

Lindab **Smoke control system**

– single compartment – Rectangular

Mounting instruction

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Introduction

This mounting instruction refers to a rectangular smoke control system for single compartment. Tested in two hours at a temperature of 600°C at a positive pressure of +500 Pa and negative pressure of -1500 Pa in horizontal and vertical position up to 2500x2500 mm according to the following standards:

Classification:	EN 13501-4	Fire classification of construction products and building elements. Classification using data from fire resistance tests on components of smoke control systems.
Test Method:	EN 1366-9	Fire resistance tests for service installations Single compartment smoke extraction ducts.
Requirements:	EN 12101-7	Smoke and heat control systems. Smoke duct sections.

$\leq 1250 \times 1000$	$E_{600} 120 (h_o) S 1500$ single	CE-certified
$\leq 1250 \times 1000$ $\geq 1250 \times 1000 - 2500 \times 2500$	$E_{600} 120 (v_e) S 1500$ single $E_{600} 120 (h_o - v_e) S 1500$ single	Assessment: APF 2075 Assessment: PHA12178A

Intended use

The system is a part of a smoke and fire protect system and is designed to reach the following targets:

- Extract smoke for 2 hours during the fire.
- Reduce temperatures during the fire.
- Create an non-smoke layer.
- Protect the property.

This system represents a part of the smoke and fire protection project and must be designed by a fire expert.

Transport and delivery

The delivery contains smoke control duct system marked by a CE label on the outside of duct and fittings.

The transport is performed by common transport means. Components that are free loaded should be secured in such a way that any deformation and damage to the components will be eliminated. The transport vehicle must be covered to prevent dust, debris and humidity from damaging the components.

A buyer or their representative is obliged in terms of good acceptance to on site check the delivery according to the delivery documentation. Visible defects and amount shortages are to be noticed in the transporter's transport sheet immediately.

Storage

The goods should be stored inside and protected to prevent dust, debris and humidity from damaging the goods.

Operation

Before starting the system it is necessary to check the system for damages and that it is consistent to the fire expert design.

The system can be used only in compliance with determined conditions (pressure, temperature etc.).

Applied Documents

This system has been certified together with hangers, flanges, sealing material, silencers, grilles and compensators. All the components should be used in the same way as during the tests. No substitution of any components of the system is possible.

Revision and Maintenance

Following features shall be checked up during a revision of the system at least once a year:

- All parts of the system have been installed according to this mounting instruction.
- System components must not be damaged in any way; duct work cross-section must not be reduced in any way.
- All connections and flanges are tightened and properly connected.
- The system weight is to be evenly distributed over the hangers and not exceeding the maximum weight load for the specific hanger.
- If thermal expansion compensating devices are used, these compensating devices shall be prepared for utmost absorption of eventually system dilatation at their extreme positions.
- There must not be any flammable bodies on the duct work surface and 50 mm away from the system itself.

Before mounting

Before starting the mounting of the system it is necessary to inspect all components to make sure that they are correct according to the project documentation and to make sure they have not been damaged during transport or storage. When handling the products on site it is important to be careful so that they don't get damaged and their properties change.

Mounting of the system should only be done by trained professionals equipped with the correct protective equipment and tools. The mounting of the system should always be performed according to valid documentation from the manufacturer.

The system should never be used as a supporting part of the building.

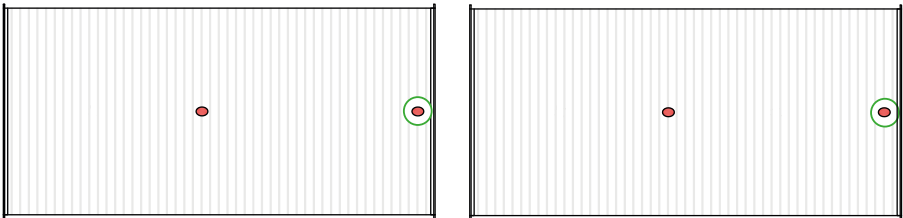
In order to achieve a good result, ensure you have:

- A well-organised and protected storage site for ducts and other parts that are to be assembled.
- A properly planned assembly sequence in accordance with the instructions.

