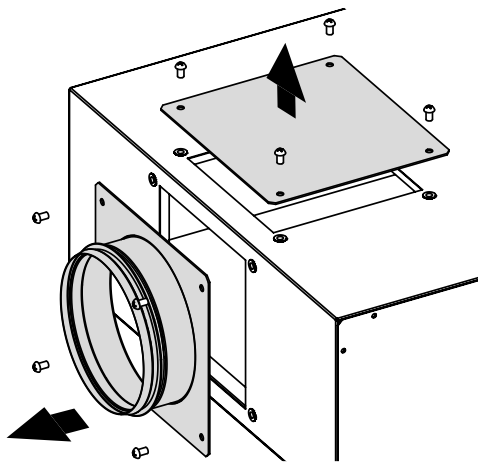
METAL AIR DISTRIBUTION BOXES



1 PREPARATION FOR MOUNTING

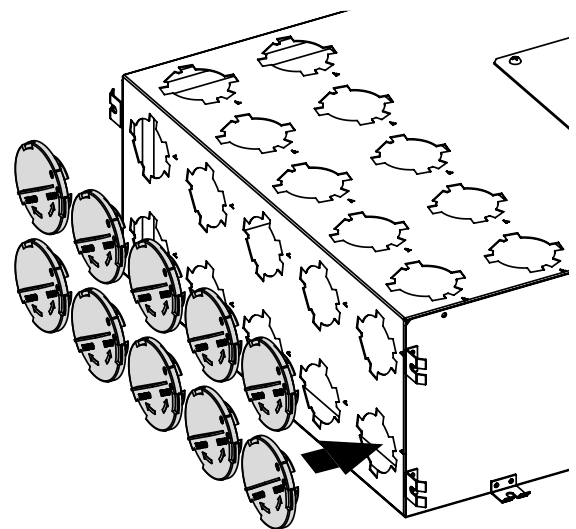
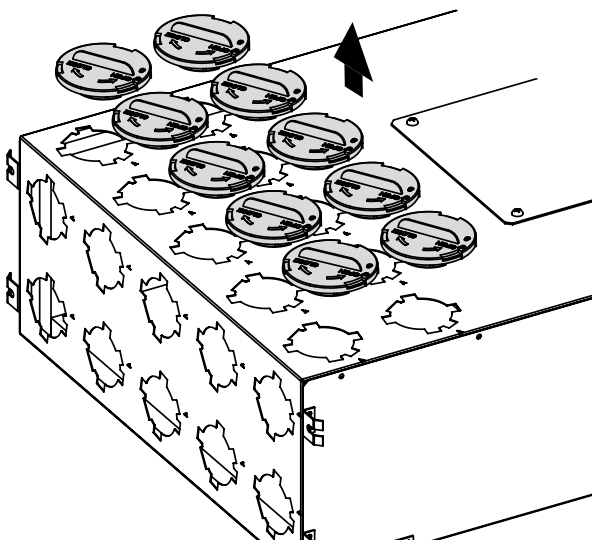
If the air distribution box design enables changing location of the spigot, proceed as follows:

1. Unscrew the service panel and the spigot and disconnect these 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 plugs (included in the delivery set) depending on the way of mounting of the air distribution box:

3. Remove the plugs from the surface, to which the flanges will be connected.
4. Place the removed plugs on a surface that will not be used for flange connection (see "Mounting of plugs").

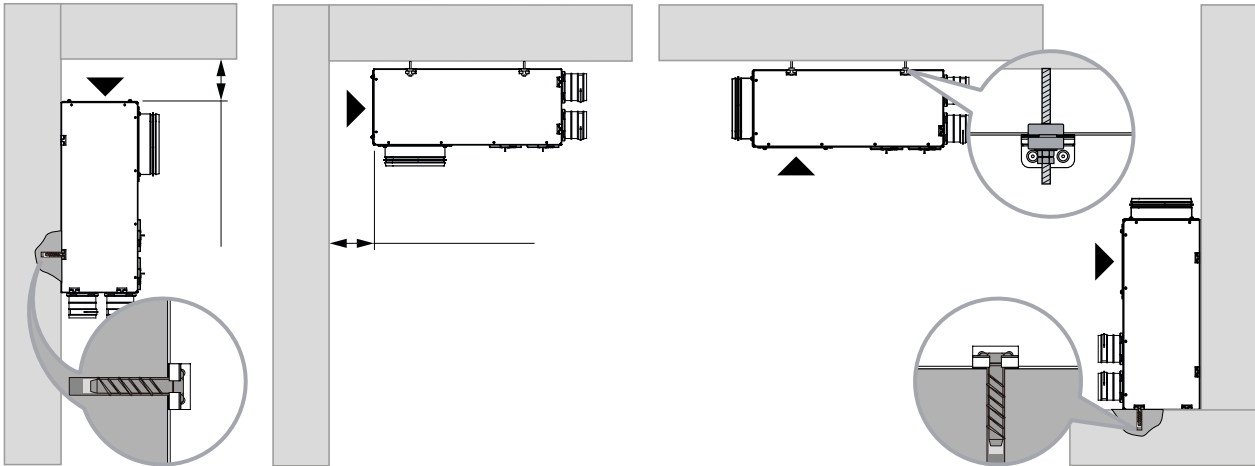


2 INSTALLATION OF A METAL AIR DISTRIBUTION BOX ON THE MOUNTING SURFACE

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.

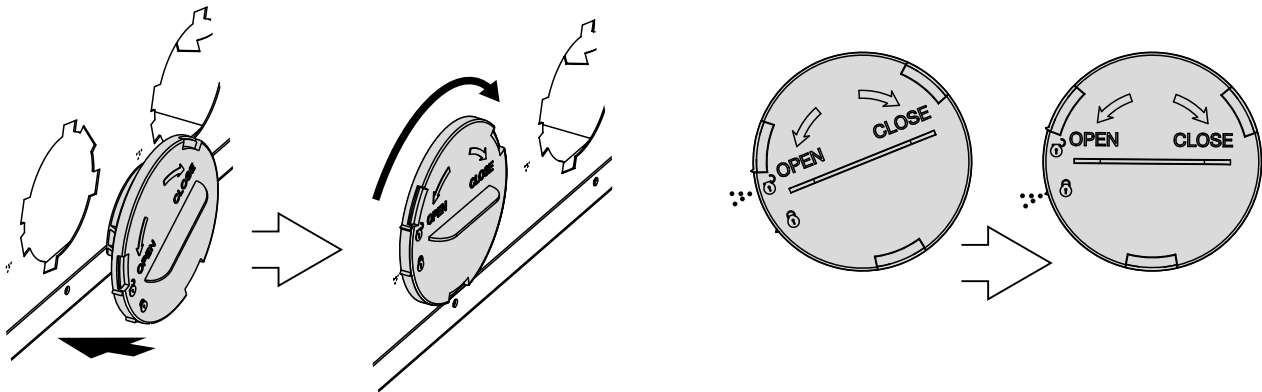


3 MOUNTING OF PLUGS 030263, 030275, 030290

Before installation, make sure that the plugs are sealed.





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

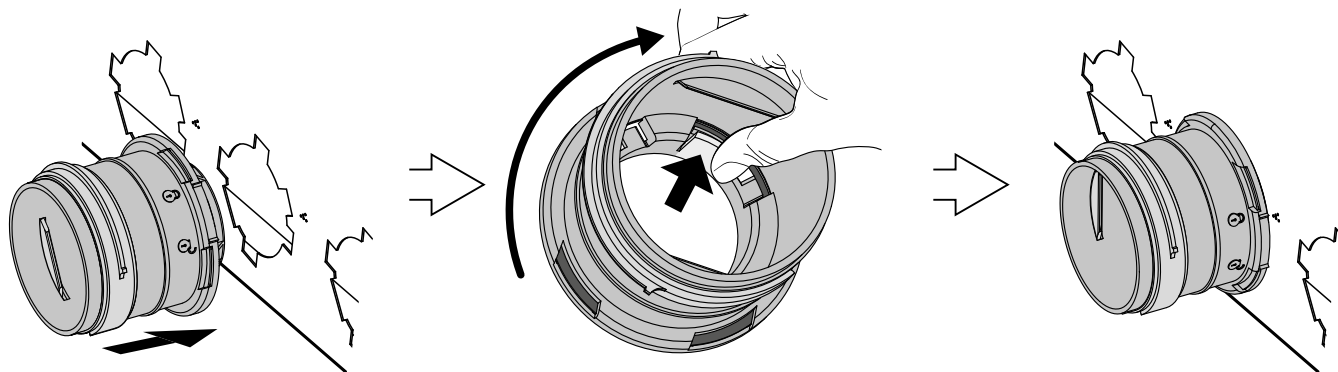
Insert the plug into the slotted hole and turn it clockwise so that the closed lock symbol  on the plug is opposite the arrow  on the casing.



4a MOUNTING OF FLANGES 0263, 0275





Before installation, make sure that the flanges are sealed.

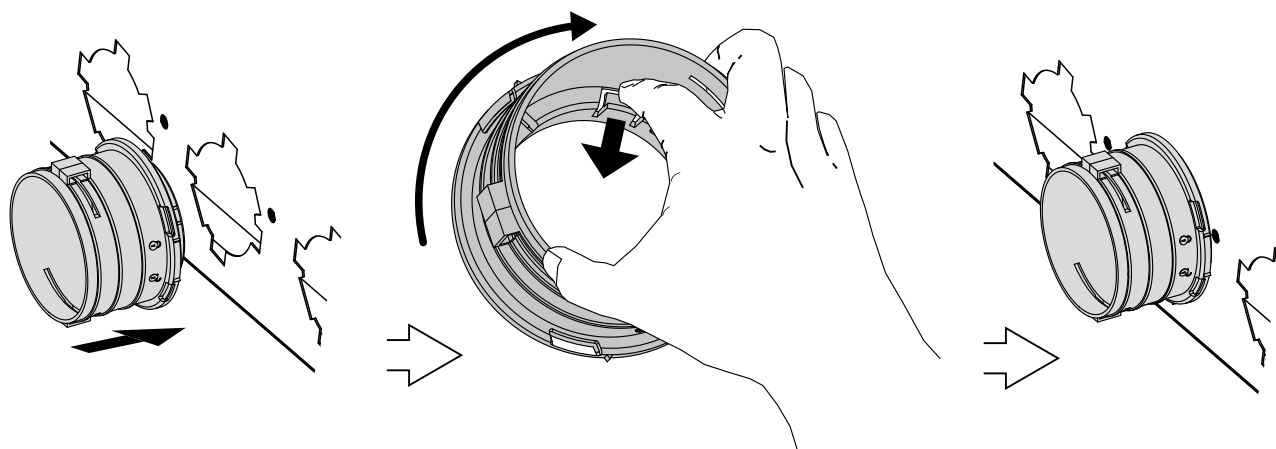
Insert the flange into the slotted hole so that the open lock symbol  on the flange is opposite the arrow  on the casing. To secure in the hole, simultaneously press the lock in the flange towards the inner wall face and rotate the flange clockwise so that the closed lock  on the flange faces the arrow  on the casing.



4b MOUNTING OF FLANGES 0290

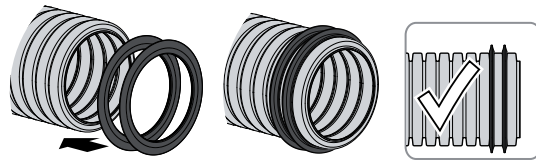
Before installation, make sure that the flanges are sealed.

Insert the flange into the slotted hole so that the image of the open lock  on the flange is opposite the mark  on the casing. To fix it in the hole, simultaneously bend the lock in the flange away from the inner surface of the wall and turn the flange clockwise so that the image of the closed lock  on the flange is opposite the mark  on the casing.



5 CONNECTION OF SEMI-RIGID DUCTS

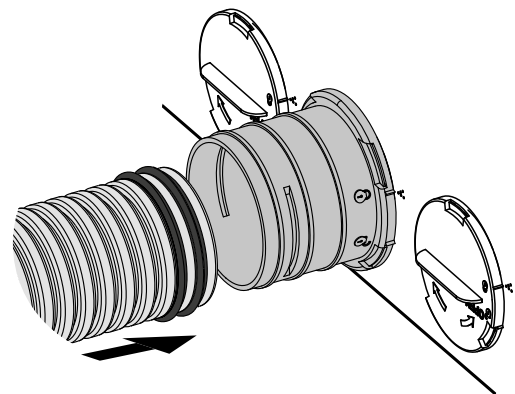
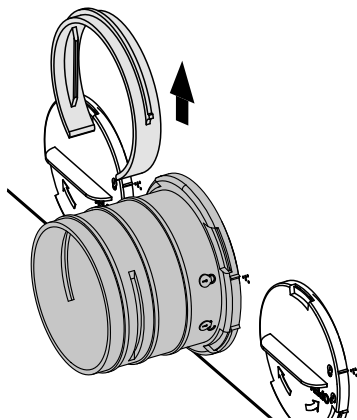
Place two seals on each duct end on the flange connection side.



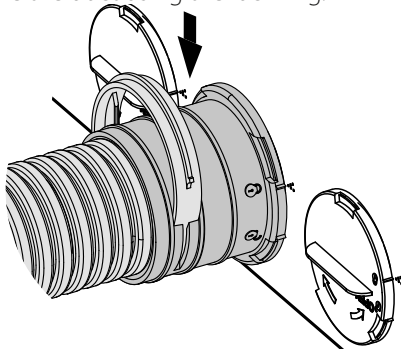
WARNING! If the ducts are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange and the joint between the flange and the plug using a cold shrink tape.

Fixing the air ducts with a lock ring

1. Remove the lock ring (supplied with the flange).
2. Insert the air duct with the sealing ring into the flange.

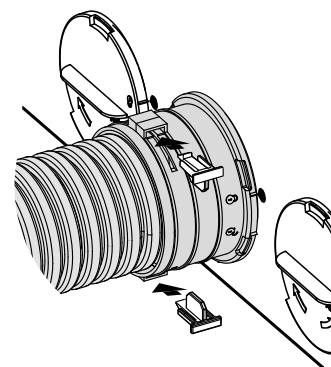
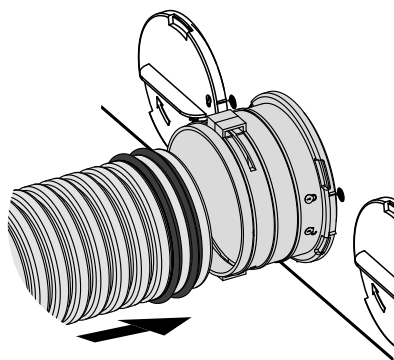


3. Secure the duct using the lock ring.

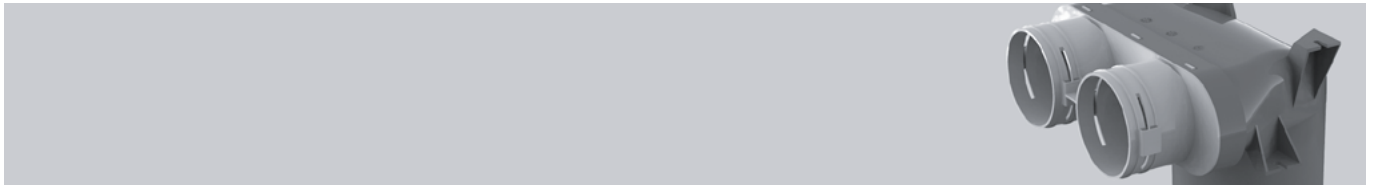


Fixing the air ducts with a universal lock

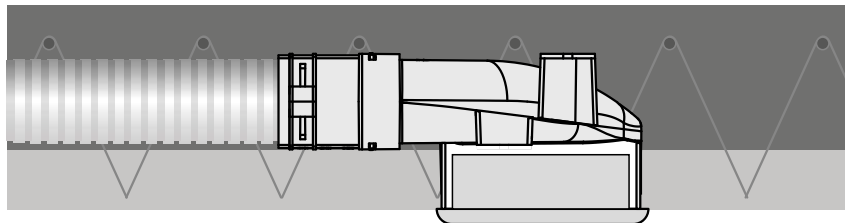
1. Insert the air duct with the sealing ring into the flange.
2. Secure the duct with a universal lock.



