

Lindab **Building Integrated Duct System**

Installation instruction

Description

We are facing one of the toughest challenges in decades. New buildings and existing homes must minimize their use of energy. In less than 10 years all new built homes are supposed to use almost no energy at all according to EU directives.

This means the buildings must be better insulated and more air tight. It also means that existing homes must be upgraded. - but when speaking about low energy houses it is equally important to think about ventilation and a good indoor climate.

The Lindab group was established in 1959, and we are one of the world leading ventilation suppliers. We can offer you a strong and wide range of components and solutions for residential ventilation, they are all supported by our R&D and test centers, IT solutions and high skilled staff - so if you choose Lindab as your partner you will get access to Lindab's more than 50 years of experience and knowhow.

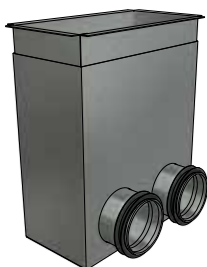
Lindab's building integrated duct system makes it easier for you to install ventilation in your building. The system meets the requirements for tightness class D.

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Products and applications

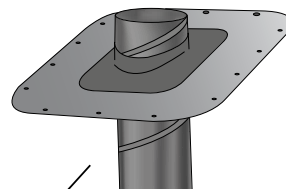
Floor boxes



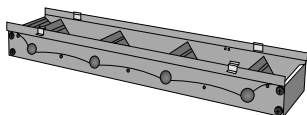
Roof hoods



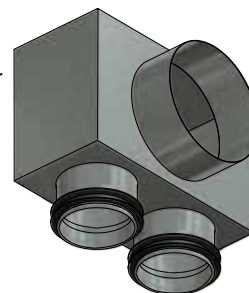
Roof transitions



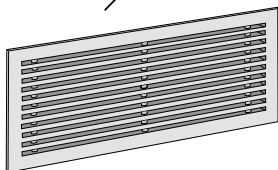
DGA damper



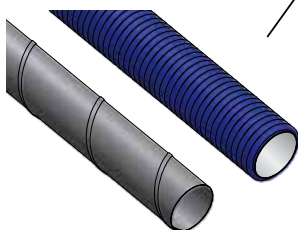
Wall and ceiling boxes



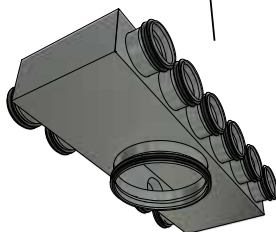
Grilles



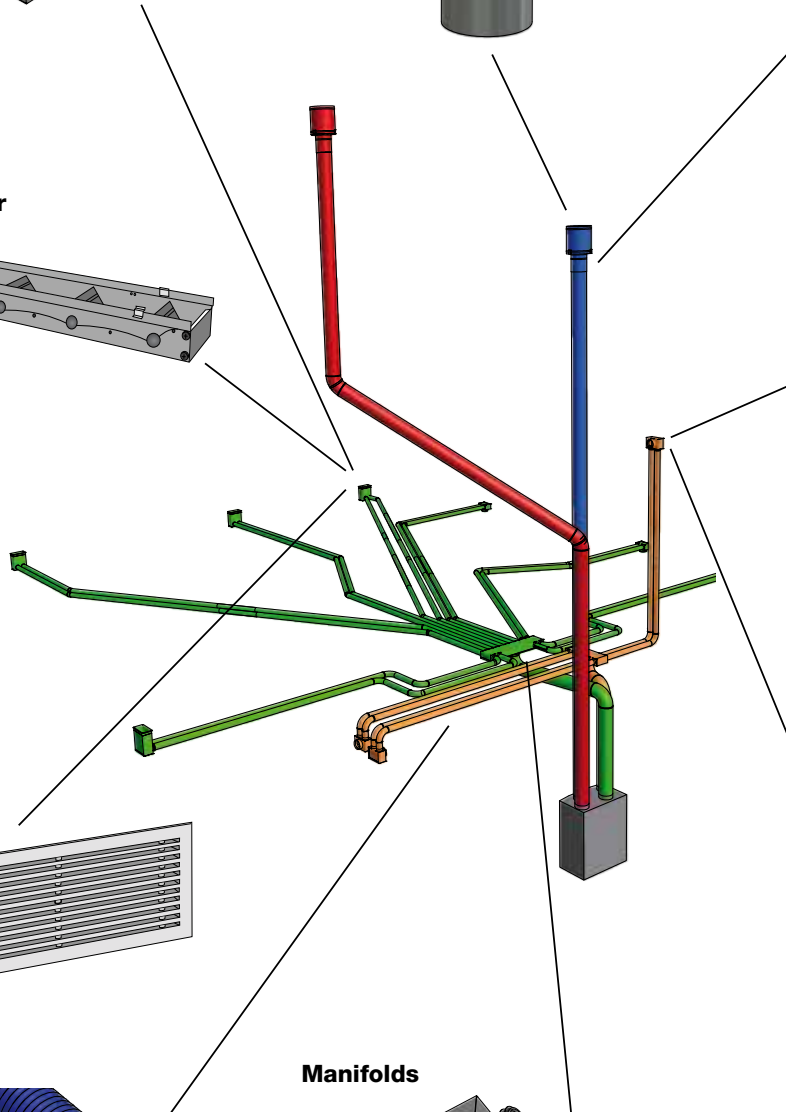
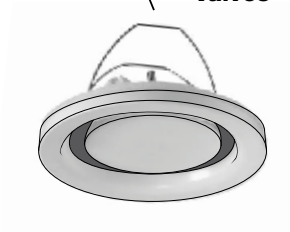
Ducts