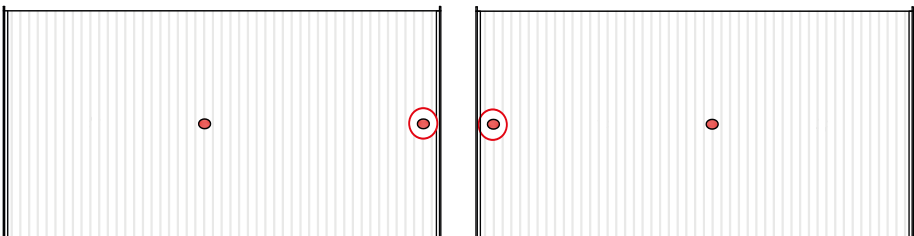
Mounting

Duct and fittings that have inner reinforcement close to the connection profile, needs to be mounted in a correct direction.

Correct direction



Wrong direction

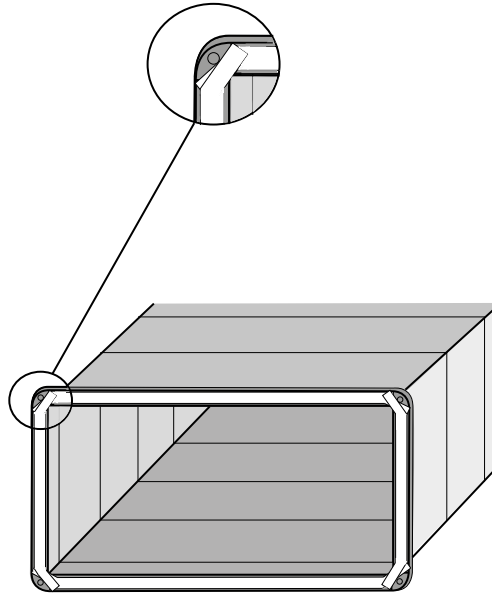


Airtighten between products

Alternative 1 : Applying ceramic gasket

Fit the ceramic gasket (QFPDB 25x3) to the outer edge of the connection profile. The gaskets must overlap one another.

The gasket must only be fitted to one of the two surfaces to be joined.



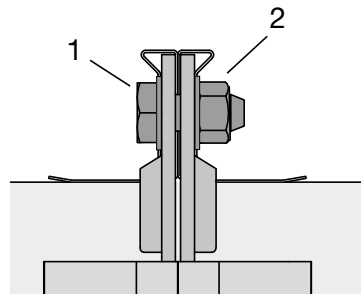
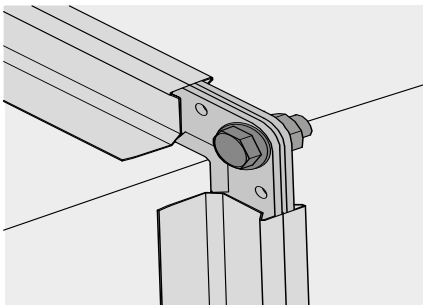
Alternative 2 : Using mastic

Apply the fire resistant mastic Soudal Firecryl FR or Nullifire FS 702 on the entire perimeter of the connecting flange. The surface should be clean, dry, free of dust and grease. Slightly moistening of the surface will increase adhesive strength.

The mastic must only be applied to one of the two surfaces to be joined.

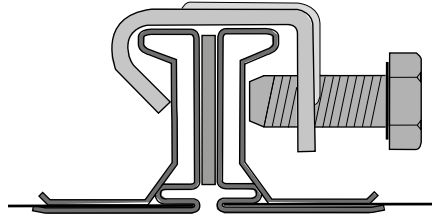
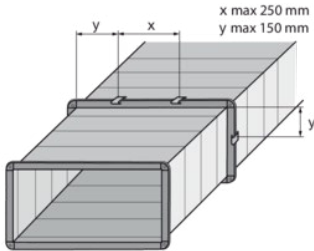
Mount the ducts

Carefully press the ends together and fix the corners with bolts (1. M6SF), minimum M8x25 mm and nuts (2. M6MF).