PLASTIC CEILING CONNECTORS FOR ROUND DUCTS

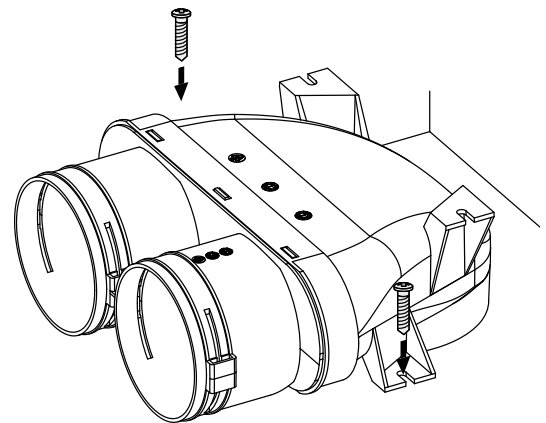
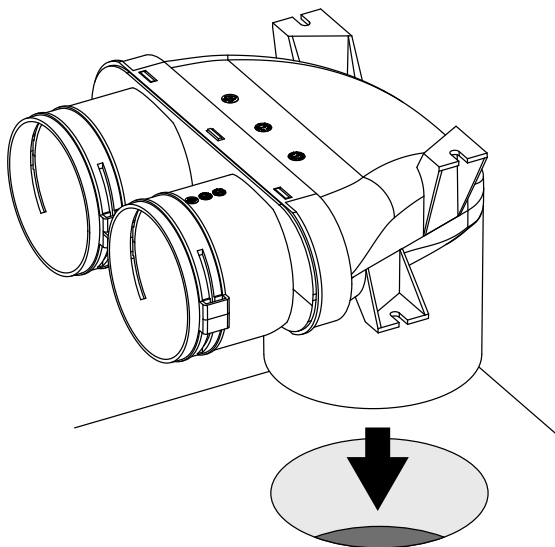


Mounting of the connector in the floor slab

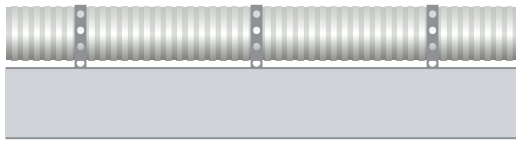


1 Drill a 130 mm hole in the non-removable slab formwork for a 125 mm spigot of the connector.

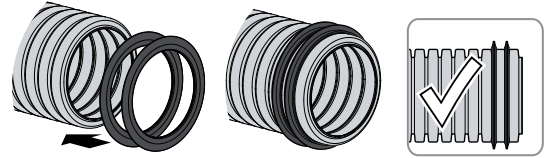
2 Install and fix the connector. Fill the gaps between the spigot and the formwork surface with sealant (mounting foam).



3 Lay the ducts, securing them to the formwork with masking tape if necessary.

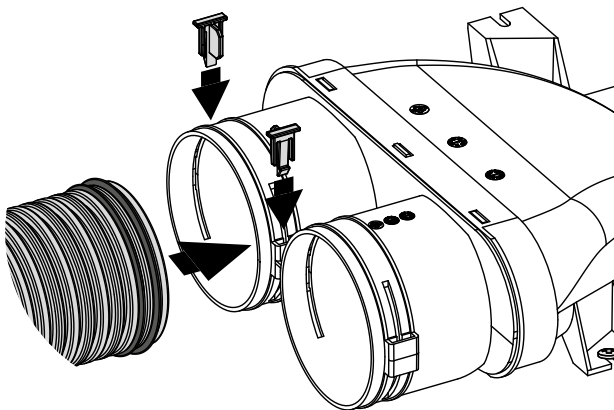


4 Place two seals on each duct end on the flange connection side.

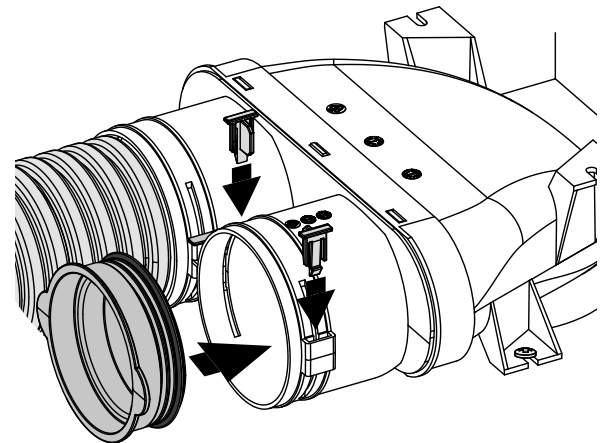


WARNING! Before the ducts are covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange and the joint between the flange and the plug using a cold shrink tape.

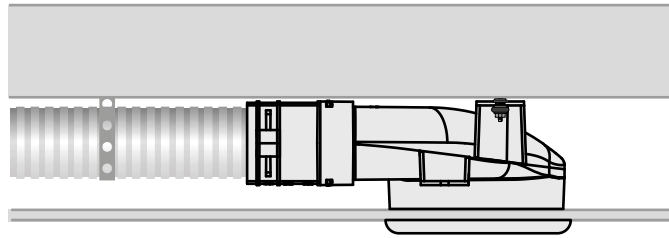
5 Insert the air ducts with the sealing rings into the flanges. Secure the ducts in the flanges on both sides using the universal locks (included in the connector delivery set).



6 Close the unused flanges with plugs. Secure the plugs in the flanges on both sides using the universal locks (included in the connector delivery set).

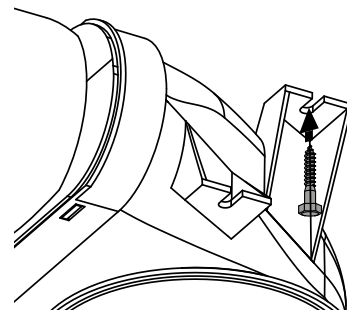
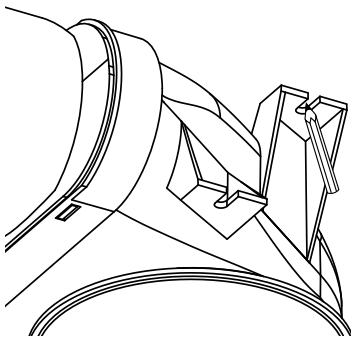


Ceiling mounting of the connector



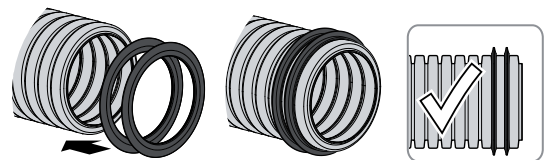
1 Use the connector casing to mark and drill holes for fixing.

2 Fasten the connector to the ceiling. While choosing fasteners (to be purchased separately) consider the material of the mounting surface as well as the weight of the unit.

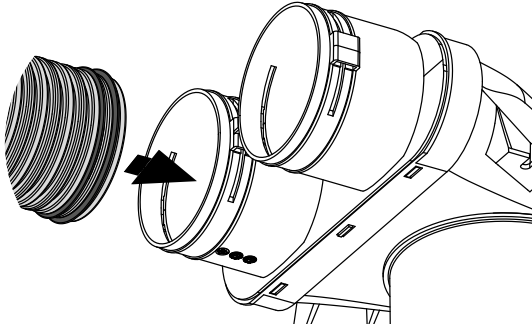


3 Lay the air ducts by securing them under the ceiling with mounting tape.

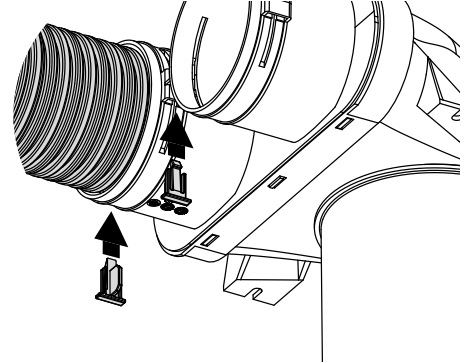
4 Place two seals on each duct end on the flange connection side.



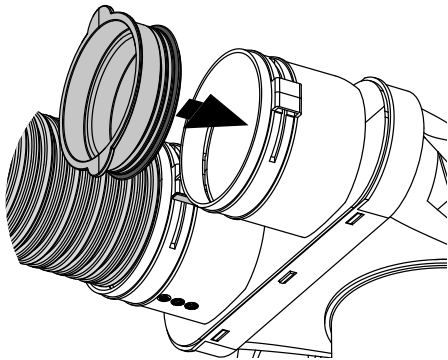
5 Insert the air ducts with the sealing rings into the flanges.



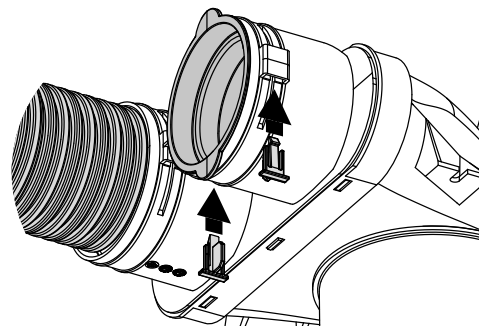
6 Secure the ducts in the flanges on both sides using the universal locks.



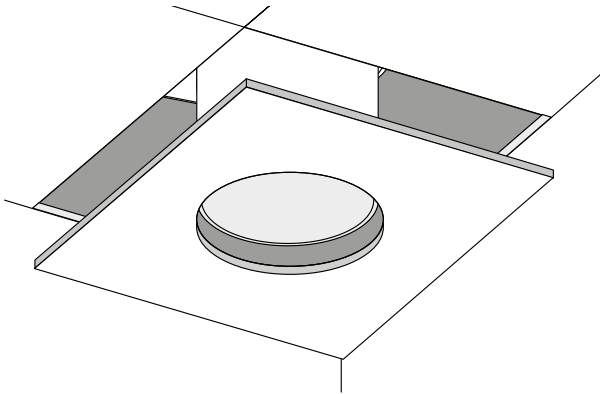
7 Close the unused flanges with plugs.



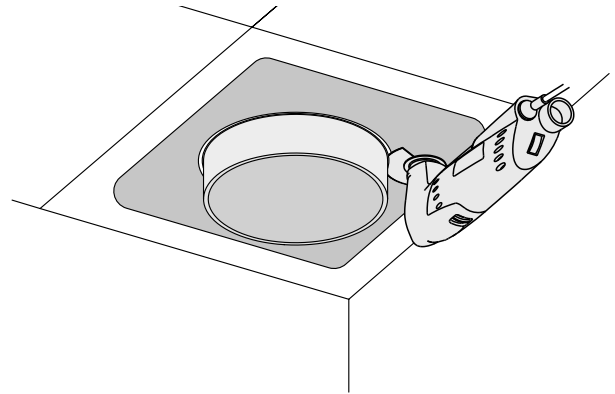
8 Secure the plugs in the flanges on both sides using the universal locks (included in the flange delivery set).



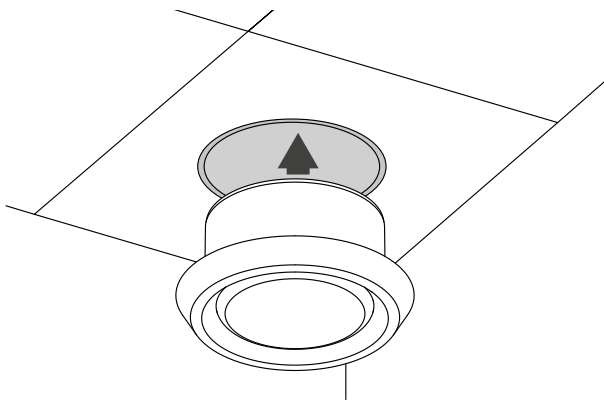
- 9** Mount the false ceiling and prepare a hole in it for the connector outlet.



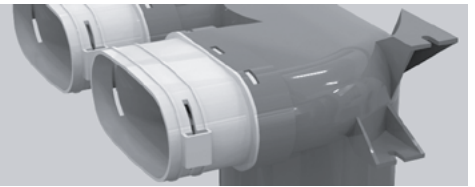
- 10** Cut the protruding part of the spigot flush with the ceiling, protecting the surface from damage with cutting tools.



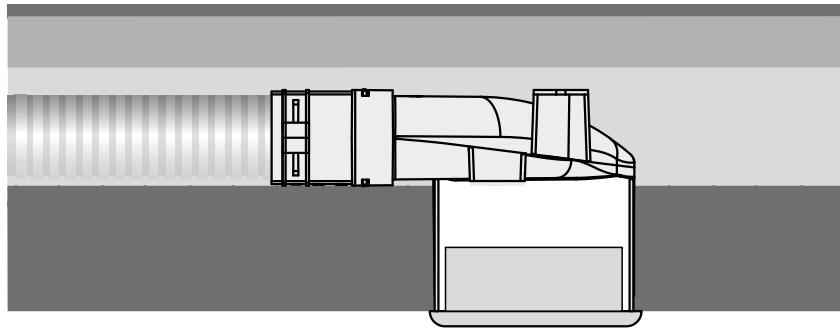
- 11** After finishing work, install the air disc valves (not included in the delivery set).



