

# Lindab **Plexus**

Active chilled beam  
Installation instructions



# Installation instruction

# Plexus

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# Installation instruction

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## 1.2 Symbols



Hot water



Heavy Load - 2 man job -  
It is recommended to use  
a "lift" for mounting.



Cold water



Hand-pull

## 2. Control of delivery

### 2.1 Before starting

Read through the entire installation instruction before commencing installation in order to determine which parts that needs to be performed and in what order to be done.

Lindab is a supplier of complete water products, but we offer also a wide range of accessories which suit perfectly to our water products simplifying your installation work, e.g. different type of hangers, Tektite-couplings, closing valves, thermostatic valves and actuators, flexible hoses, customized regulation components, customized cabling and more. See also the separate document "[Accessories](#)".

Lindab will also provide you with a full ventilation system, with a wide range of Lindab Safe components. See also "Air Duct Systems".

### 2.2 Safe operation

Beware of sharp edges, especially of the coils. Always wear thin gloves and protective clothing.

All existing safety regulations must be observed when working with Lindab water products. Check the weights of the beams or the panels with the installation instruction before carrying.

### 2.3 Receipt of goods

Start by checking that the delivery is complete according to the order and that everything listed on the consignment note has been delivered. Then carry out a review of the products and make sure that nothing was damaged during transportation. If you discover damage that has occurred during delivery, it must be notified immediately.

Lindab is not responsible for costs associated with the replacement of products that have been installed in any way other than shown in these installation instructions.

### 2.4 Unloading of goods

The beams and panels are normally delivered packed on wooden pallets. Lift the pallets carefully with a fork lift and place them on a dry and plain surface/ground. If the beams are delivered in single boxes, wooden blocks should be placed on the ground at one-metre intervals (or a pallet), before the boxes are been placed to store. Lindabs water products must be stored on a plane surface in a dry and well ventilated place, preferably indoors. If they have to be stored outdoors, protect them with a waterproof cover and store them protected from rain beneath a roof or other until they are fitted.

### 2.5 Handling / Carrying

The beam or panel must be handled with care, ensuring that it will not be scratched or bended during transportation, preparation and installation.

Always carry the beams or panels piecewise into the building. Keep the product in the package as long as you can.



Never use piping connections or edges to lift them, neither when you unpack them nor when you carry them towards the construction site.

Do not place the product directly on the floor. Use the protective corners from package or other clean means from package to place the product before installation.

Be careful if you must carry a long panel horizontally; if the panels are bended lengthwise, the profiles may be deformed and the piping could be loosen from the panel. When opening the box with a knife, be careful not to damage the product.

Each beam is equipped with protective film to avoid any damage during transportation and handling on building site. The film needs to be removed before commissioning the products.

# Installation instruction

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## 2.6 Tools

To install the beam, panel or facade unit, the following tools are required.



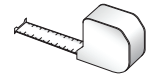
Knife



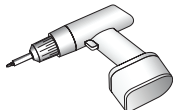
Gloves



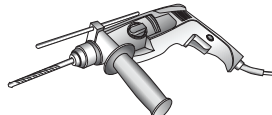
Shoes with soft soles



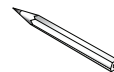
Tape measure



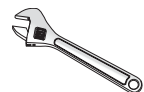
Drill machine



Percussion drill



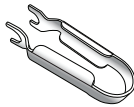
Pencil



Spanner



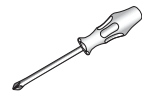
Crowbar



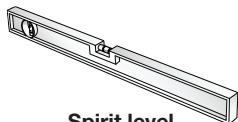
Tectite tool 12mm  
(Order no: 884087)



Tectite tool small 12mm  
(Order no: 646881)



Screwdriver



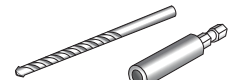
Spirit level



Lindab PC410  
(Order no: 103344)



Deburring tool



Bits and drills



Vacuum cleaner



Dust-cleaner

## 2.7 Installation

It is important to use the correct hangers and the recommended amount for all installation principles. Different possible installation principles are shown in the installation instruction and hangers from Lindab should be used to ensure, that they are intended for the purpose and are safe to use.

Lindab's water products can be ordered, to be adapted to a wide range of different ceiling systems, please check installation instruction to ensure best adaptation.

The Lindab water products should always be installed separately hanged up from the recessed ceiling. The weight of the product should not be covered by the ceiling system.

Use plastic folio or other to protect the product during on site construction continually to keep the products in best condition and avoid any scratches.

## 2.8 Where to find additional instructions or technical documentation

In the following chapters we will refer to additional technical documents or/and instructions by a certain keyword written as a link.

You can also find relevant related documents with our Lindab Quick selection tool:

1. Visit [www.lindQST.com](http://www.lindQST.com)
2. Select "documentation finder"
3. [Select product](#)
4. Find relevant document under "Related documents"