Manifolds



Valves



Manifolds and ducts

The manifold should be placed in proximity of the air handling unit, unless the assembly drawing states otherwise.

The assembly drawing should only be considered as a suggestion, if the manifold in the assembly drawing is unsuitably positioned in consideration to other installations it should be repositioned so the installation is not hindered.

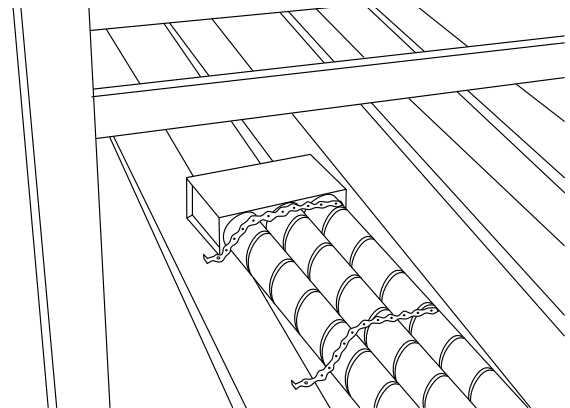
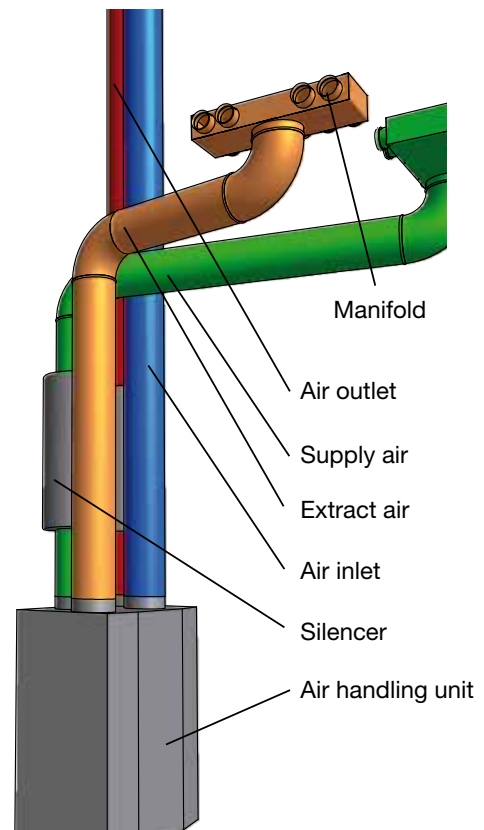
Sound-damping the system is important for general comfort and wellbeing. It reduces any noise that might otherwise be capable of spreading through the rest of the system and throughout the home.