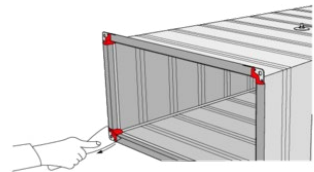
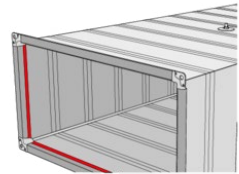
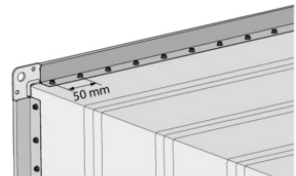
Mount clamp

Mount rectangular joint bolt clamps (RJBC) over the flanges. The maximum distance is 250 mm between the clamps and 150 mm between the corner and the first clamp.

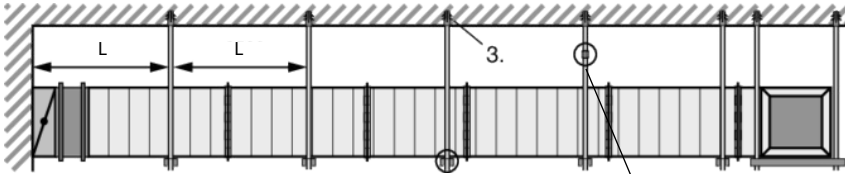


Modify the length of the duct on site

- Cut the duct to the required length.
- Install four flange profiles RJFP30 (without mastic) and four corners RJLC30.
- Fix the flange profiles with screws (U41 4,2×9,5 or U42 4,2×13). Distance between screws is maximum 50 mm.
- Apply the fire resistant mastic Soudal Firecryl FR or Nullifire FS 702 on the entire perimeter of the connecting flange and on the corners.



Horizontal suspension



The system must be supported with recommended suspension material according to construction conditions and a particular system weight.
The threaded rods (2. OSB 60), must be attached to the ceiling with mounting material that is adapted to withstand the weight and fire conditions.

Distance between two threaded rods is maximum:

If the largest duct side is ≤ 1250 mm	2,0 m
If the largest duct side is $> 1250 - 2500$ mm	2,5 m

Note! There should always be at least one suspension point per duct section.

See tables on page 10-11 for distance between suspensions (L) on different duct dimensions.

The maximum stress on a suspension for this system is 12 N/mm^2 , this means that the maximum load on a single threaded rod is:

- OSB 60 M8: 45 kg
- OSB 60 M10: 71 kg
- OSB 60 M12: 103 kg

Two shorter threaded rods can be joined with a long nut, OSM (6.), secured with two nuts.

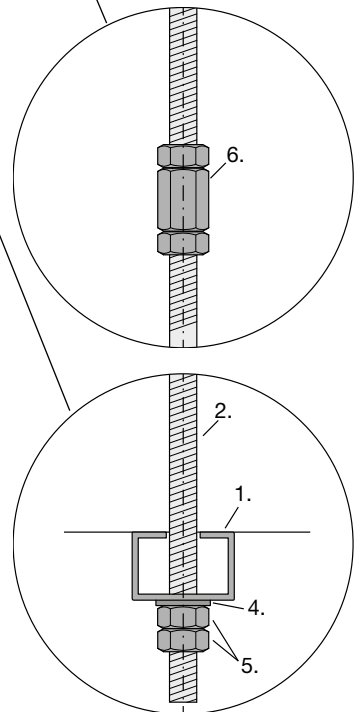
Brackets and fasteners for the support of:
Duct up to 1250×1000 mm:

- Bracket RPC (1.) $21 \times 41 \times 1,6$ mm
- Washer (4. BRB)
- At least one nut (5. M6M)

Duct larger than 1250×1000 mm and up to 2500×2500 mm:

- Bracket RPC (1.)
- Washer (4. BRB)
- At least one nut (5. M6M)

It is permitted to use stronger threaded rods and/or brackets on a smaller duct.