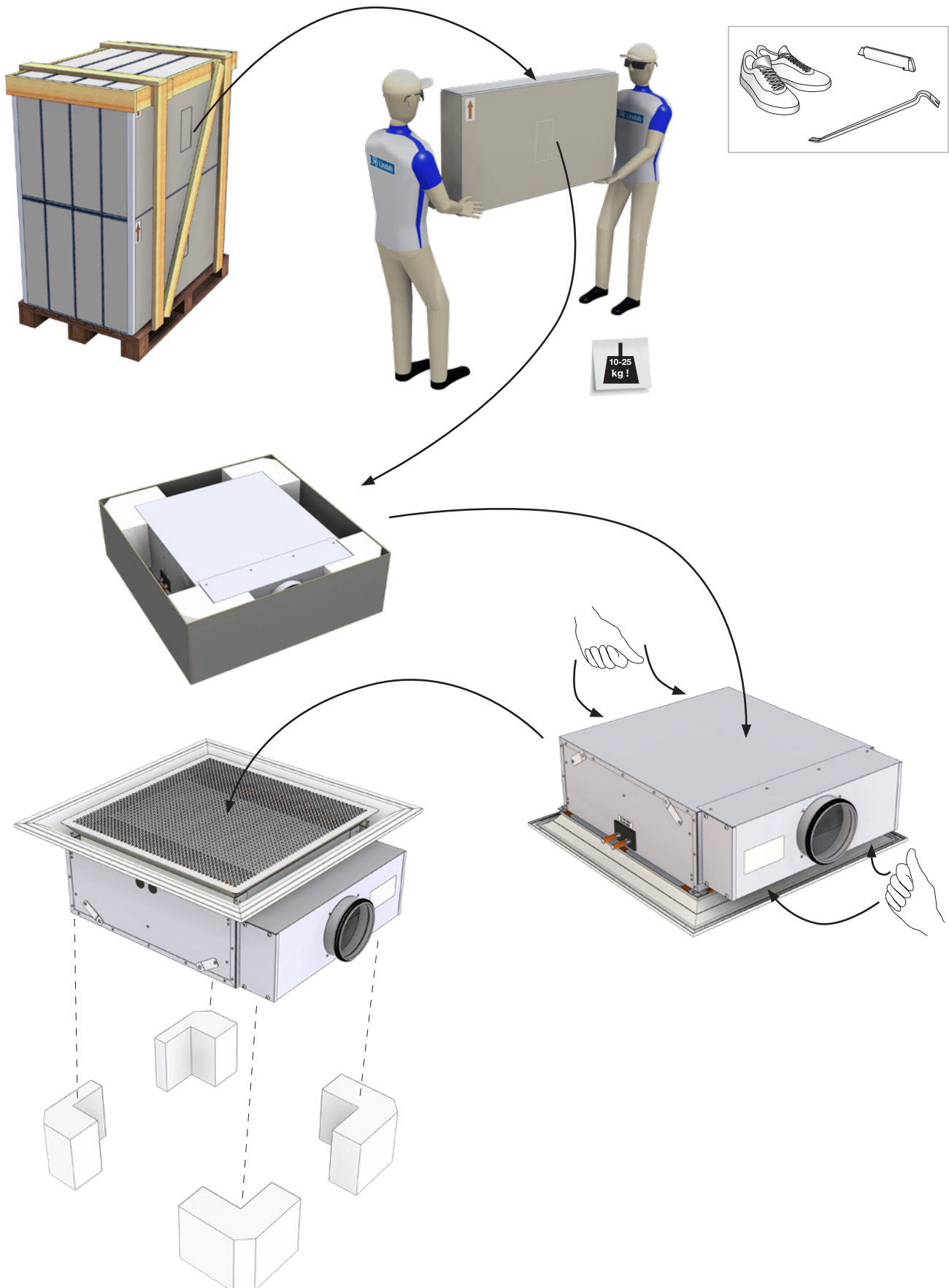
## 2.9 Cleaning after assembly/ before commissioning

Please remember to remove plastic folio and other protection material before commissioning and clean the product before hand over.

# Installation instruction

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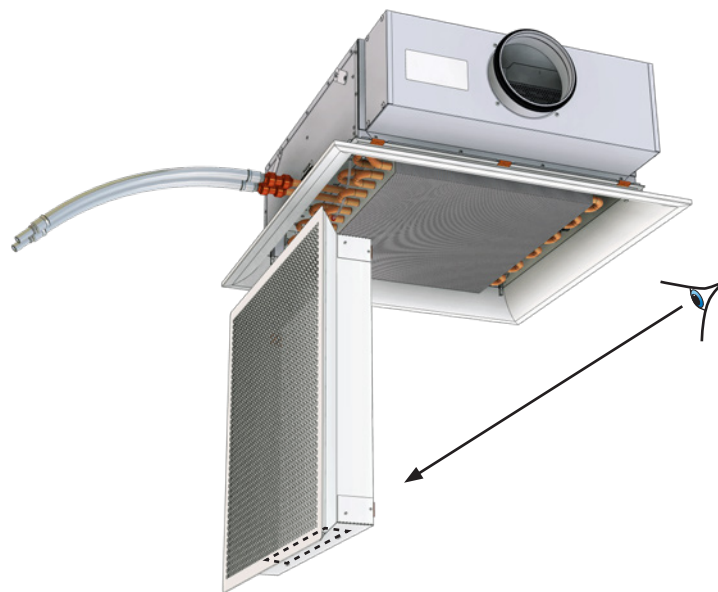
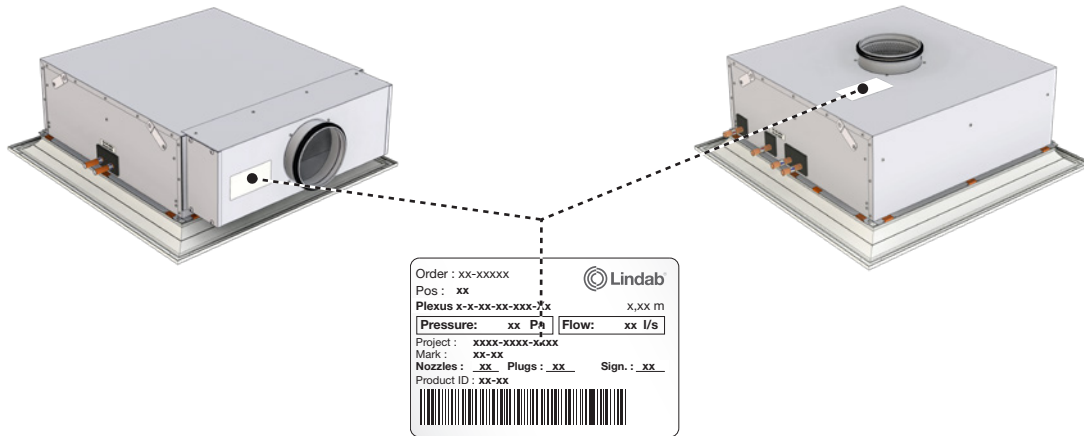
## 2.10 Packing, unpacking guideline