PLASTIC CEILING CONNECTORS FOR OVAL DUCTS

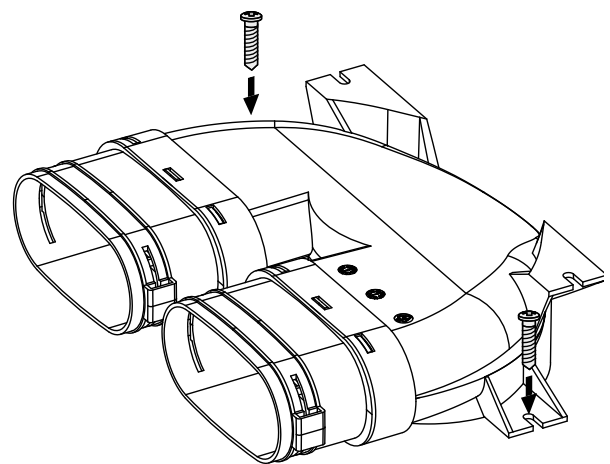
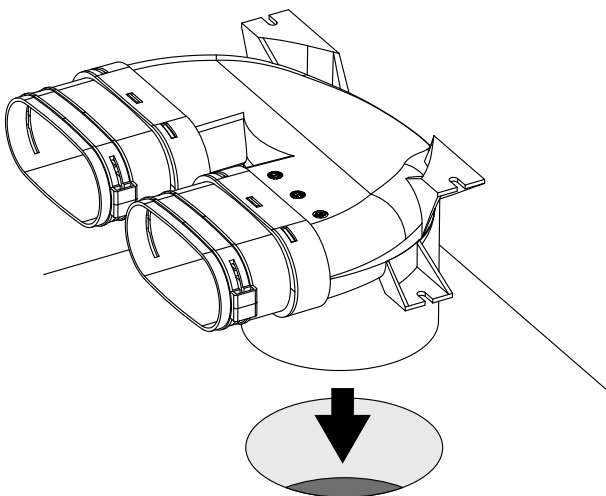


Mounting of the connector in the floor slab

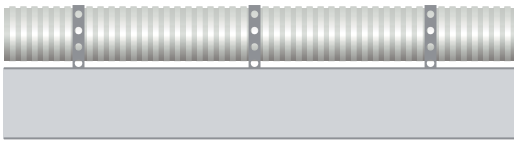


1 Drill a \varnothing 130 mm hole in the floor slab for a \varnothing 125 mm connector spigot outlet.

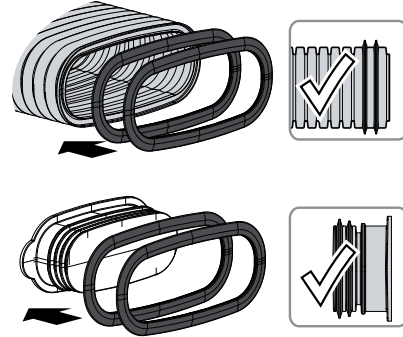
2 Install and fix the connector. Fill the gaps between the spigot and the slab with sealant (mounting foam).



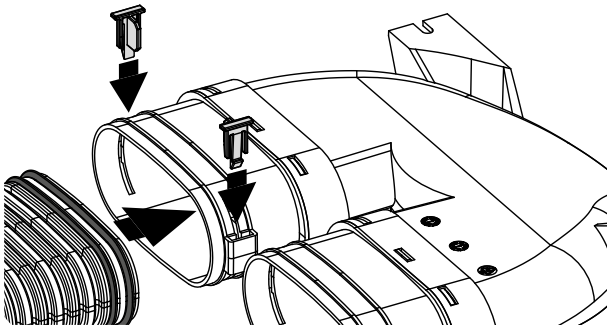
3 Lay the air ducts by securing them to the surface with mounting tape.



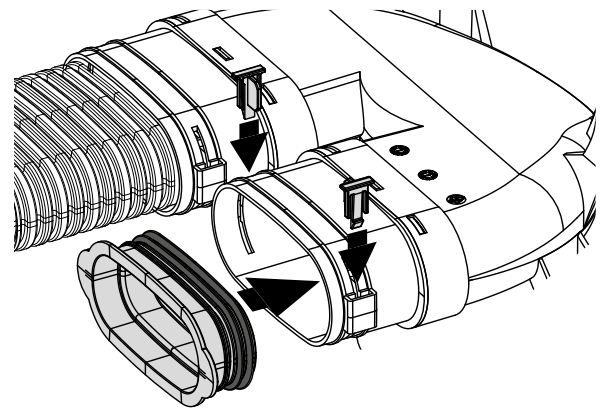
4 Put two seals on each end of the air ducts from the flange connection side. Put two seals on the plug.



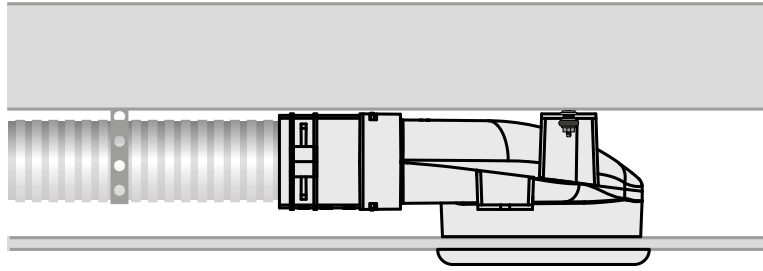
5 Insert the air ducts with the sealing rings into the flanges. Secure the ducts in the flanges on both sides using the universal locks (included in the connector delivery set).



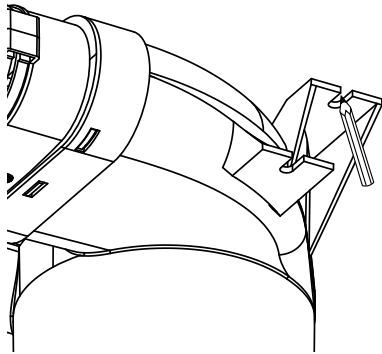
6 Close the unused flanges with plugs. Secure the plugs in the flanges on both sides using the universal locks (included in the connector delivery set).



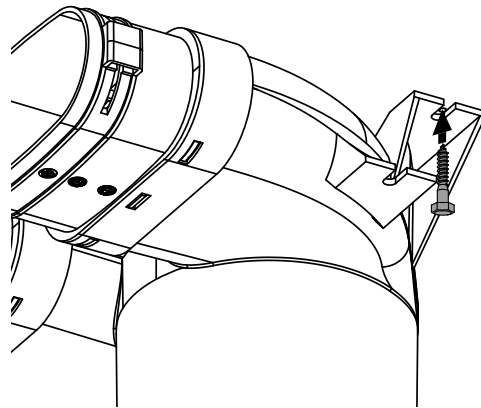
Ceiling mounting of the connector



1 Use the connector casing to mark and drill holes for fixing.



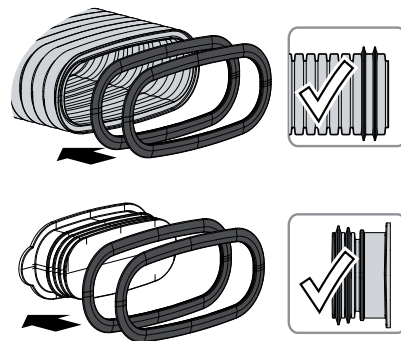
2 Fasten the connector to the ceiling. While choosing fasteners (to be purchased separately) consider the material of the mounting surface as well as the weigh of the unit.



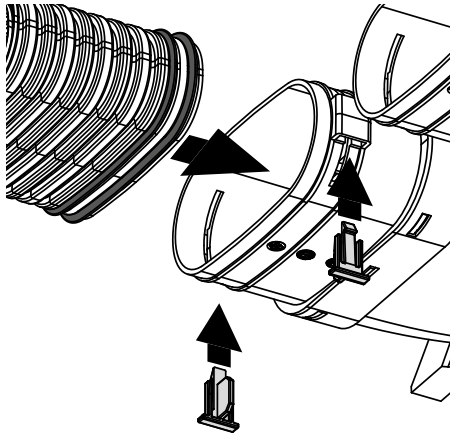
3 Lay the air ducts by securing them under the ceiling with mounting tape.



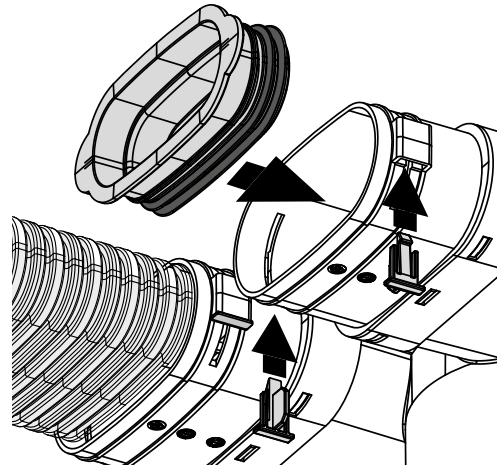
4 Put two seals on each end of the air ducts from the flange connection side. Put two seals on the plug.



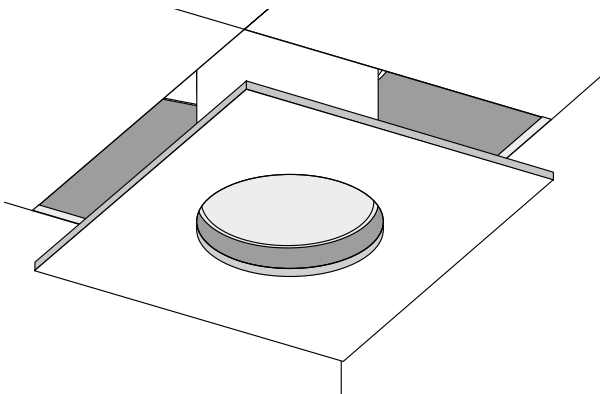
- 6** Insert the ducts with the seals into the flanges and secure them on both sides using the universal locks (included in the delivery set).



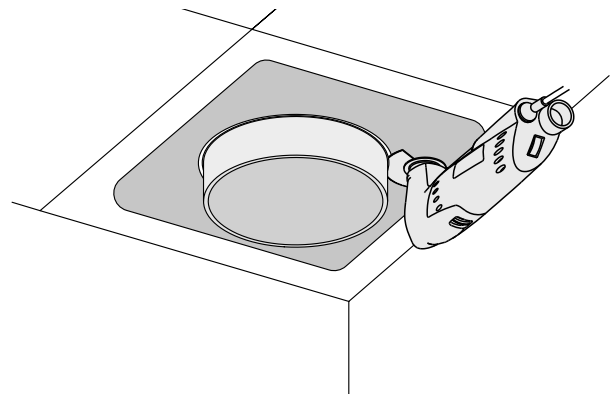
- 7** Close the unused flanges with plugs and fix them on both sides with universal locks (included in the flange delivery set).



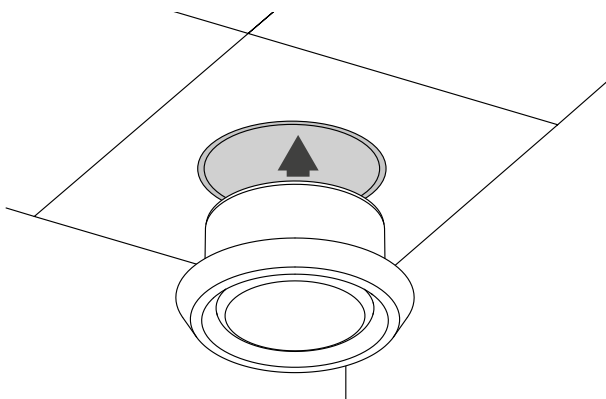
- 8** Mount the false ceiling and prepare a hole in it for the connector outlet.



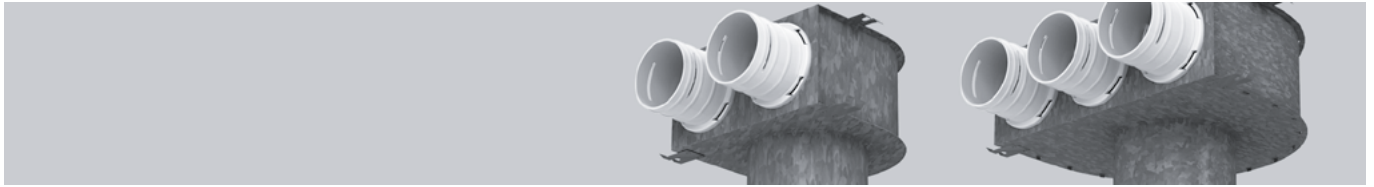
- 9** Cut the protruding part of the spigot flush with the ceiling, protecting the surface from damage with a cutting tool.



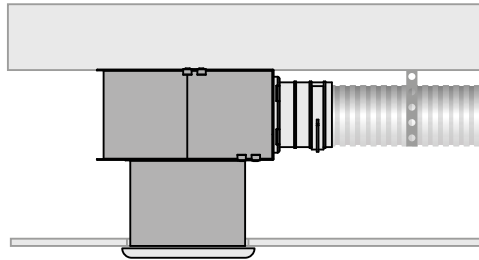
- 10** After finishing work, install the air disc valves (not included in the delivery set).



CEILING-MOUNTED METAL CONNECTORS

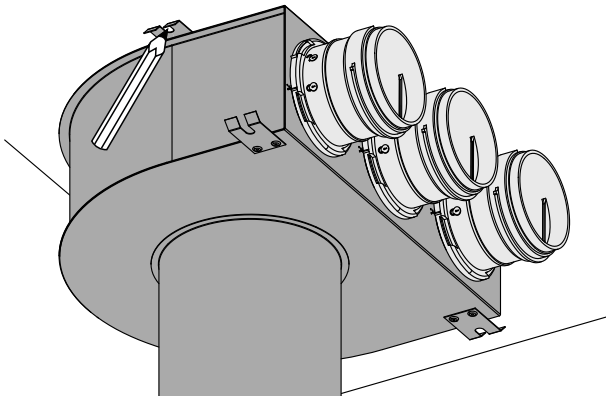


Ceiling mounting of the connector



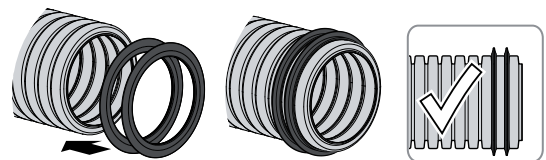
1 Use the connector casing to mark and drill holes for fixing.

2 Fasten the connector to the ceiling. While choosing fasteners (to be purchased separately) consider the material of the mounting surface as well as the weight of the unit.