Rectangular

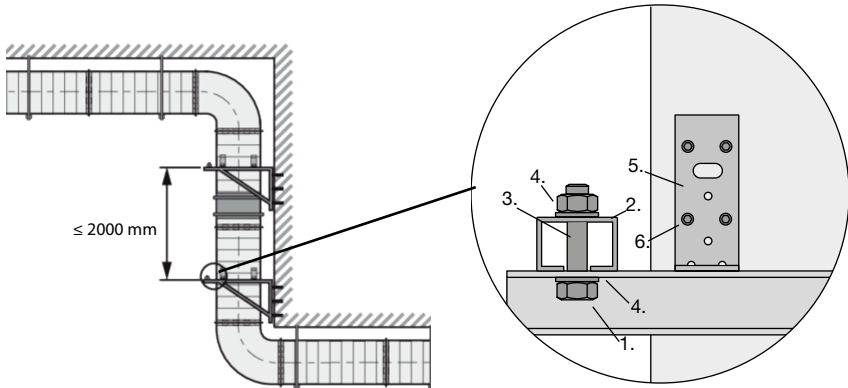
Suspension distance horizontal installation for duct lengths up to 2500 mm

Dimension [mm]	b																										
	150	200	300	400	500	600	700	800	900	1000	1100	1200	1250	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	
150	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
200	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
300	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
400	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
500	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
600	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
700	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
800	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
900	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1000	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1100	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1200	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1250	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1300	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1400	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1500	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1600	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1700	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1800	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
1900	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2000	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2100	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2200	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2300	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4
2400	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4
2500	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4

Note: changes of a×b to b×a are possible.
 - These dimensions are not available in this length

- Threaded rods OSB 60 M8
- Threaded rods OSB 60 M10
- Threaded rods OSB 60 M12

Vertical suspension for system up to 1250x1000 mm

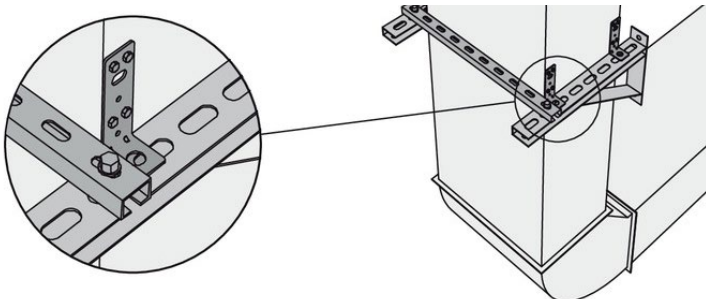


The system must be suspended with recommended hinge material according to construction conditions and a particular system weight.

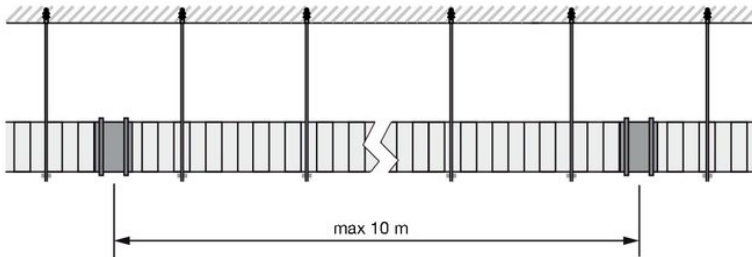
The distance between two anchoring points in the wall should not exceed 2000 mm.

Each anchoring point should consist of:

- Two wall brackets (1.), CLS. One channel (2.), RPC 41×21×1,6.
- Two bolts (3. M6S or M6SF), minimum M8×35, and four washers (4. BRB).
- Four suspension brackets (5.), WCLGM without rubber, each with four self drilling screws (6. U42 4,2×13 or U63K 4,8×16) attached to the duct.



Compensator (recommended)

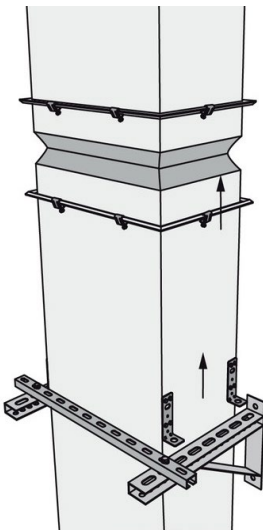


For dimensions up to 1250×1000 mm the system can be used both with and without compensator. Dimensions larger than 1250×1000 and up to 2500×2500 mm do not need compensator.

It is not recommended that the distance between two compensators exceeds 10 m.