# Installation instruction

# Plexus

## 2.11 Product labelling



**JetCones**

Date	P <sub>stat</sub> [Pa]	q <sub>v</sub> [l/s]	1	2	3	4	Signature

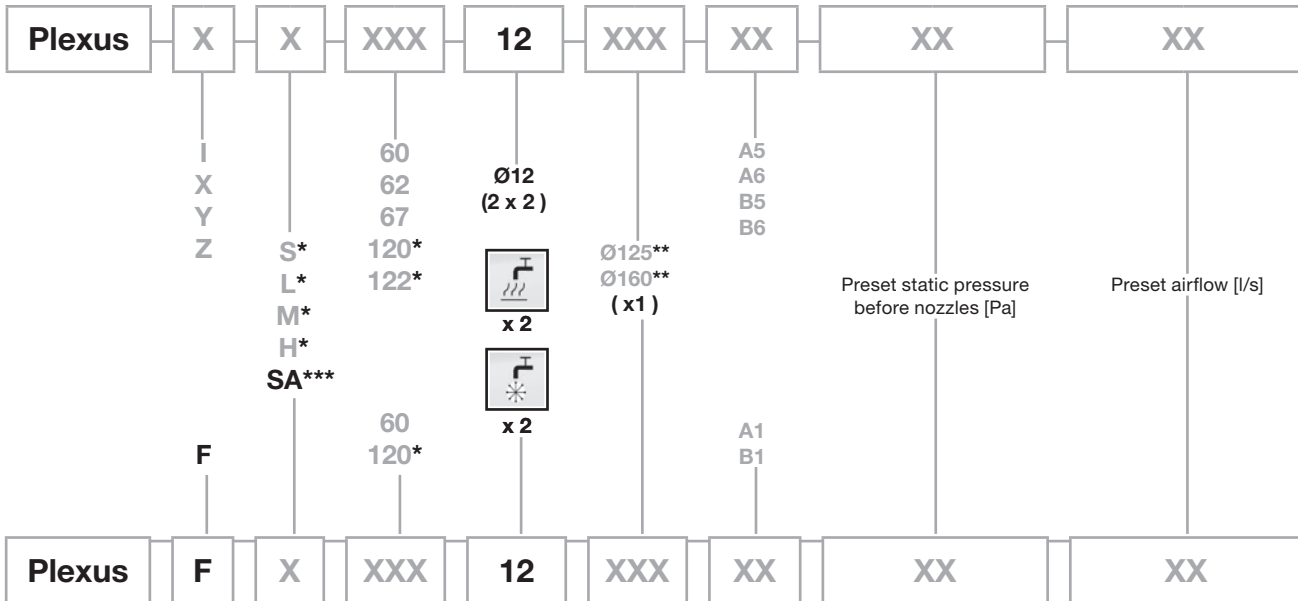
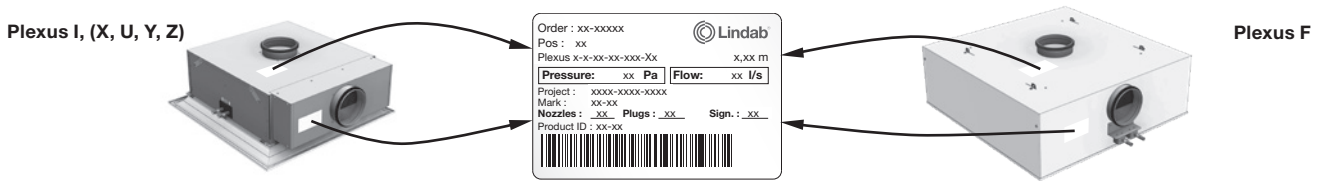
Rev: 04-2012