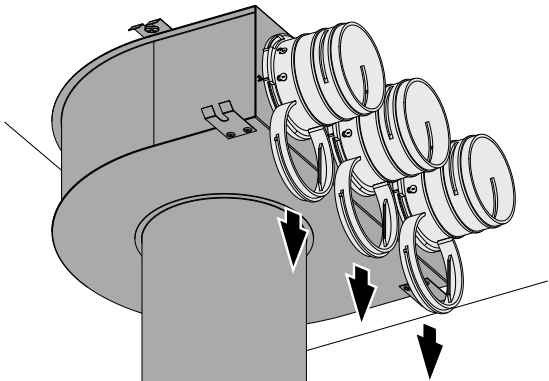


3 Lay the air ducts by securing them under the ceiling with mounting tape.

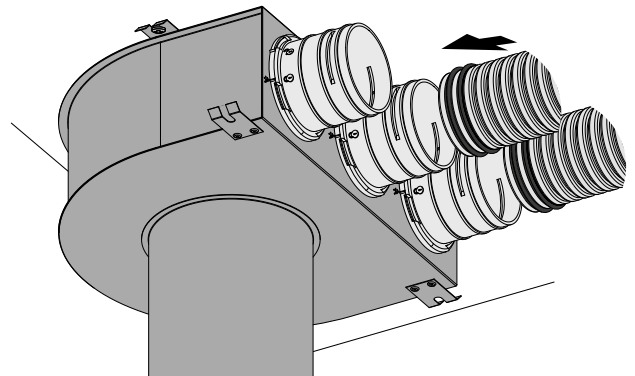
4 Place two seals on each duct end on the flange connection side.



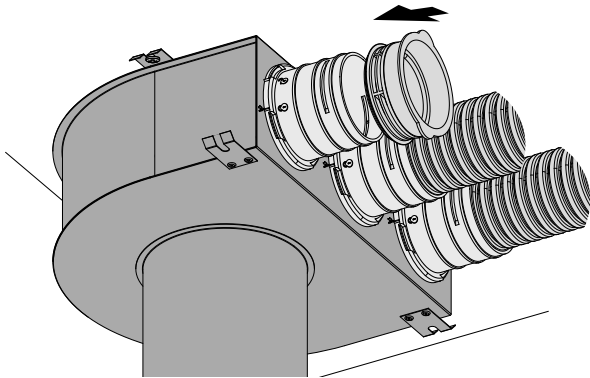
- 5** Remove the lock rings from the flanges (supplied with the flanges).



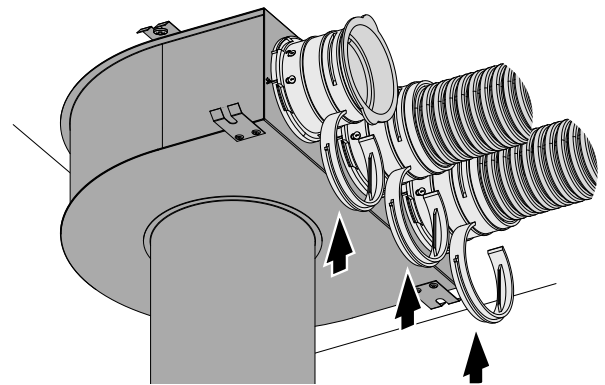
- 6** Insert the ducts into the flanges.



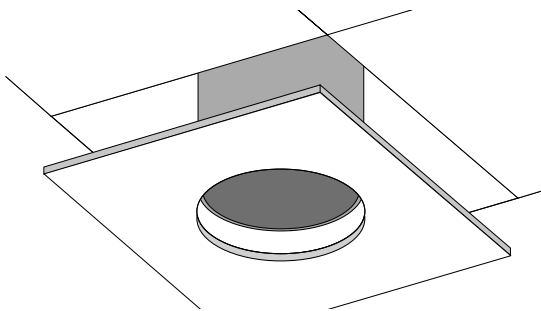
- 7** Close the unused flanges with plugs.



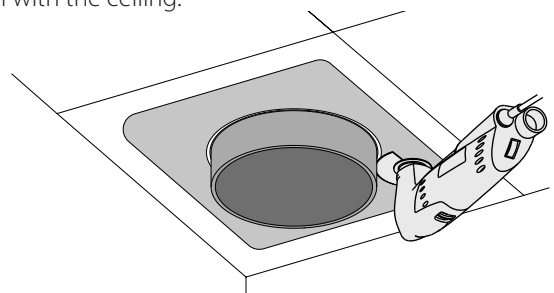
- 8** Secure the duct and the plugs using the lock rings.



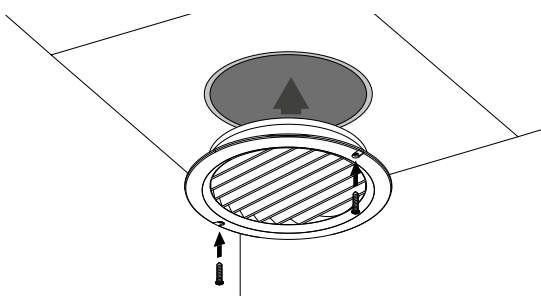
- 9** Prepare a $\varnothing 130$ mm hole in the ceiling for installation of the connector spigot and install the suspended ceiling.



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



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



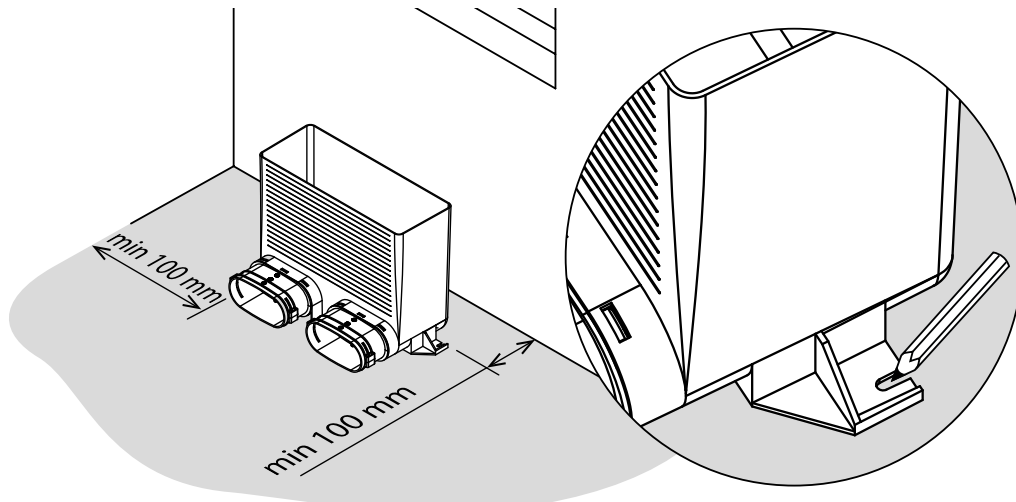
PLASTIC FLOOR-MOUNTED CONNECTOR FOR OVAL DUCTS

Mounting the connector on top of the slab into the thickness of the floor insulation



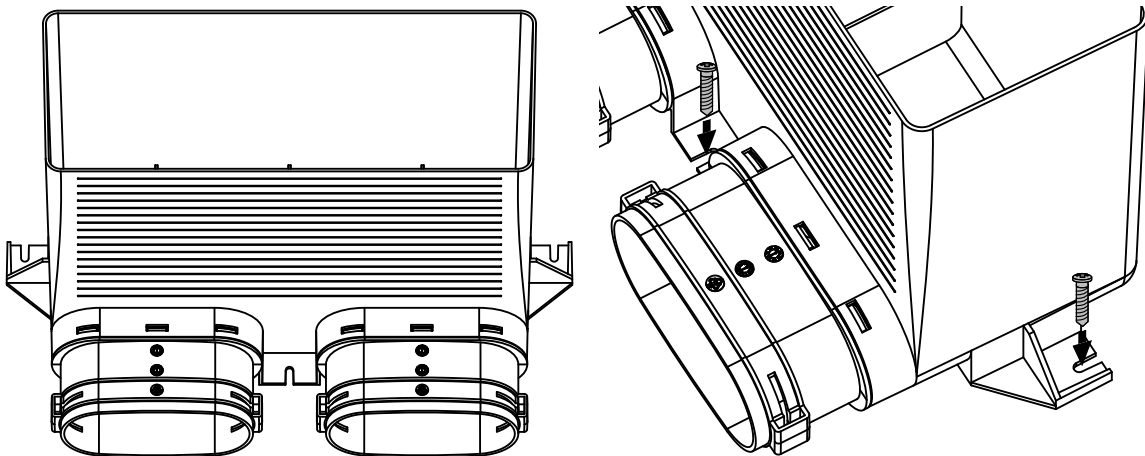
1

Make markings on the slab for mounting holes. Use the connector as a template.

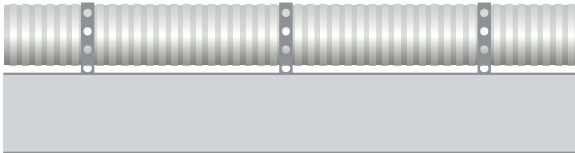


2

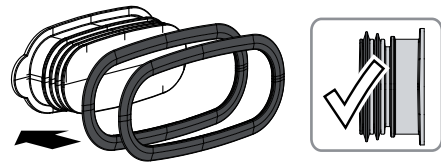
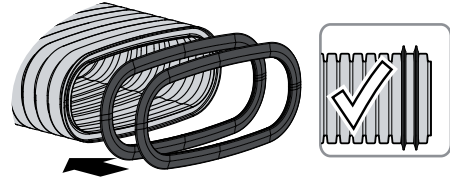
Drill three holes according to the marking and fix the connector to the surface.



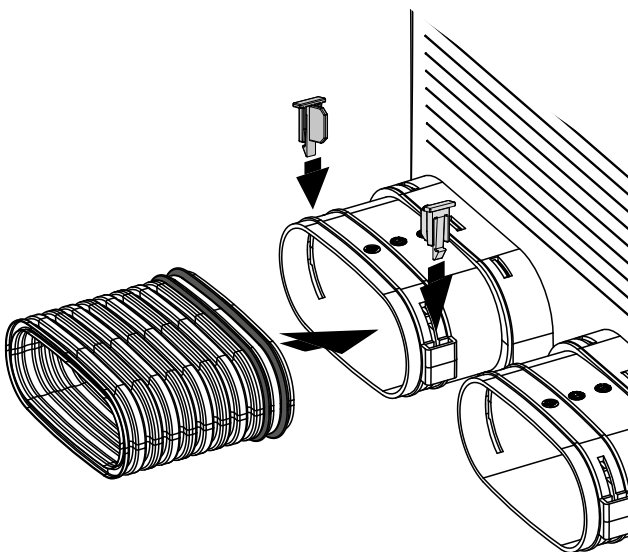
- 3** Lay the air ducts by securing them to the surface with mounting tape.



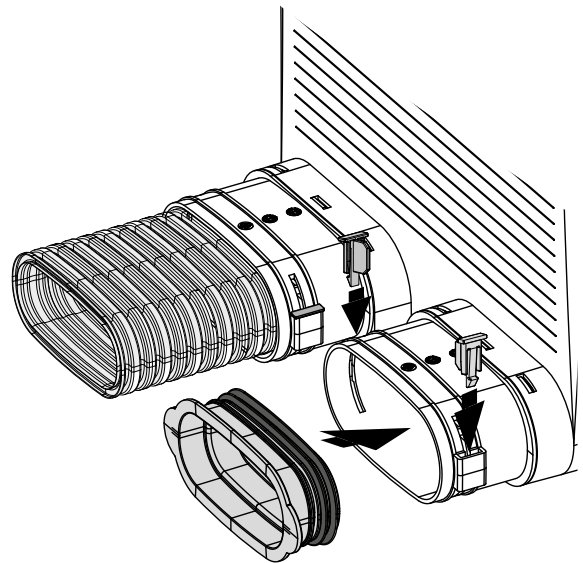
- 4** Put two seals on each end of the air ducts from the flange connection side. Put two seals on the plug.



- 5** Insert the ducts with the seals into the flanges and secure them on both sides using the universal locks (included in the delivery set).



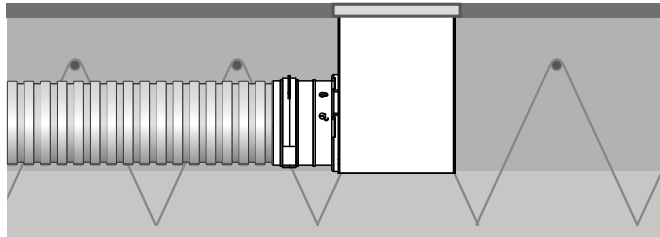
- 6** Close the unused flanges with plugs and fix them on both sides with universal locks (included in the flange delivery set).



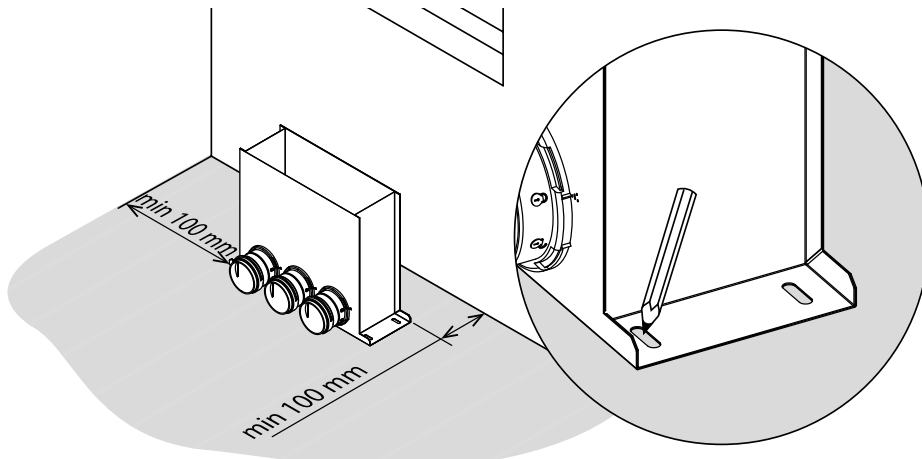
FLOOR-MOUNTED METAL CONNECTORS



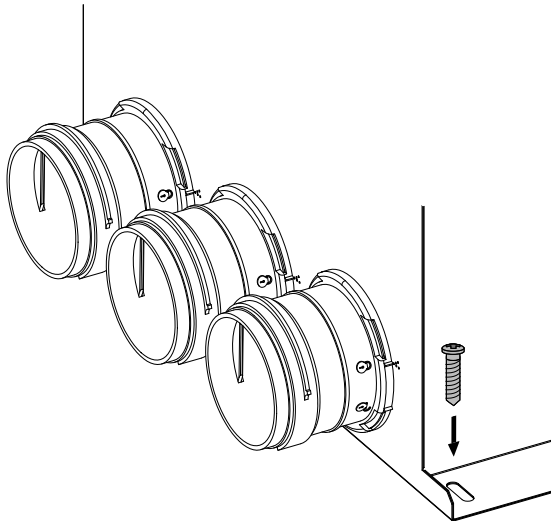
Mounting of the connector into the slab with concrete casting



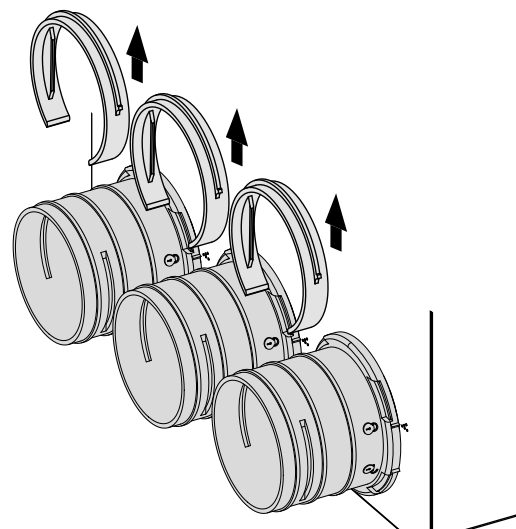
- 1** Make markings on the non-removable formwork of the slab for fixing holes. Use the connector as a template.