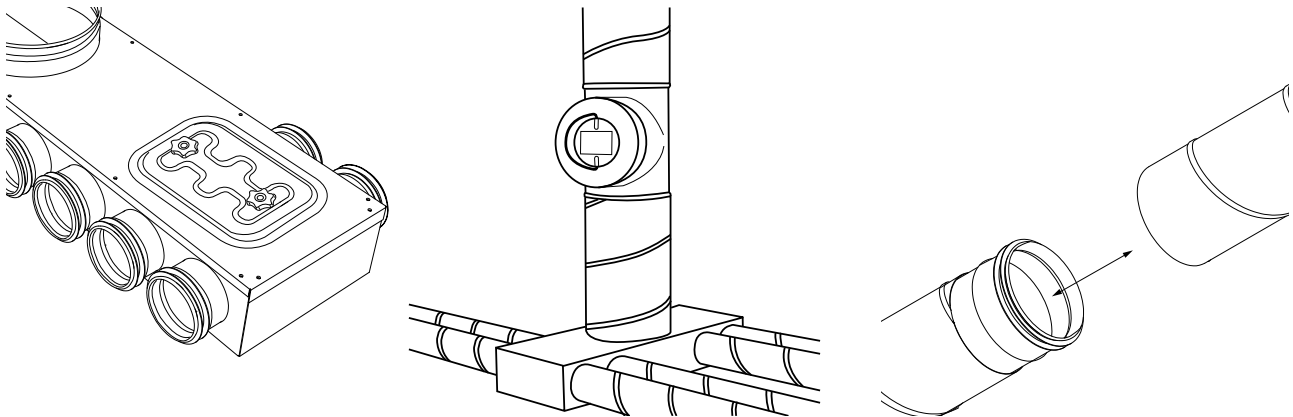
It is recommended that a silencer is inserted between the manifold and the air handling unit, both on supply and exhaust air. The silencer should have the same dimension as the connecting pipes on the air handling unit.

In some cases, it might also be advisable to mount silencer at the outlet and air inlet ends.

The manifold can be fastened with suspension bands. To prevent possible vibrations being transferred to the building, place a soft material between the suspension band and manifold.

Close all unused spigots on the manifold using end caps, EPF.



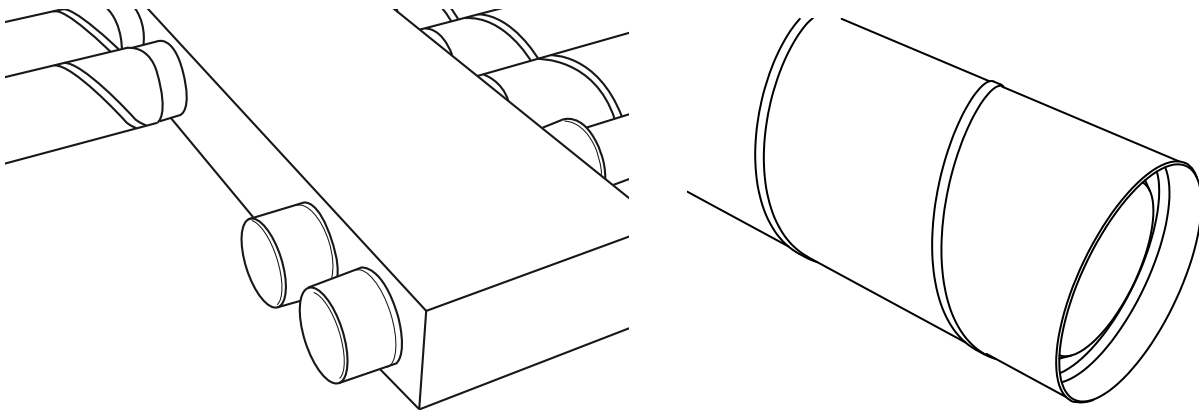


Cleaning and inspection

To be able to access the ventilation system for cleaning or inspection it is recommended to use either an inspection hatch, IPF, a slide in coupling, SNPU, or an access door, EFH, mounted on a T-piece.

When mounting the inspection hatch, IPF, cut a hole in the manifold where the inspection is to be performed.

Place the inspection hatch, IPF, over the hole and fasten with 4 self-tapping screws.