# Installation instruction

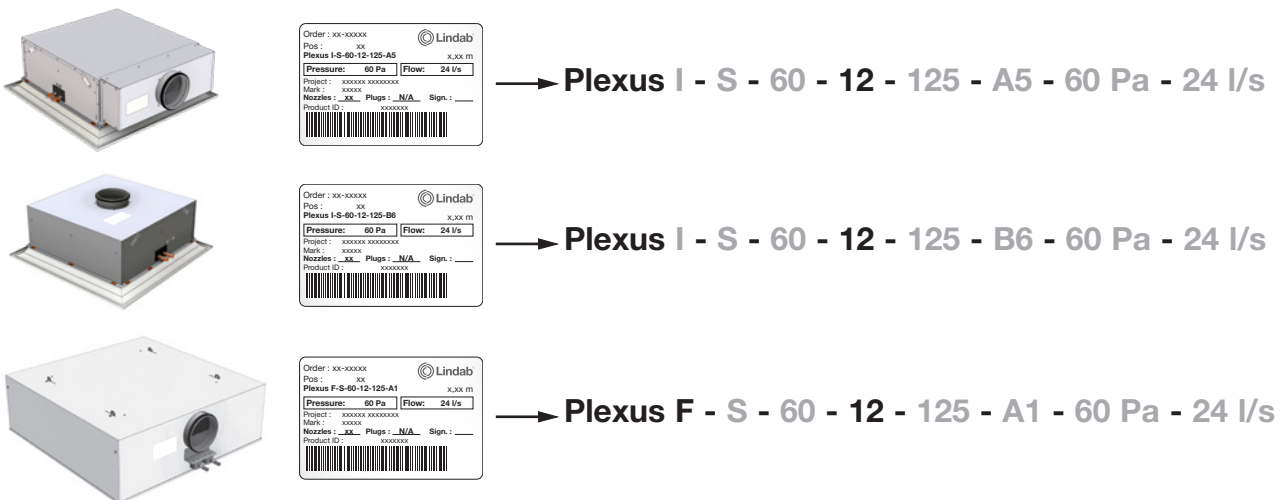
# Plexus

## 2.12 Order code



\* 120 and 122 only available when S-configuration has been selected. L, M, H configurations only available in 60, 62, 67 versions.  
 \*\* $\text{O}_{H1}$  (Side air connection (A)) = 125 only.  
 \*\* $\text{O}_{V1}$  (Top air connection (B)) = 125 only for S-configuration.  $\text{O}_{V1} = 160$  only for L, M, H configurations. (See also dimension table 3.2).  
 \*\*\*The type SA (integrated steel frame) is available for version ISA-60 and 120 only, (for T24/T15 lay-in 600, ceiling type 1).

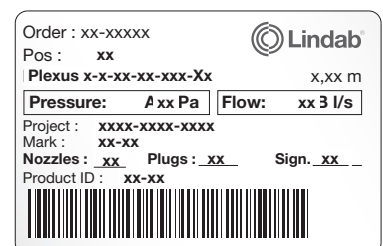
## 2.13 Order code examples



## 2.14 Label

On the label you will find:

- Order: Order identification number.
- Pos: Order position.
- Product: Product configuration.
- Project: Project name.
- Mark: Marking noted on order.
- Product ID: Product number.
- Sign: To be signed when checked and commissioned on site.



# Installation instruction

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## 2.15 Contents of order

### Standard package/order contains:

- Beam
- Plus features (pre-installed in factory).
- 4 pc/beam of copper insets (separate in smaller box).
- Accessories (separate in smaller box).

## 2.16 Plus features

The plus features offer a wide range of combinations with pre-installed accessories integrated into the product on production site. This reduces the installation time on site.

### 2.16.1 Inlet faceplates

Not relevant for Plexus

### 2.16.2 Outlet front grilles

Not relevant for Plexus

### 2.16.3 Integrated valves



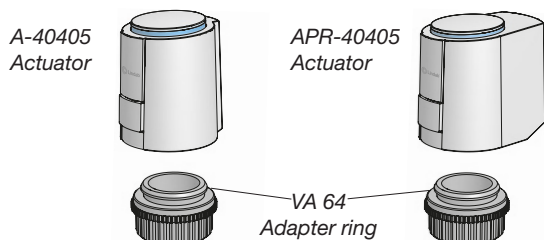
LinFlow-S, straight valve



LinFlow-A, angled valve

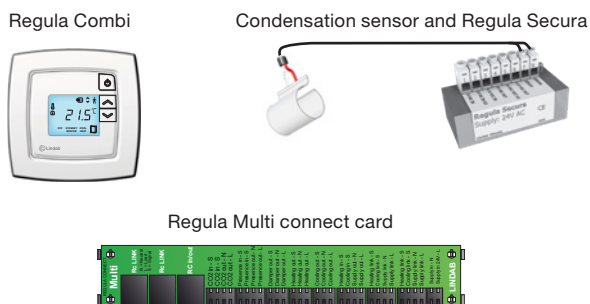
See [LinFlow-A](#) and [LinFlow-S](#) for details.

### 2.16.4 Thermoelectric actuators



The actuators can be pre-installed on the integrated/enclosed valves and connected to the integrated Regula connect card /Regula Secura (plus feature). Go to [Actuators](#) for details. See also [Adapter ring](#).

### 2.16.5 Integrated Regula components



Go to [Regula](#) for details.

### 2.16.6 Airguides

Not relevant for Plexus.

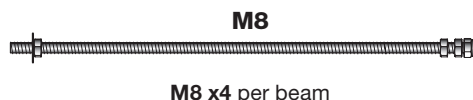
### 2.16.7 Heating

The product can be equipped with an extra water circuit with 12 mm connections in the battery to provide a heating function.

## 2.17 Accessories

Here are some general accessories. For full range and order numbers, see separate [Accessories](#) document. The components under 2.16.3 to 2.16.5 are also available as accessories. Go to "8. Accessories" in this document to find accessories order numbers.

### 2.17.1 Threaded rod kit (Hangers)



M8 x4 per beam

Go to 5.4 "Preparation for installation on the product" for more details. Order no: See [Accessories](#)

### 2.17.2 Flexible hoses



Order no: See [Accessories](#)

### 2.17.3 Transformer



Order no: See [Transformers](#)

### 2.17.4 Tectite fittings



Order no: 647690, 884050 and 642623 (12 mm). see [Accessories](#)



# Installation instruction

# Plexus

## 3. Product specification

### 3.1 Product description

The Plexus beam is a 360° comfort unit and is standardly prepared for ventilation and cooling (2-Pipe connection). It is available in an integrateable (I 60 / I 120) and an exposed version (F 60 / F 120).