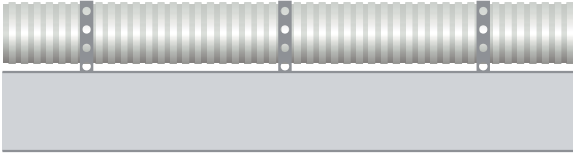
- 2** Drill holes according to the marking and fix the connector to the surface.



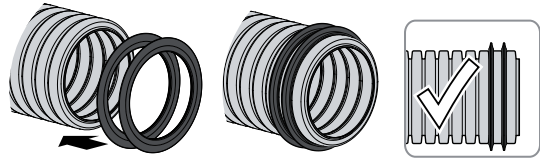
- 3** Remove the lock rings from the flanges (supplied with the flanges).



- 4** Lay the air ducts by securing them to the surface with mounting tape.

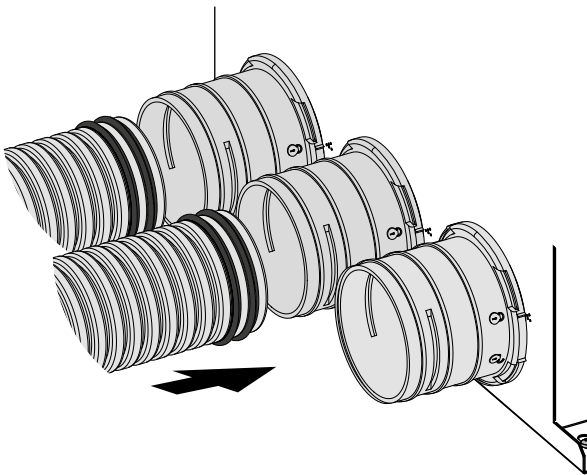


- 5** Place two seals on each duct end on the flange connection side.

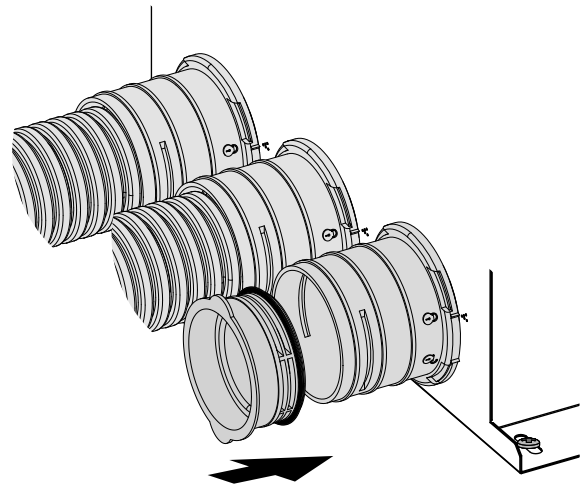


WARNING! Before the ducts are covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange and the joint between the flange and the plug using a cold shrink tape.

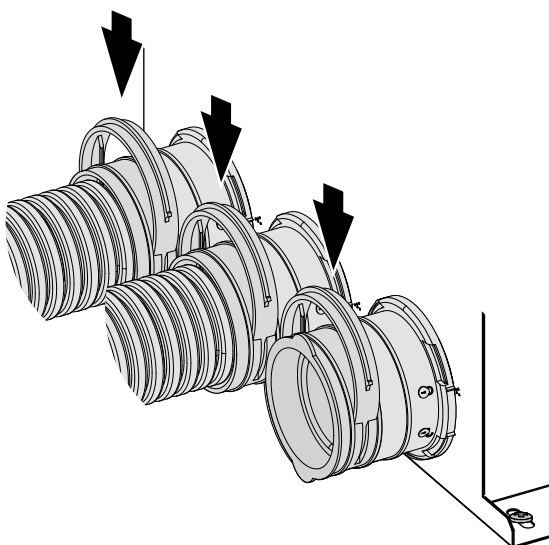
- 6** Insert the ducts with the sealing rings into the flanges.



- 7** Close the unused flanges with plugs.



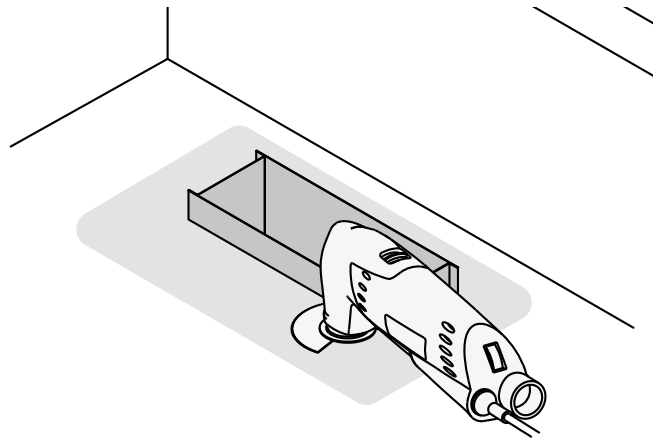
- 8** Secure the duct and the plugs using the lock rings.



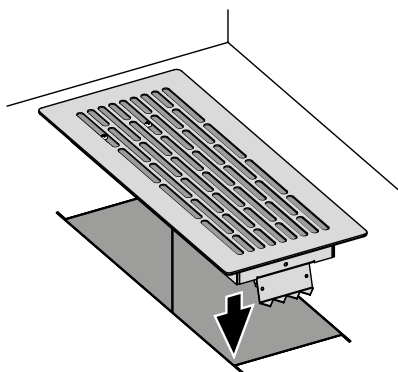
VENTILATION GRILLE MOUNTING

Installation of a ventilation grille

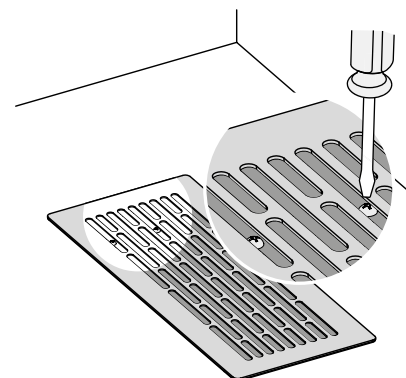
Cut the protruding part of the connector to be flush with the floor.
The floor surface must be protected against damages with cutting tools.



1. Insert the grille into the connector after installation of the finish floor.

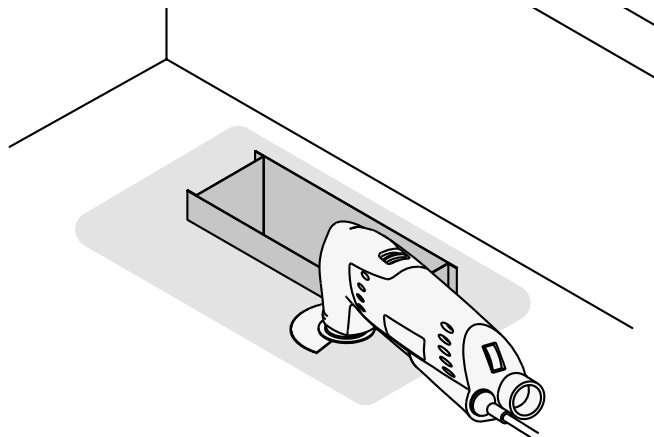


2. Secure the grille in the connector by tightening the screws of the spacer tabs with a screwdriver.



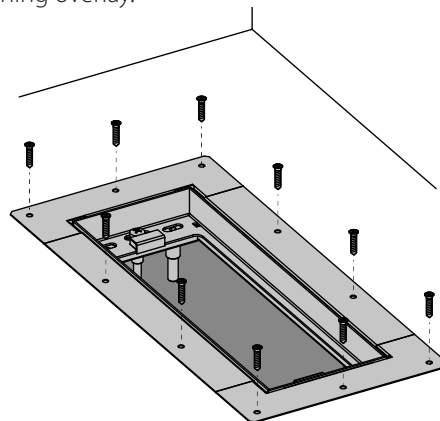
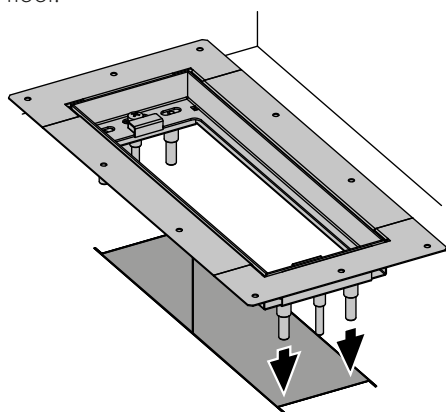
Installation of a flush-mounted ventilation grille

Cut the protruding part of the connector to be flush with the finishing screed before laying the finish floor. The floor surface must be protected against damages with cutting tools.



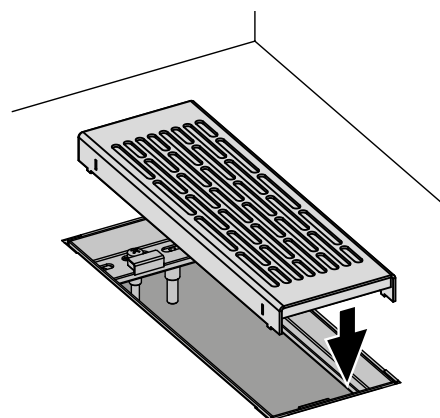
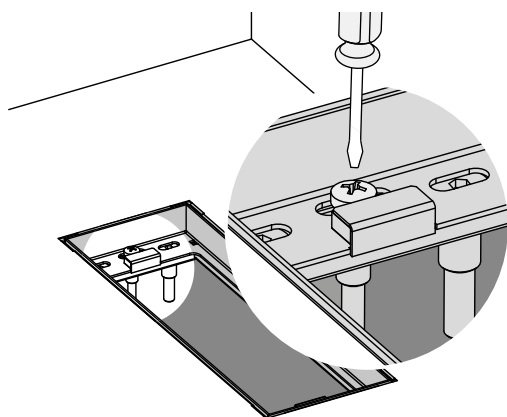
1. Insert the frame into the connector prior to installation of the finish floor.

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

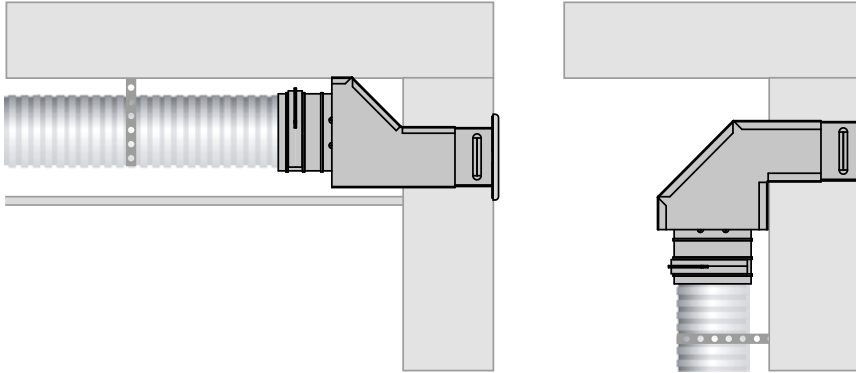


3. Unscrew the fixing screw with a screwdriver. Use a hexagonal wrench to adjust the levelling screws and fix the frame by tightening of the fixing screw.

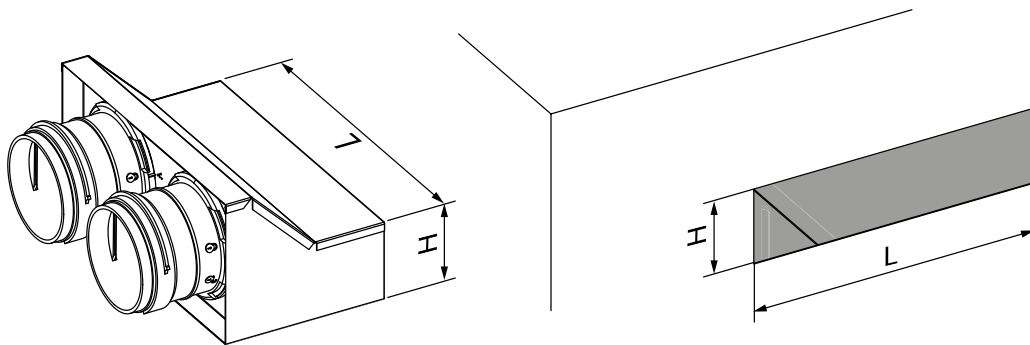
4. Insert the grille into the frame.



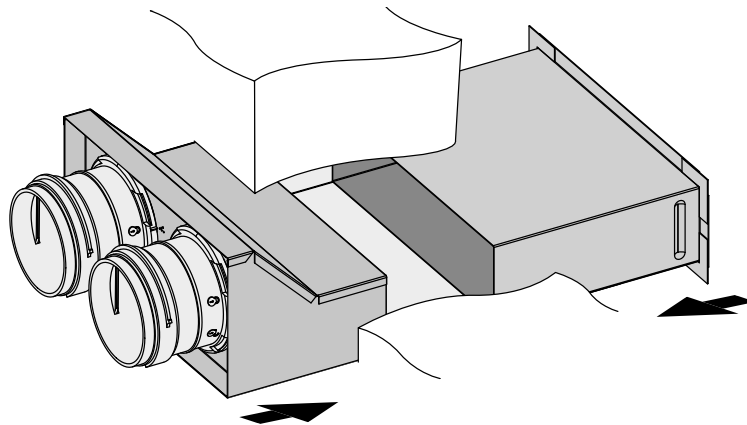
WALL-MOUNTED METAL CONNECTOR



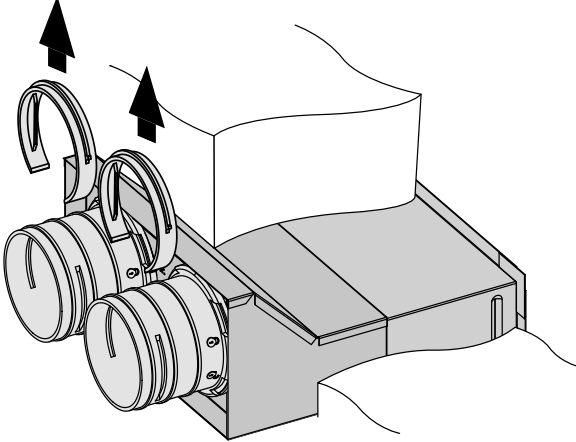
- 1** Bore a rectangular core hole in the wall.