Mounting the duct

Floor mounting

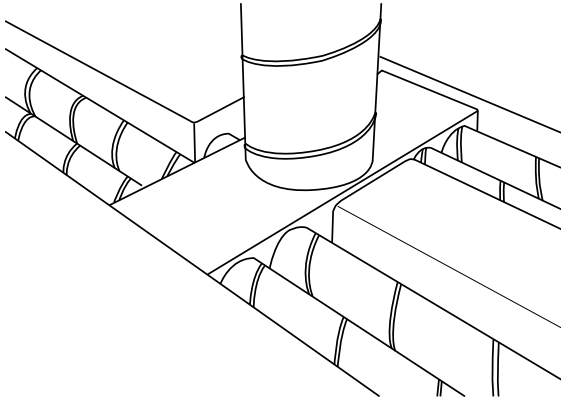
Cut a route for the ducts in the insulation material. The width of the route should be adjusted to ensure a secure installation of the duct. If it is not possible to fit the ducts into furrows in the insulation material, they can be fastened to the welded wire mesh.

The maximum distance between the fastening points is 70 cm.

To keep concrete, building dust or other material from soiling the ducts during mounting, close all unused spigots using end caps, EPF.

When all ducts are mounted, clean the manifold via the connecting duct, the inspection hatch or the access door.

If the system is not used immediately after installation, the ducts must be sealed to prevent the accumulation of moisture. The ducts can be sealed with a plastic plug, SKL.



Wall/ceiling mounting

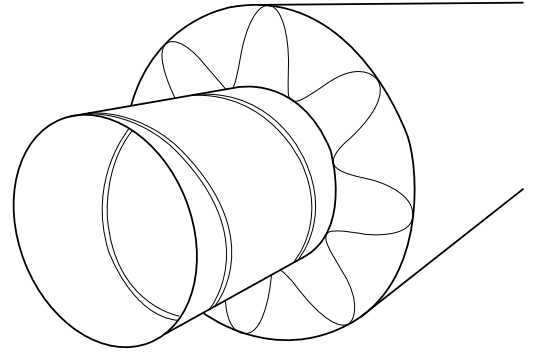
Wall mounting is recommended exclusively for inner wall to prevent thermal bridges and penetrations of the climate shield.

For ceiling mounting, it is recommended to mount the ducts inside a climate shield. If this is not possible, the climate shield/damp-proof membrane must be thoroughly sealed with weather-resistant tape or the specially developed membranes, MG or MGL.

For systems with geothermal surfaces, the supply duct must be insulated with at least 30 mm of insulation material due to the risk of external condensation on the ducts.

Metal suspension bands can be used to fasten the boxes.

When the ceiling is set up, the length of the screws must be adjusted so that they do not penetrate the ducts.

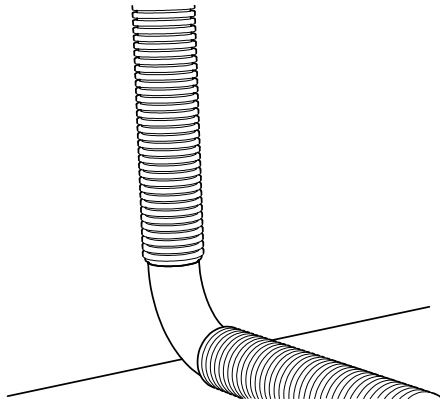


Insulation

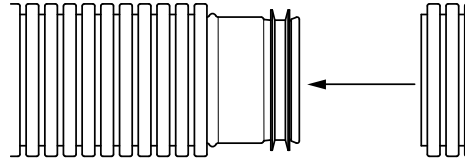
It is important that the entire system is thoroughly insulated to minimise heat loss and prevent condensation.

It is recommended to insulate ducts with at least 100 mm of insulation against cold surfaces.

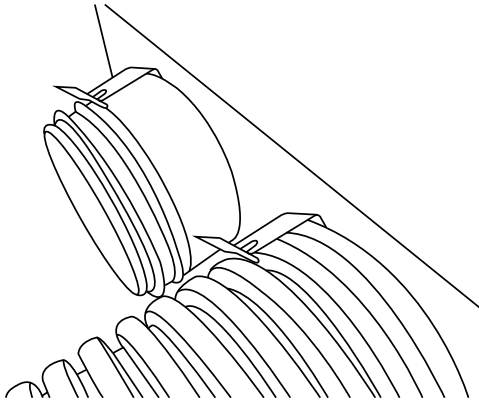
Semi flexible duct



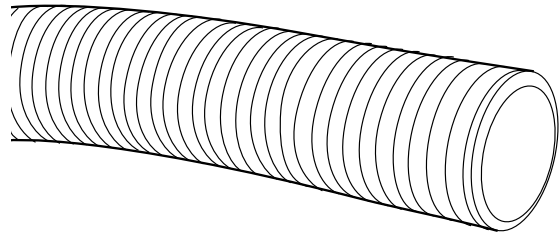
To the extent possible, avoid making sharp bends on the plastic duct, as this will increase the system pressure loss. To save space use Lindab's metal bends BU which fits inside the plastic duct.