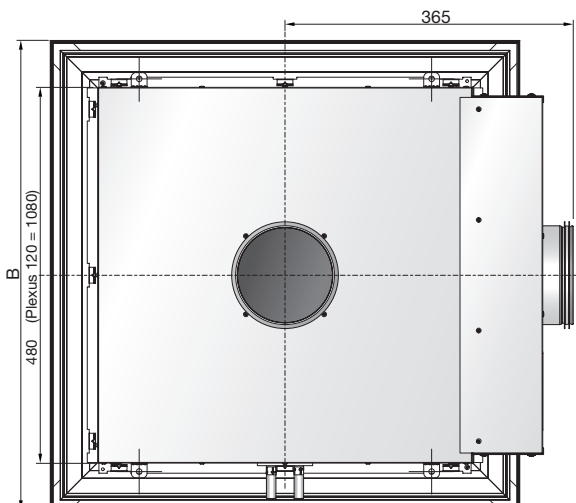
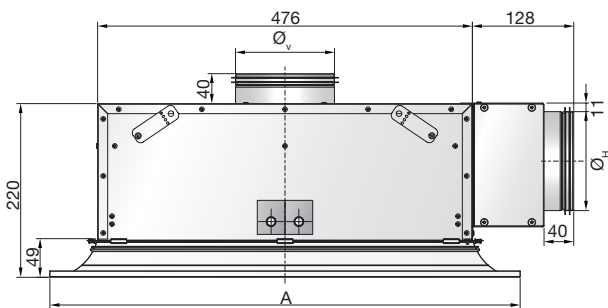
### 3.2 Dimensions

#### Plexus I, ( X, Y, Z )

	A mm	B mm	Ø <sub>H</sub> mm	Ø <sub>V</sub> mm	Ceiling type
I ( S/SA, L, M, H ) 60	594	594	125	125/160	1, 2, 3, 8
X ( S, L, M, H ) 60	599	599	125	125/160	4, 5, 6, 7, 14
Y ( S, L, M, H ) 60	575	575	125	125/160	9, 11
Z ( S, L, M, H ) 60	584	584	125	125/160	10
I ( S, L, M, H ) 62	619	619	125	125/160	21
I ( S, L, M, H ) 67	669	669	125	125/160	31, 32
I S/SA 120	594	1194	125	160	1, 2, 3, 8
X S 120	599	1199	125	160	4, 5, 6, 7, 14
Y S 120	575	1174	125	160	9, 11
Z S 120	584	1183	125	160	10
I S 122	619	1244	125	160	21

<b>!</b>	<b>Plexus (I, X, Y, Z) - (S)</b> => Ø <sub>V</sub> = 125	<b>Plexus (I, X, Y, Z) - (L, M, H)</b> => Ø <sub>V</sub> = 160
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Table 1. Plexus dimensions and ceiling systems.

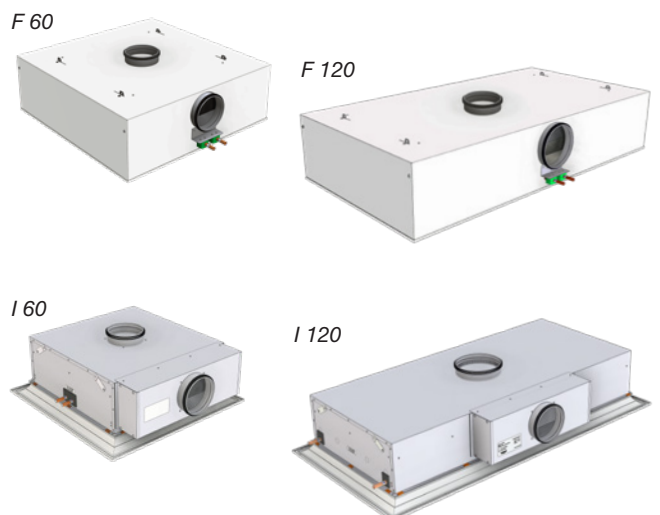
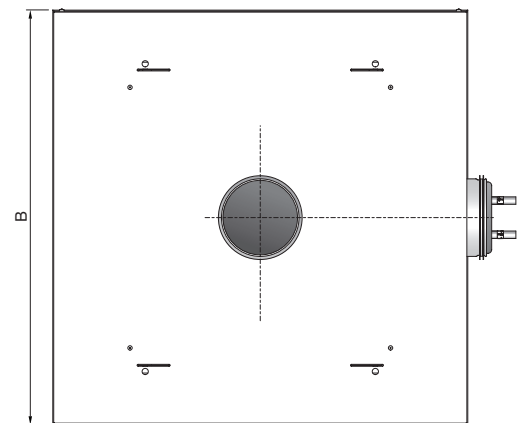
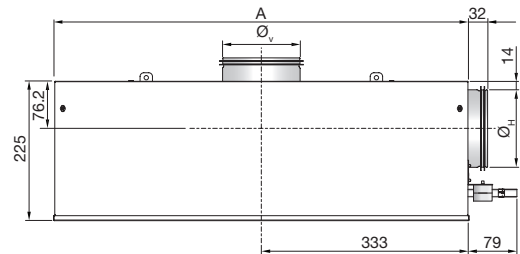


#### Plexus F

	A mm	B mm	Ø <sub>H</sub> mm	Ø <sub>V</sub> mm
F ( S, L, M, H ) 60	669	669	125	125/160
F S 120	669	1269	125	160