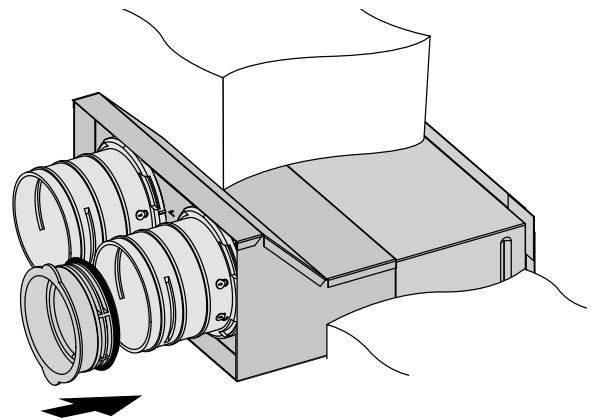
- 2** Insert the connector in the opening. Seal the gaps between the connector and the wall with expanding foam.



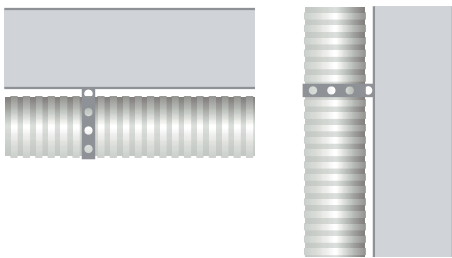
- 3** Remove the lock rings from the flanges (supplied with the flanges).



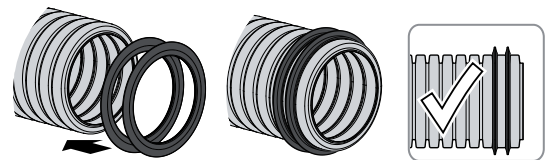
- 4** Cover the unused flanges with caps (not included in the delivery set).



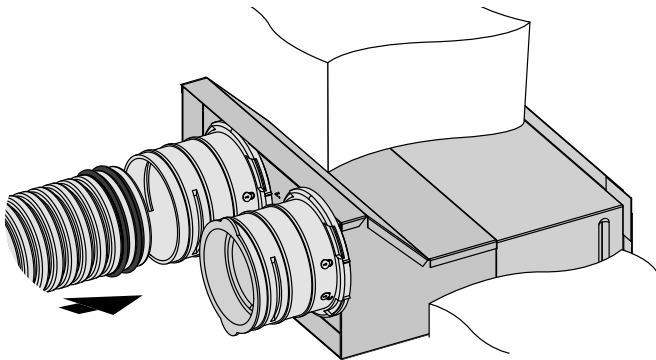
- 5** Lay the air ducts by securing them to the surface with mounting tape.



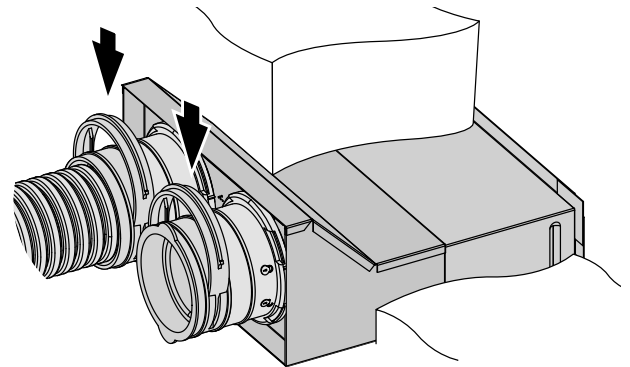
- 6** Place two seals on each duct end on the flange connection side.



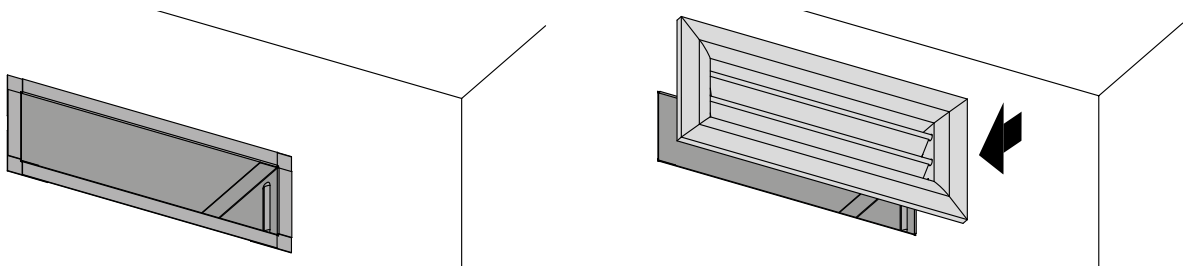
- 7** Insert the duct with the sealing ring into the flange.



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



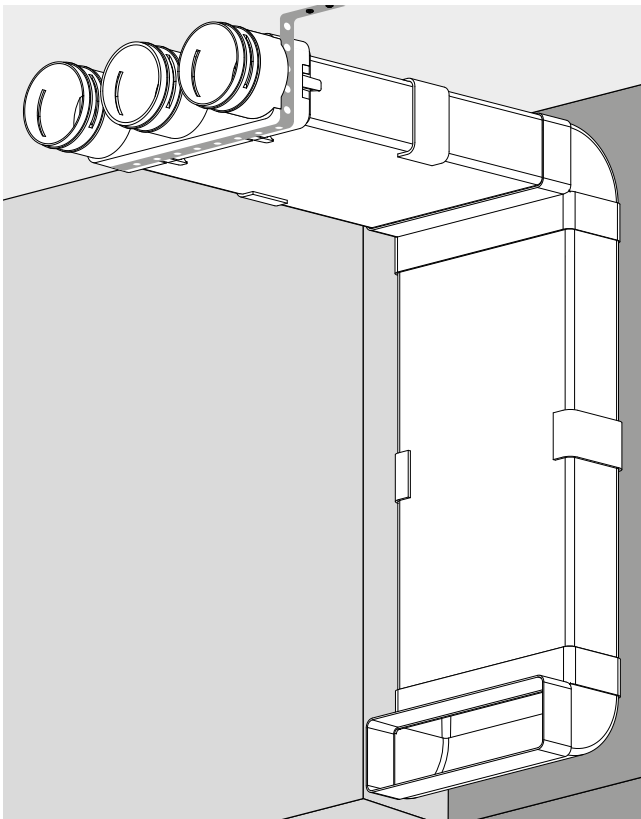
- 9** Mount ventilation grilles (not included in the delivery set) upon completion of the interior decoration works.



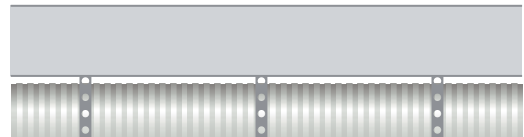
FLEXIVENT-PLASTIVENT ADAPTER SLEEVE

1 Connect the elements of the Plastivent system and secure them to the surface with the Plastivent fastener. Secure the Flexivent-Plastivent adapter sleeve to the ceiling with perforated mounting tape.

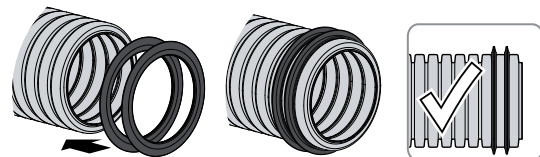
Joints between the elements should be insulated by an adhesive tape.



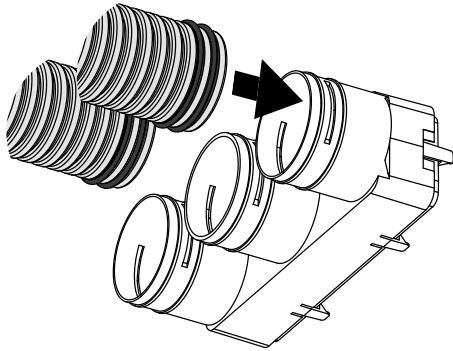
2 Lay the air ducts by securing them to the surface with mounting tape.



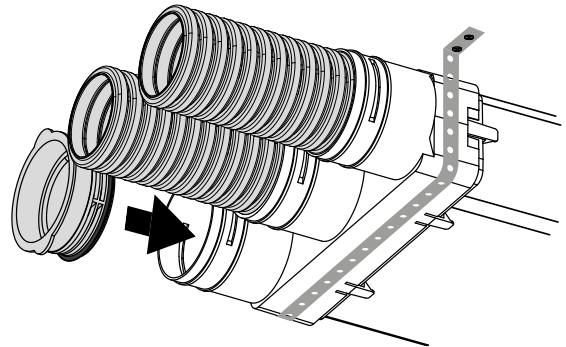
3 Place two seals on each duct end on the flange connection side.



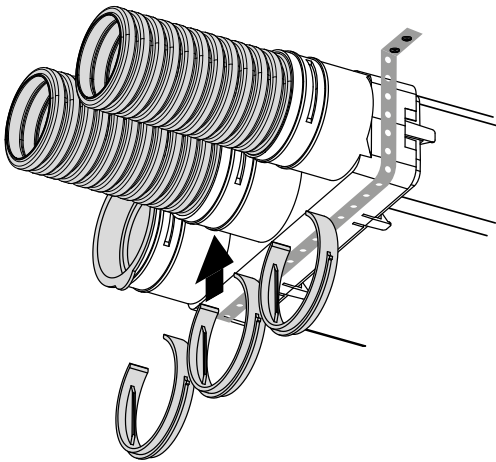
- 4** Insert the air ducts with the sealing rings into the flanges.



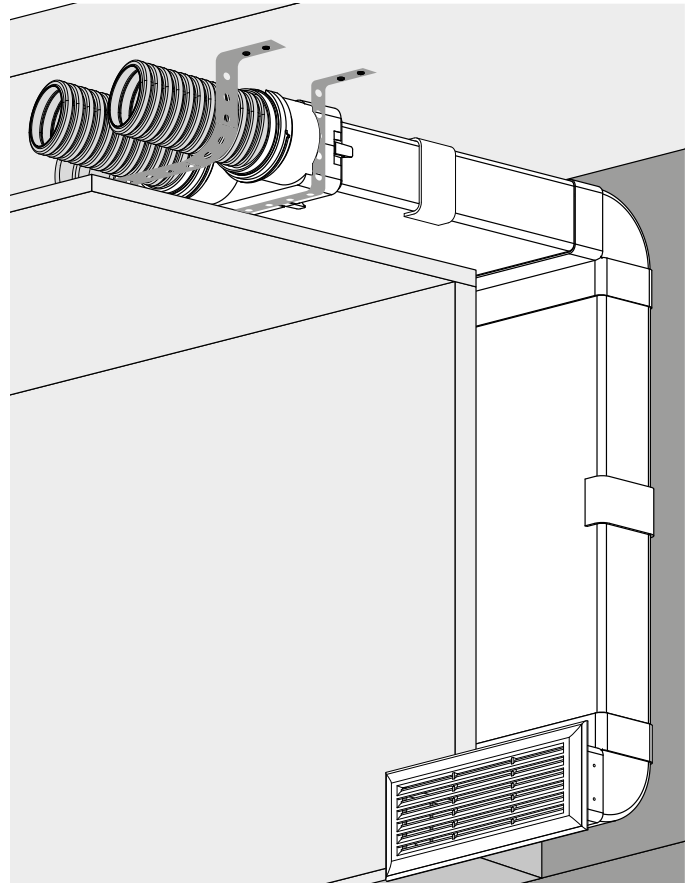
- 5** Cover the unused flanges with plugs (not included in the delivery set).



- 6** Secure the ducts and the plugs using the lock rings.



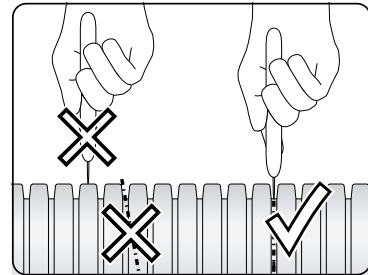
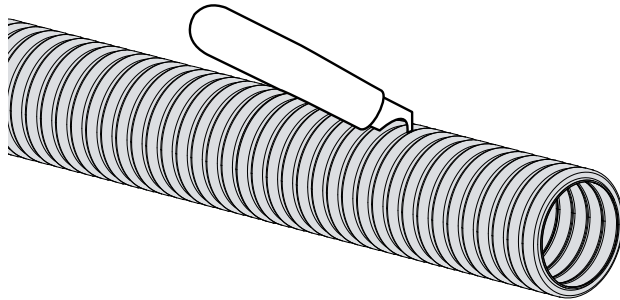
- 7** Mount the ventilation grille upon completion of the interior decoration works.



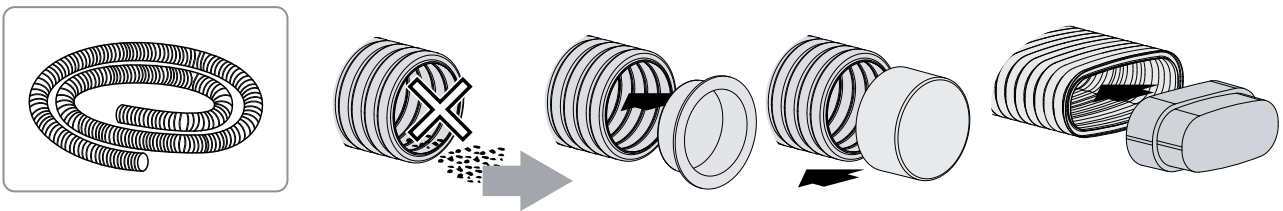
FLEXIVENT AIR DUCT



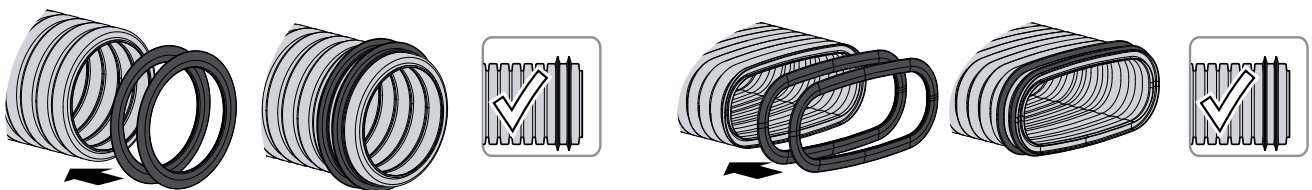
- 1** Cut the air duct to the required length.



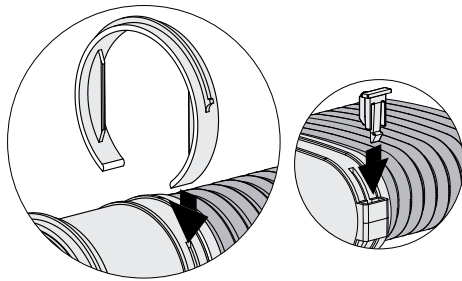
- 2** To prevent construction debris from entering the air ducts during installation, close them with plugs.



- 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.