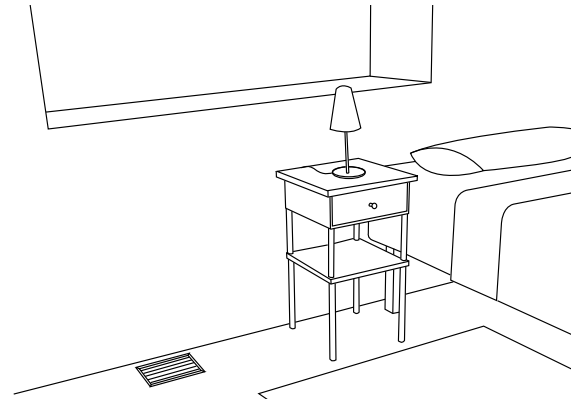
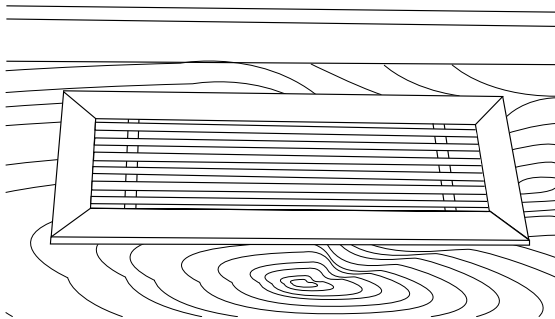
If it is necessary to extend or connect two pipe ends, this can be done using a connector NPU.



The plastic duct is fastened to the manifolds and boxes by a clip, Smart Lock, which is mounted on the manifolds and boxes. For the clip to fasten the plastic duct properly the duct must be cut in one of the grooves.



Supply air in the floor



Positioning

Supply air box and grill should ideally be positioned against the wall at the following locations:

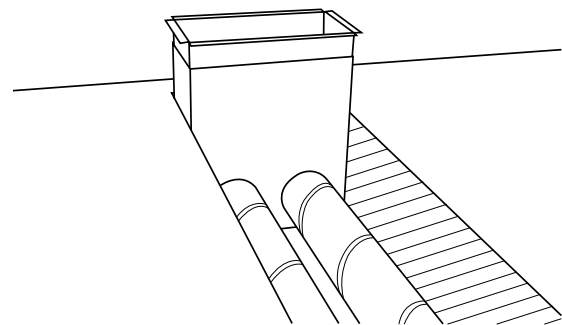
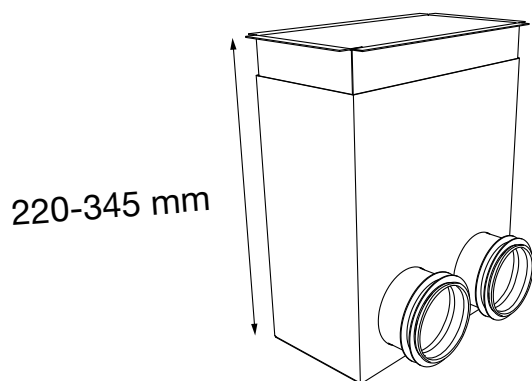
- beneath a window
- beneath a radiator

To the extent possible, avoid placing the grill in the following places:

- underneath furniture
- near places where people relax for longer periods of time

If an assembly drawing is enclosed, use it for guidance in positioning the box and grill.

Installing floor air extract is highly discouraged.