<b>!</b>	<b>Plexus (F) - (S)</b> => Ø <sub>V</sub> = 125	<b>Plexus (F) - (L, M, H)</b> => Ø <sub>V</sub> = 160
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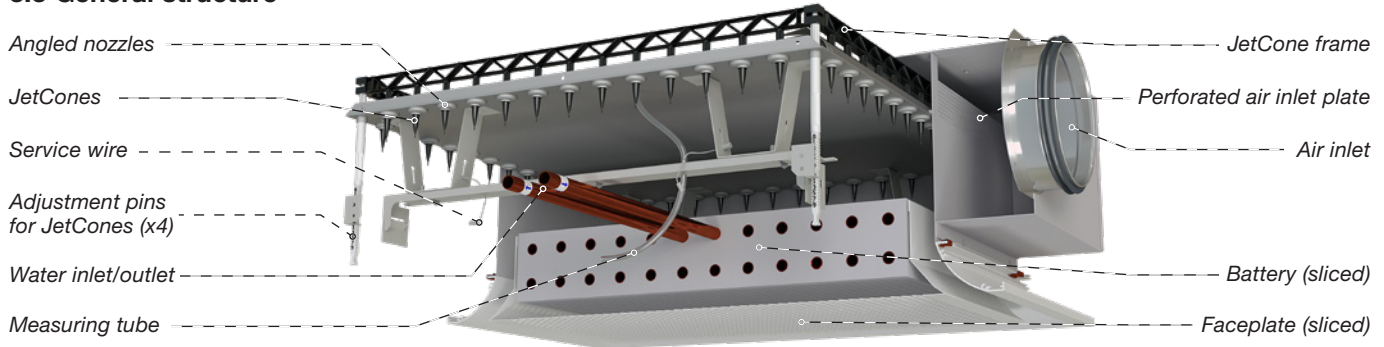
Table 2. Plexus F dimensions



# Installation instruction

# Plexus

### 3.3 General structure



### 3.4 Material data

Type	Plexus I 60	Plexus I 120		Plexus F 60	Plexus F 120	
	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating	Cooling/Heating
<b>Dry weight, kg</b>	11.6	18.6	20	17.2	28.9	30.3
<b>Water content, cooling, l</b>	1.0	1.3		1.0	1.3	
<b>Water content, heating, l</b>	0.2	0.4		0.2	0.4	
<b>Water content, cooling only, l</b>	1.2	1.3		1.2	1.3	
<b>Copper pipes, quality</b>	EN-12735-2-CU-DHP					
<b>Pressure class</b>	PN10					

Table 3. Material data

### 3.5 Environmental Declarations

Please follow the links below

- [Building product declaration](#)
- [Declaration of conformity](#)
- [Eurovent certificate](#)

### 3.6 Pressure Class

The waterborne products in Lindab, active chilled beams (battery products), passive chilled beams (battery and strips products), facade units (battery) and radiant panels (strips and panels) are produced according to pressure class PN10 according to EN 1333: 2006.

This means the maximal working pressure for the products at a water temperature of 20°C must not exceed 10 bar.

### 3.7 Water quality

Lindab recommend water treatment and quality to be according to VDI 2035-2.

- The water preparation and maintenance for the chilled beam water circuit must be handled by a specialist.
- To prevent corrosion, the water circuit must be airtight.
- The water system must also be equipped with aerators to remove any build-up air in the system.
- The water must be oxygen free, to prevent corrosion.
- The water system must be filled with potable water that complies with the “EC directive 98/83/EC”.
- pH value of water must be between approximately 6-9 pH.
- The water velocities should not exceed 1m/s, and should be kept as close to the nominal flow as possible to minimize noise and optimize the energy yield.
- Use in-line strainers to remove dirt particles from the water.
- If the water contains any additive inhibitor, then it must be appropriate to use with copper and solder.

### 3.8 Air quality

Primary supply air have to be clean, dry and filtered before reaching the beam.

### 3.9 Capacity test

Lindabs active chilled beams are Eurovent-certified and tested according to EN-15116.



Please visit [Plexus](#) on [www.lindqst.com](http://www.lindqst.com) and see [Eurovent](#) for more details.

# Installation instruction

# Plexus

## 4. Connections

### 4.1. Water connections

Flow indication arrows are shown on the inlet and return pipes in order to assist the installer.

If the control valves have been ordered separately, a special direction of the flow must be upheld to ensure correct flow through the control valve. Please note the flow direction indicator on the valve to insure correct installation in relation to the desired flow.

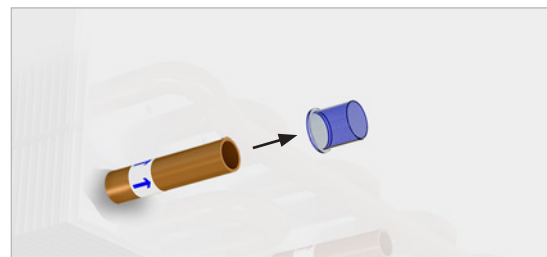
When connecting a panel or a beam with the piping system either a push-on fitting or a compression coupling should be used. Lindab have tested and recommends John Guest push on fittings as well as push-on fittings from Tectite (available as accessory. See [Accessories](#)).

To avoid sound being transported over the beam, we recommend to use our flexible hoses between the piping and the beam connections. See [Accessories](#).

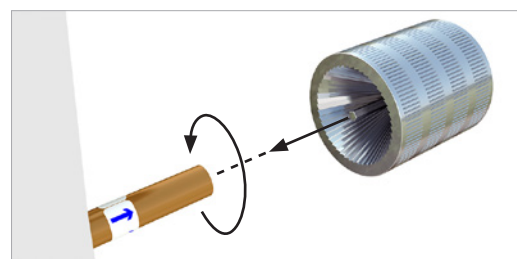
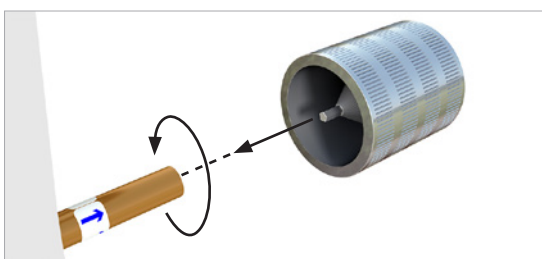
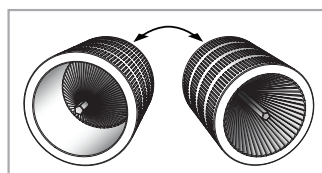
**NB!** Every control valve can create sound when it is installed directly connected to the water in- or outlet (or into the piping in close distance to the in- or outlet of the water product). To avoid unwanted sound generation we recommend to always use a Lindab control valve [LinFlow-A](#) (angled) or [LinFlow-S](#) (straight) and calculate the beam with the valve in [LindQST\waterborne calculator](#).