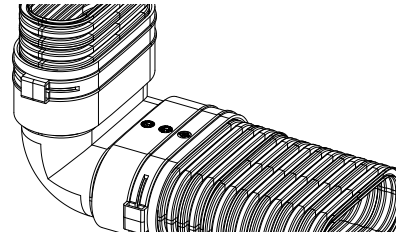


4 The air ducts are fixed in the fittings with a latch or universal locks on both sides. The bends are fixed to the mounting surface with screws.

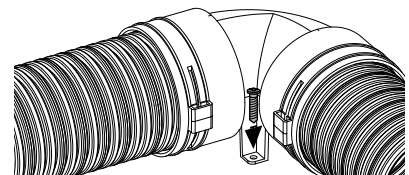
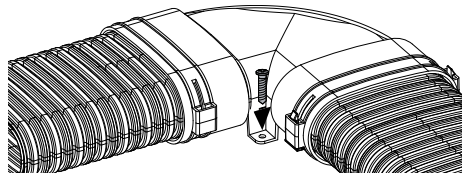


Horizontal oval bend

Vertical oval bend



Horizontal round bend



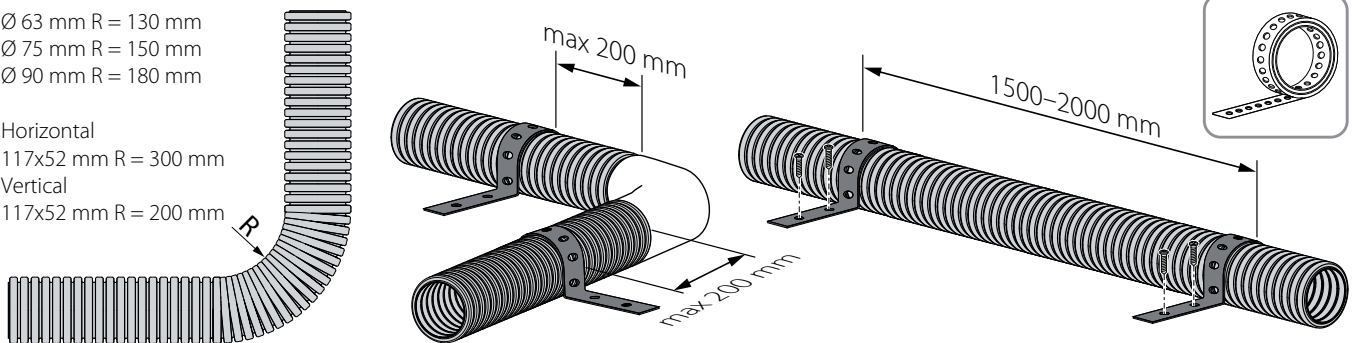
WARNING! If the ducts and the air distribution box are to be covered with concrete, make sure to provide extra sealing for the joint between the duct and the flange using a cold shrink tape.

5 Attach the air ducts to the mounting surface using a mounting perforated tape.

Minimum duct bending radius:

- Ø 63 mm R = 130 mm
- Ø 75 mm R = 150 mm
- Ø 90 mm R = 180 mm

- Horizontal 117x52 mm R = 300 mm
- Vertical 117x52 mm R = 200 mm



Note: additional technical information is given in the catalogue.

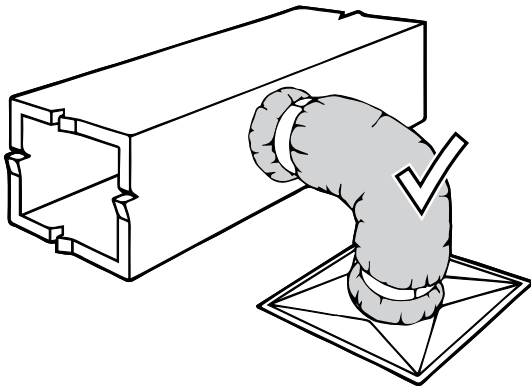
FLEXIBLE INSULATED AIR DUCT ISOVENT

General recommendations

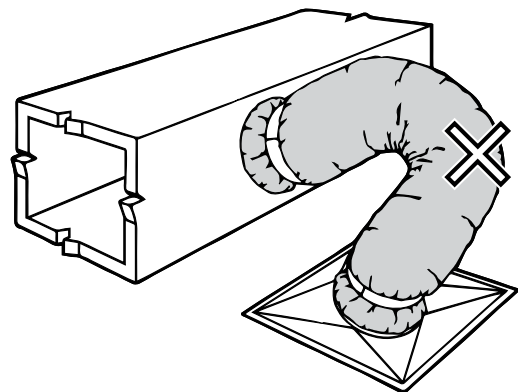
When installing flexible insulated ducts, it is necessary to take into account the route of laying, the number of bends, the angle of bends and the number of deflections between the fixing points, since these factors affect the resistance of the ducts. Use a minimum flexible air duct length for connection of ventilation elements. Excessive duct lengths are not recommended, 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 other ventilation elements must be attached to supporting structures separately from the insulated duct. If the external layer of the 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

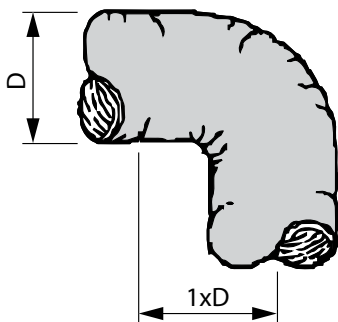
It is necessary to stretch an insulated air duct to the maximum before mounting.



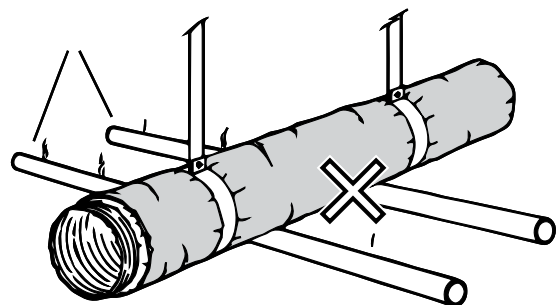
It is forbidden to mount the duct in a compressed state or with an excessive length, as this will significantly increase the aerodynamic resistance in the duct.



Avoid ducting around sharp corners or duct contact with metal fixtures or pipes. Air duct bend radius along the central line should be not less than one air duct diameter.



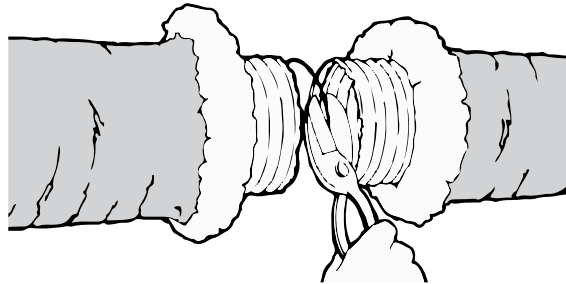
It is strictly forbidden to mount insulated air ducts near heat emitting appliances such as heaters or heat pipes, the temperature of which exceeds the recommended temperature for air ducts application.



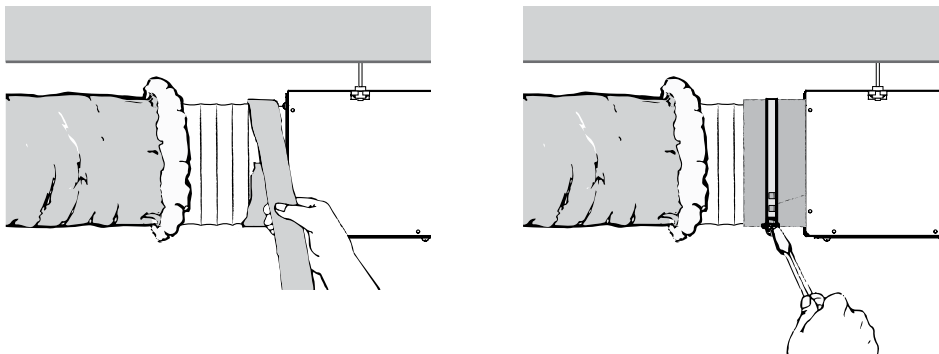
Joining of flexible insulated air ducts

The flexible insulated air duct must cover the flange of the 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.

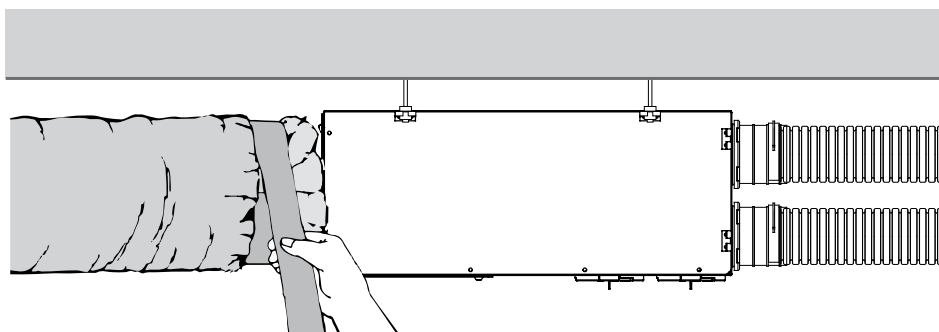
1. After the required length of the duct has been determined, it must be cut it with a knife or scissors. Cut the wire with pliers.



2. Stretch at least 25 mm of the inner layer over the spigot. Insulate the joint between the spigot and the inner duct layer with at least two layers of 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. Wrap the outer duct layer with at least two coils of adhesive tape. A clamp can be applied with an adhesive tape or separately.



COMMISSIONING OF THE VENTILATION SYSTEM

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

Purpose of commissioning and setting

- 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.
-

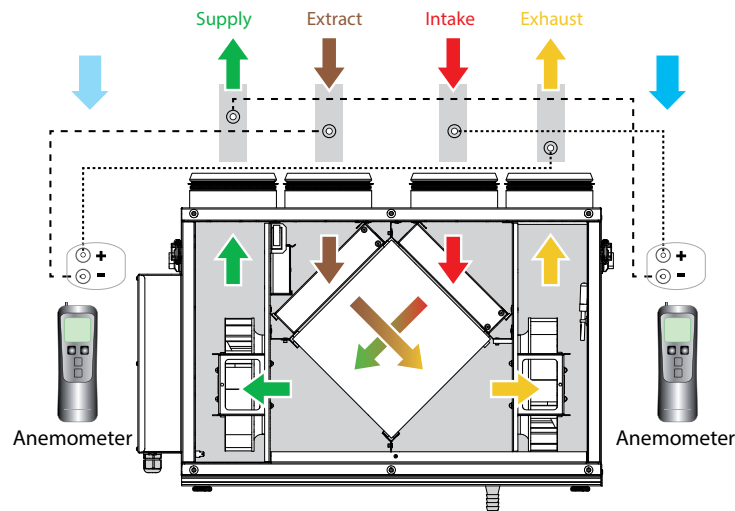
General check

- Only ventilation components made by Vents were used for installation.
- 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 (a ventilation unit, supply and exhaust ventilation elements).
- The unit was not in operation 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 exhaust fan and redo measuring.

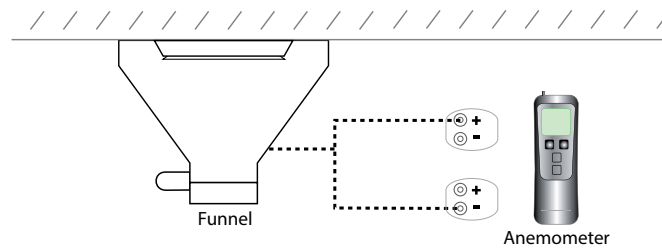
Connection of a differential pressure switch to air ducts for pressure difference measurement



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

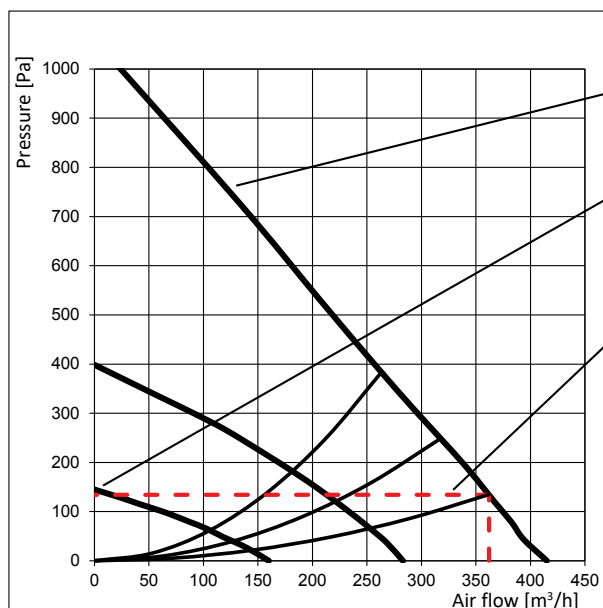
An anemometer with an appropriate funnel should be used for measuring of the air flow through a ventilation grille.

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



Reduce or increase air flow, if necessary.

For this, change the cross section of the 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.

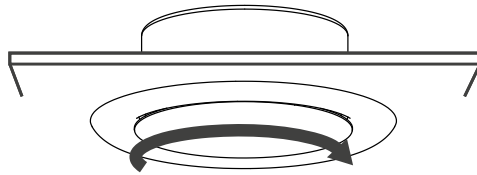
Draw the horizontal line corresponding to pressure difference measured by a differential pressure switch on the diagram.
Example: 134 Pa.

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 CONTROL

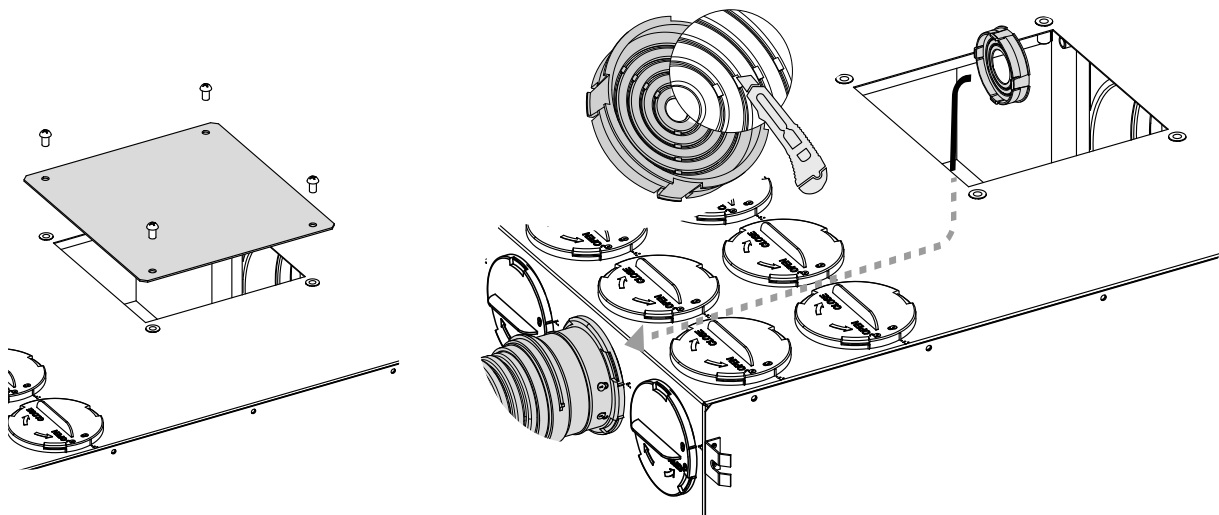
Air flow rate control with a disc valve

The air flow rate through the air disc valve is adjusted by rotating its central part.