Mounting supply air box on the floor

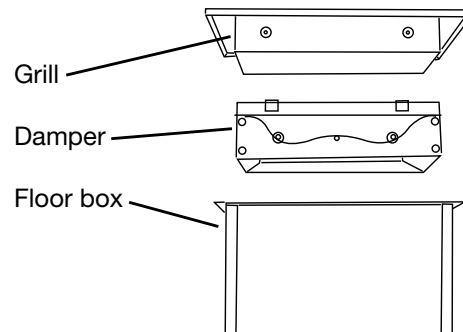
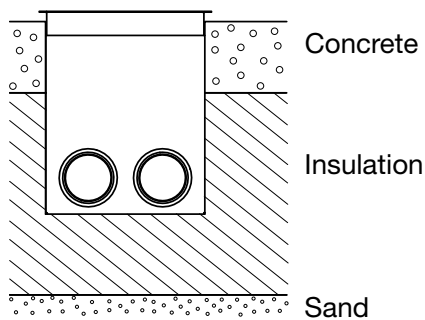
Place the supply air box in insulation material so that the distance to the top edge of the finished floor can be adjusted with the telescopic collar (collar can be extended by 125 mm).

Mount the duct on the box.

When the duct is in place, fasten it.

Close unused spigots on the box using end caps, EPF.

Exemple



Before casting

Install the duct from underneath the insulation material.

Before casting around the box, raise the telescoping collar to a level just above the finished floor height.

Tape the passage between the telescoping collar and the box itself to prevent dust and debris to contaminate the system.

Tape a piece of insulation material in the box's opening.

Finally, fill the area around the box with insulation material, and cast in place.

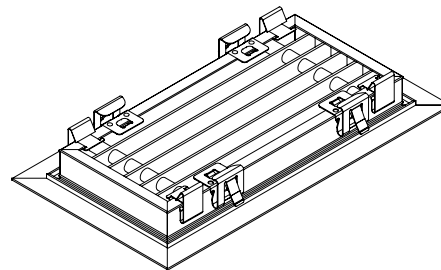
When the concrete is dry, the telescoping collar can be easily loosened and then lowered all the way down into the finished floor.

When the finished floor has been laid, pull out the box's adjustable insert and click the grill in place by using the 4 leaf springs.

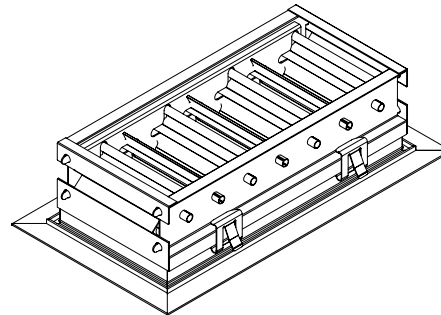
Place the grill in the insert and press the grill in place evenly on both sides.

If a damper is selected for the grill, mount it beneath the grill by using the pre-mounted clips.

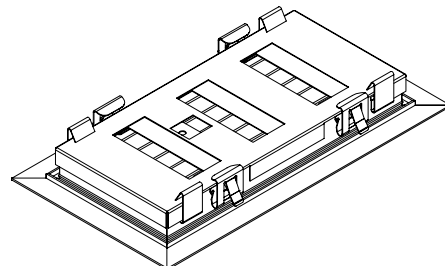
Positioning of clips for dampers::



Mounting of damper DGA:



Mounting of damper SKG:



Supply and extract air in the wall and ceiling

Positioning of valves on wall and in ceiling

The boxes and valves should be positioned in accordance with the room's function and design.

Supply air

The supply valve should preferably be positioned:

- near a fireplace/stove
- near a window
- above a radiator

To the extent possible, avoid placing supply valves directly over areas where people may be located for longer periods of time.

Extract air

The extract valve should be mounted in 'wet' rooms, e.g. the kitchen, bathroom and utility room.

If possible, the valve should be positioned where moisture develops, near showers, sinks, etc.