#### 4.1.1 Before installation

- Notice! The connection pipes are internally soft-welded, therefore it is not allowed to solder the beam to the pipes. For other than Lindab fittings and valves, please consult the installation guide for the specific fitting for further details on proper installation.
- Both inlet- and return pipes are covered by a plastic or rubber protection cover, which must be removed before installation.



- After removing the protection cover, make sure that the pipe is intact and undamaged, especially at the pipe end, as even small dents and scratches potentially pose a risk of leakage in the system.
- Eventually deburr the pipe ends on the inside and the outside, using a deburring tool before installation.



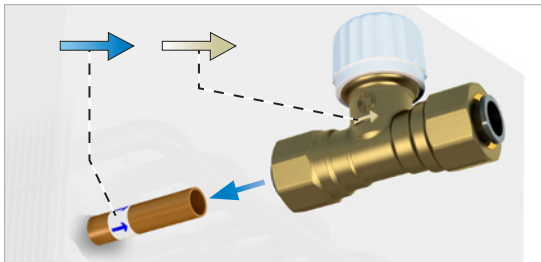
- Always remember to do a pressure test after assembly of the pipe work.

# Installation instruction

# Plexus

## 4.1.2 Push-on valve

- Mount a push-on valve to the pipe. Make sure the valve has the correct flow direction (see indication arrow on the valve) and that you have the correct valve, when integrated valve has been chosen (see indication on valve or follow cabelling to Regula Connect card). Cooper inserts aren't required !
- Please refer to the suppliers manual.

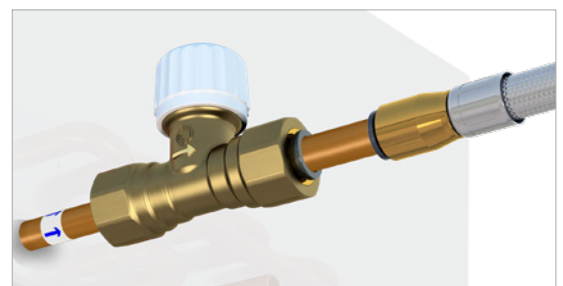
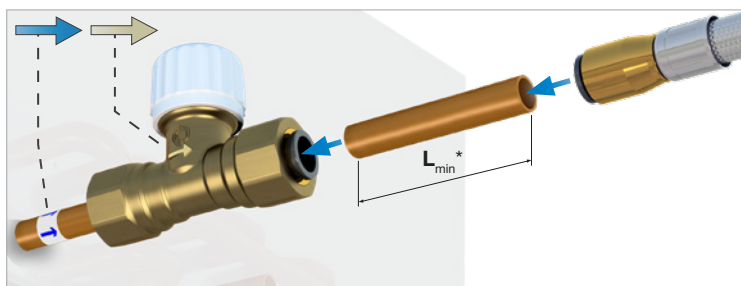
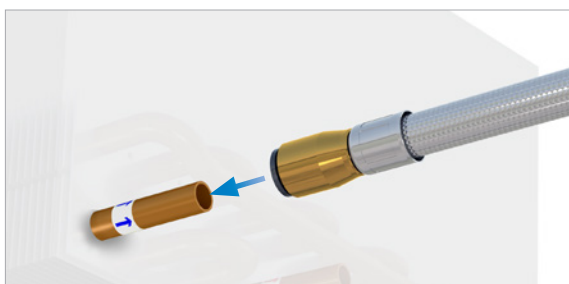


## 4.1.3 Compression fitting

- While mounting a compression fitting, the pipe will be exposed to a big amount of force, creating a risk of crushing the pipe. To ensure that the pipe won't be crushed when mounting the compression fitting, a copper insert must be inserted into the pipe (always part of the delivery).
- The copper insert should be placed inside the pipe on the beam. Always support the copper pipe coil when inserting the copper insert into position.
- Mount a compression coupling and/or a valve to the pipe. Don't stress the nut too much, since this may crush the pipe.
- Please refer to the suppliers manual.

## 4.1.4 Flexible hoses

- Our flexible hoses with straight ends can be used with both push-on and compression fitting.
- We recommend to use our flexible hoses with push-on fittings, for easier and faster mounting.
- For the connection to an enclosed valve with integrated push on coupling a flexible hose with straight end (male) or with push on (female) and a short copper pipe can be used.
- Please refer to the suppliers manual.



\*  $L_{min} = 70 \text{ mm}$  (to ensure you can open the couplings again).

Lindab flexible hoses are available with straight end (male) for direct connection to Lindab valves also.

# Installation instruction

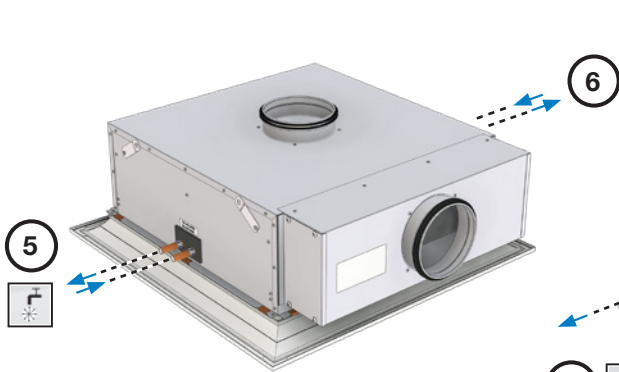
# Plexus

## 4.1.5 Possible connections water cooling or heating (2-pipe, standard)

All the Plexus active chilled beams are in the standard version equipped with a so called "2-pipe connection" and contain one water circuit (cooling or heating).