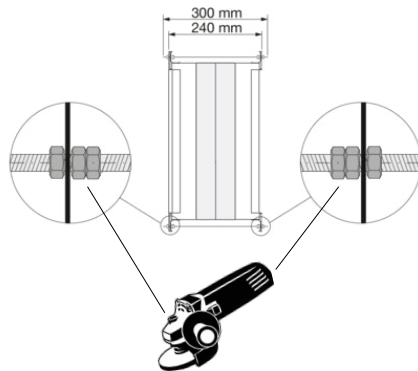
When the compensator is mounted it should be fully elongated. The two ducts between which the compensator is mounted must be aligned as axial misalignment will prevent or obstruct the elongation of the system.

Replacing individual components of the compensator is not possible. Compensators can only be replaced as a whole.



Transporting seal

For a quicker installation, compensator is held up by threaded rod M8 and nuts M8, for each side.



When compensator is installed, remove the threaded rods with a grinder or an appropriate tool for cutting in order to free the compensator movement.

Accessories

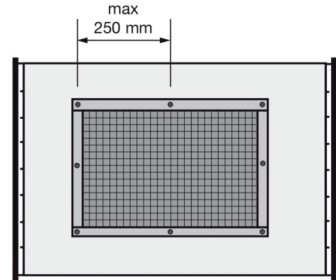
Accessories are tested with the whole system according to EN-1366-9.

Grilles

When mounting a grille the reinforcements should not be moved or removed.

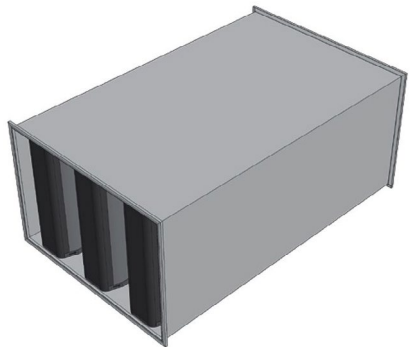
GRS

The grille GRS can be used and should be fastened with self tapping screws (U42 4,2×13 oc U63K 4,8×16) at a maximum distance of 250 mm.



Silencer

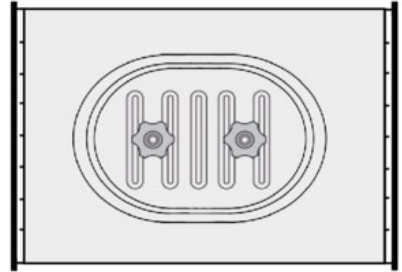
Rectangular straight silencer type SLRSS2 can be used with the system.



Inspection opening

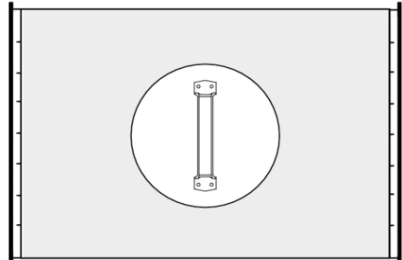
IPLSS

Access door, which fits on the flat side of a rectangular duct.



KCU

Insulated access door used together with ILUSS



Threaded insert for inspection

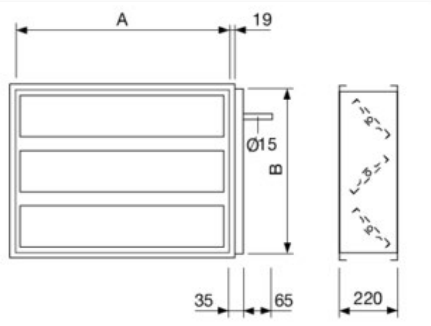
Steel blind rivet nuts used as inspection access for micro-cameras and cleaning tools.



Regulating damper

EKO-JSS

Regulating damper can be used in reversible system.



Conformity assessment by installer

This document is a conforming assessment, signed by the installer and submitted to the document supplier. The signature confirms receipt and adherence to the installation manual

Company name	
Phone	
Email	
Project	
Date	

I hereby confirm that I received the installation manual from supplier and followed it gradually.

Date

Signature





Most of us spend the majority of our time indoors. Indoor climate is crucial to how we feel, how productive we are and if we stay healthy.

We at Lindab have therefore made it our most important objective to contribute to an indoor climate that improves people's lives. We do this by developing energy-efficient ventilation solutions and durable building products. We also aim to contribute to a better climate for our planet by working in a way that is sustainable for both people and the environment.

[Lindab | For a better climate](#)