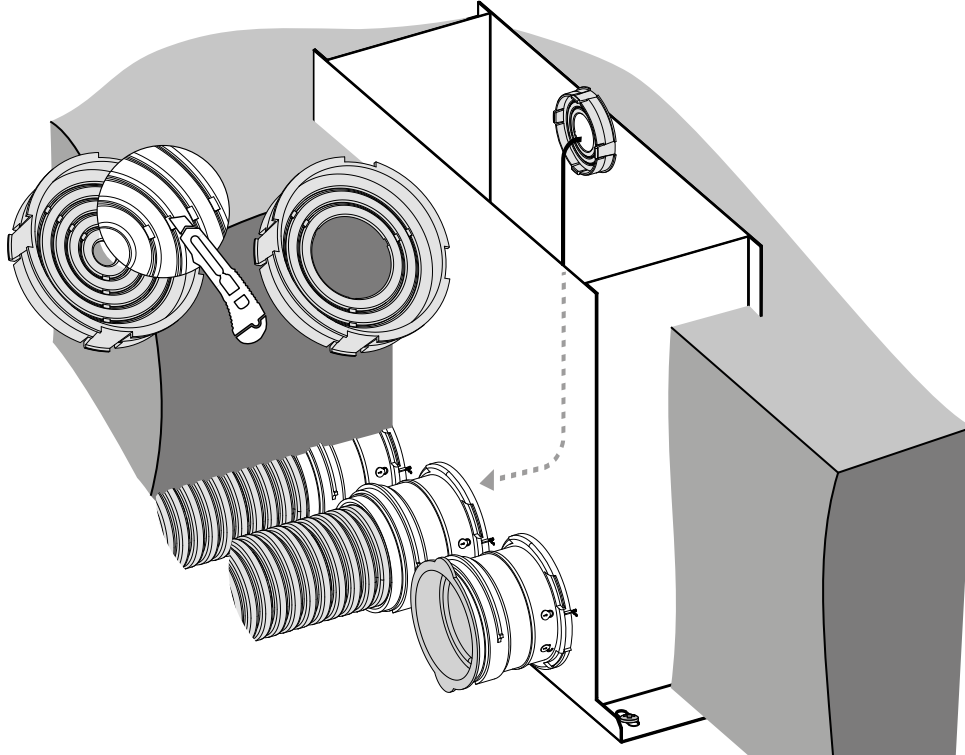
Air flow regulation by means of installing the air throttling damper into the air distribution box

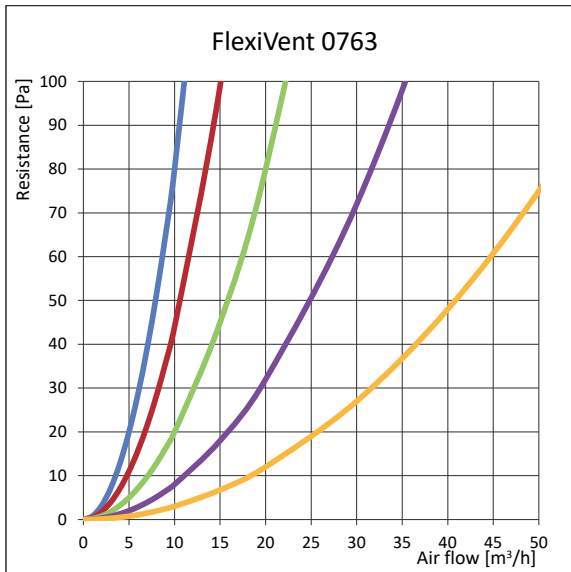
1. Cut the jumpers between the air throttling damper rings with a knife and remove the excess rings.
2. Remove the service panel of the air distribution box.
3. Install the air throttling damper into the flange from the inner side of the air distribution box.
4. Install the service panel of the air distribution box in its original position.



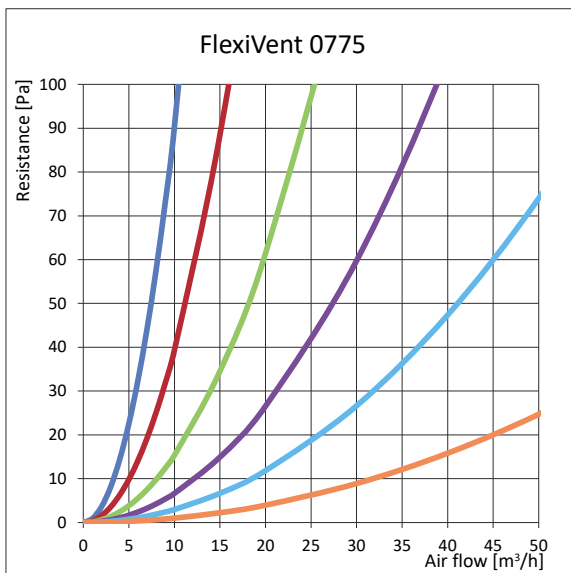
Air flow regulation by means of installing the air throttling damper into the connector

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

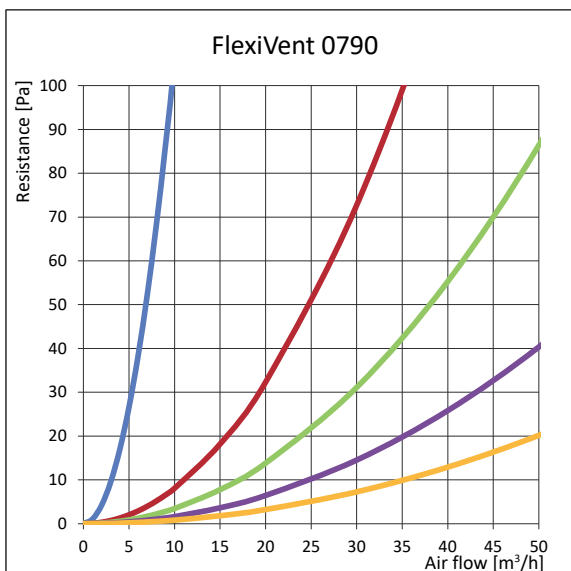




- All rings are in places
- rings removed - 1
- rings removed - 2
- rings removed - 3
- All rings are cut out



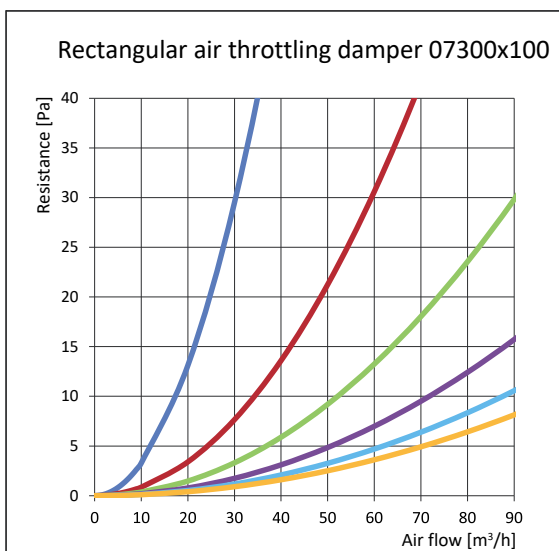
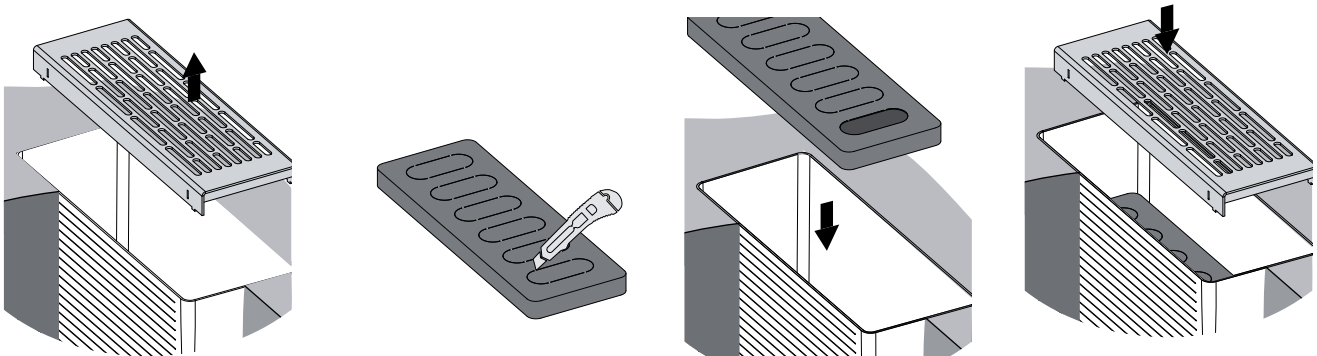
- All rings are in places
- rings removed - 1
- rings removed - 2
- rings removed - 3
- rings removed - 4
- All rings are cut out



- All rings are in places
- rings removed - 1
- rings removed - 2
- rings removed - 3
- All rings are cut out

Air flow control in the connector with a rectangular air throttling damper

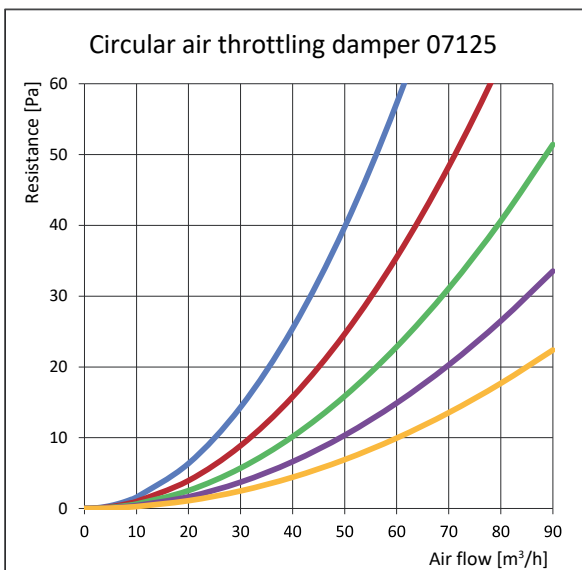
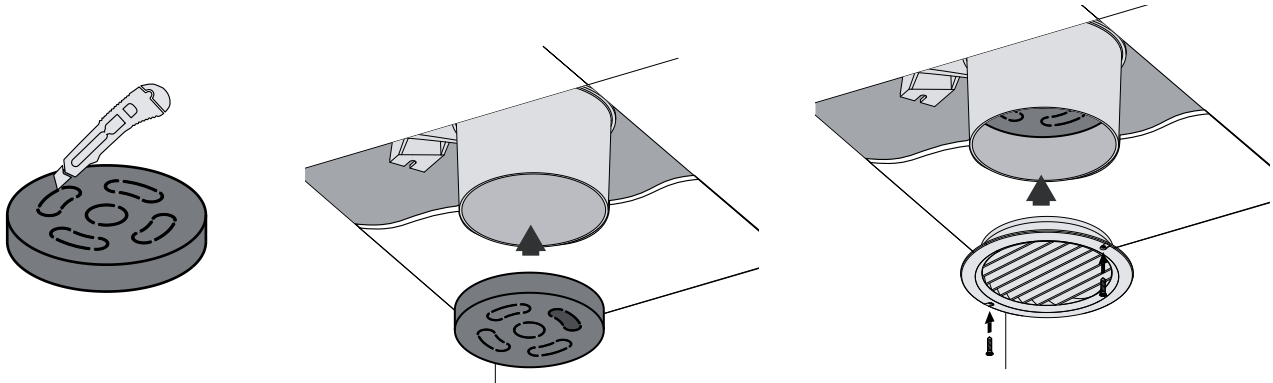
1. Remove the ventilation grille.
2. Remove the excess inserts in the air throttling damper by using a knife to cut the jumpers holding them in place.
3. Place the air throttling damper in the connector.
4. Install the ventilation grille.



- inserts removed - 1
- inserts removed - 2
- inserts removed - 3
- inserts removed - 4
- inserts removed - 5
- inserts removed - 6

Air flow control in the connector with a circular air throttling damper

1. Remove the grille from the connector.
2. Remove the excess inserts in the air throttling damper by using a knife to cut the jumpers holding them in place.
3. Place the air throttling damper into the spigot of the connector.
4. Install the ventilation grille back into the connector.

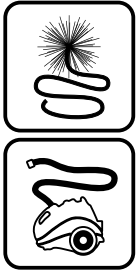


- inserts removed - 1
- inserts removed - 2
- inserts removed - 3
- inserts removed - 4
- inserts removed - 5

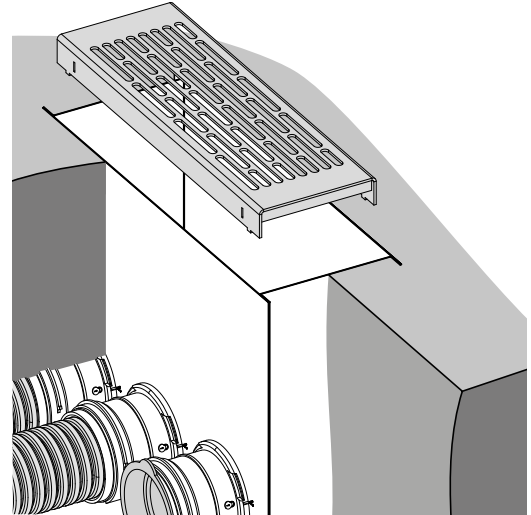
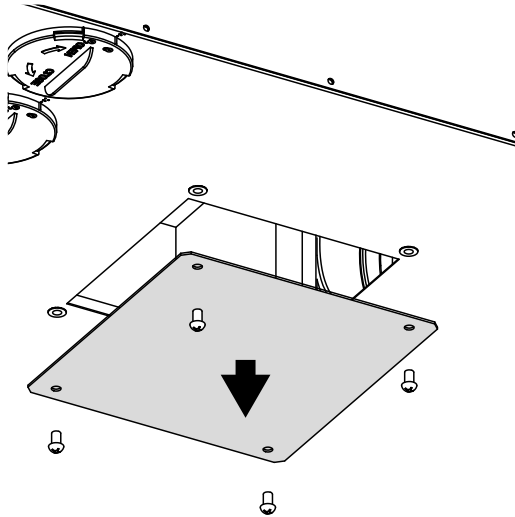
TECHNICAL MAINTENANCE

Maintenance includes general cleaning of system components to remove dirt and dust deposits.

1. Cleaning of the 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 surface 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.