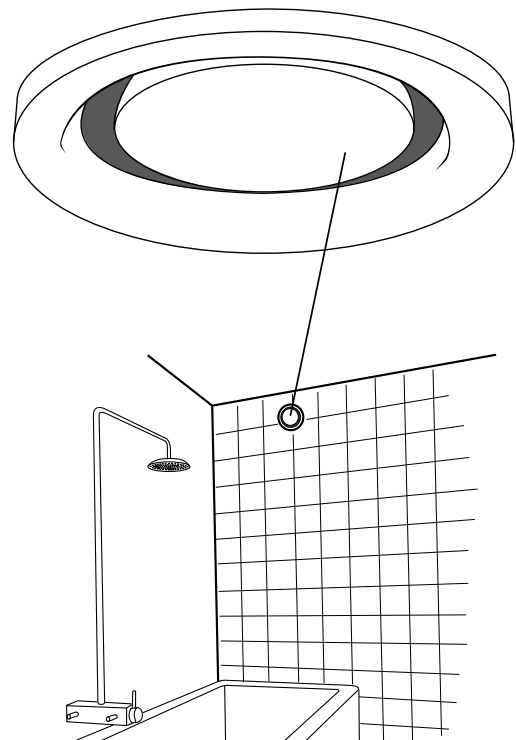
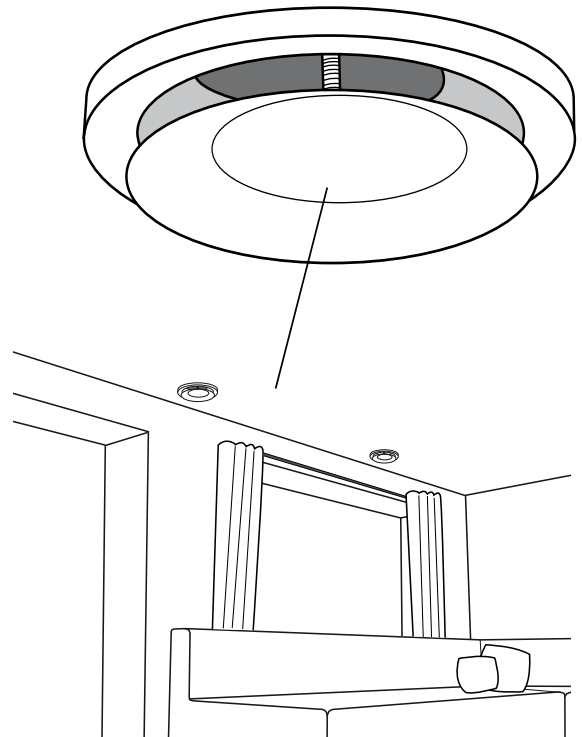
If an assembly drawing is enclosed, it should be used as a guide for positioning the box and valve.

Notice that there is a difference between supply and extract valves.

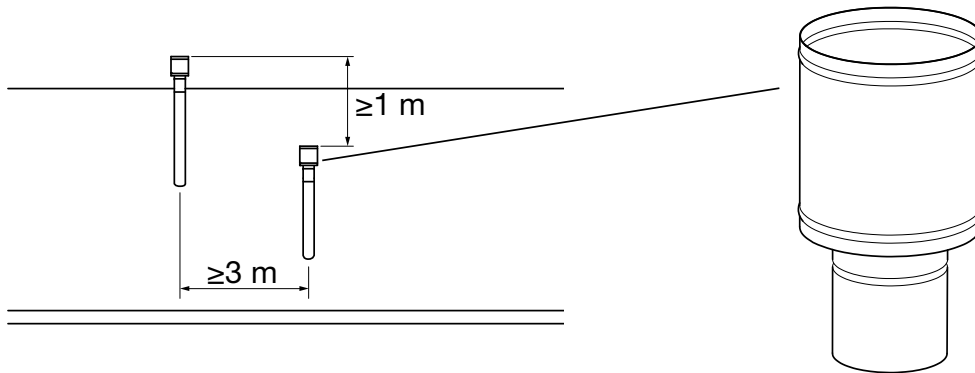
Mounting valves on wall and ceiling

Mount the plenum or manifold box so that the spigots to the valve are even with the finished wall or ceiling.

The valve can then be mounted in the box.



Roof hoods and wall grills



Roof terminals and wall grills are the visible part of the ventilation system from the outside.

It is recommend positioning the terminals at least 1 metre apart measured vertically or 3 metres apart measured horizontally, always with the outlet terminal at the top.

It is also recommend placing terminals and grills on a north-facing or east-facing surface for optimal comfort.

The outlet should be positioned:

- above the house's top window
- at least one metre from the closest window.



Good Thinking

At Lindab, good thinking is a philosophy that guides us in everything we do. We have made it our mission to create a healthy indoor climate – and to simplify the construction of sustainable buildings. We do that by designing innovative products and solutions that are easy to use, as well as offering efficient availability and logistics. We are also working on ways to reduce our impact on our environment and climate. We do that by developing methods to produce our solutions using a minimum of energy and natural resources, and by reducing negative effects on the environment. We use steel in our products. It's one of few materials that can be recycled an infinite number of times without losing any of its properties. That means less carbon emissions in nature and less energy wasted.

We simplify construction