The dimension for all water pipe connections are  $\varnothing = 12$  mm.

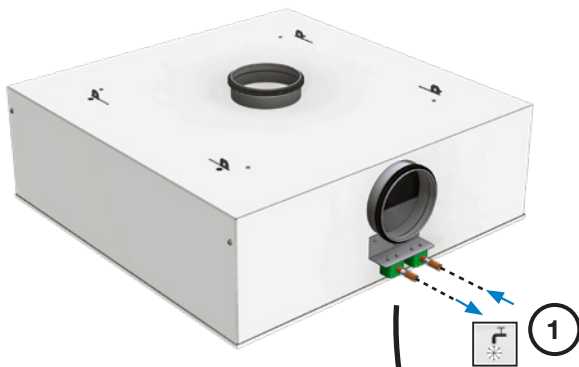
**Plexus 60: I, (X, Y, Z) cooling or heating (standard).**



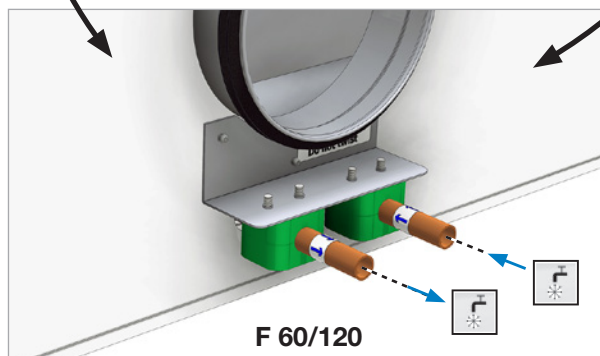
**Plexus 120: I, (X, Y, Z) cooling or heating (standard).**



**Plexus F 60: cooling or heating (standard).**



**Plexus F 120: cooling or heating (standard).**



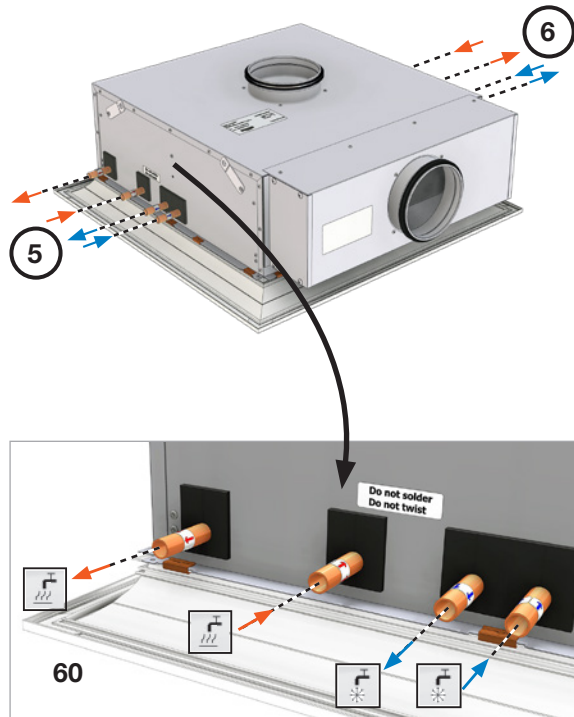
# Installation instruction

# Plexus

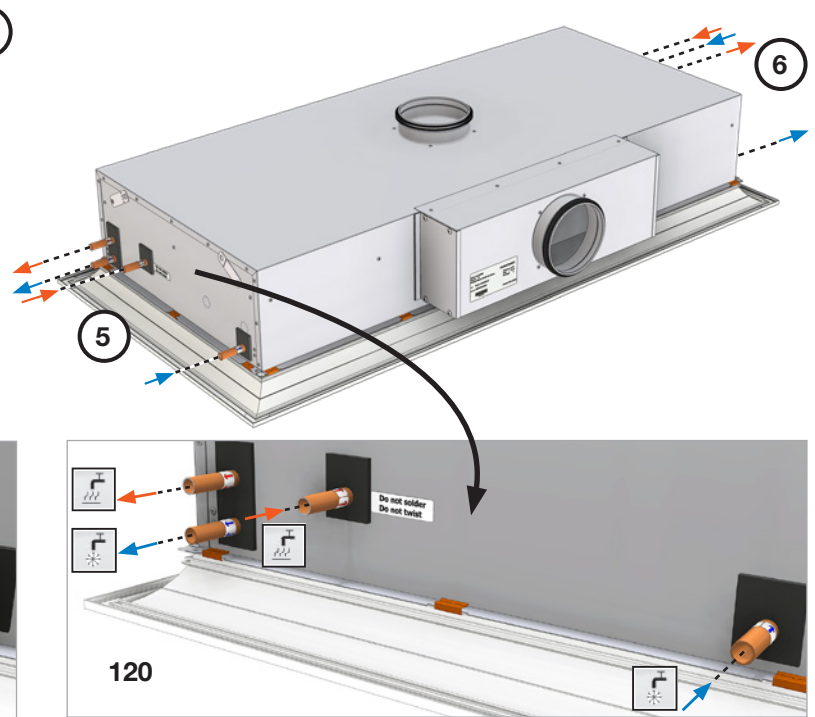
## 4.1.6 Possible connections water cooling and heating (4-pipe, Plus feature)

All Plexus' can have a 4-pipe water connection (plus feature), which beside the cooling circuit also includes a heating circuit. The dimension for all water pipe connections are  $\varnothing = 12$  mm.

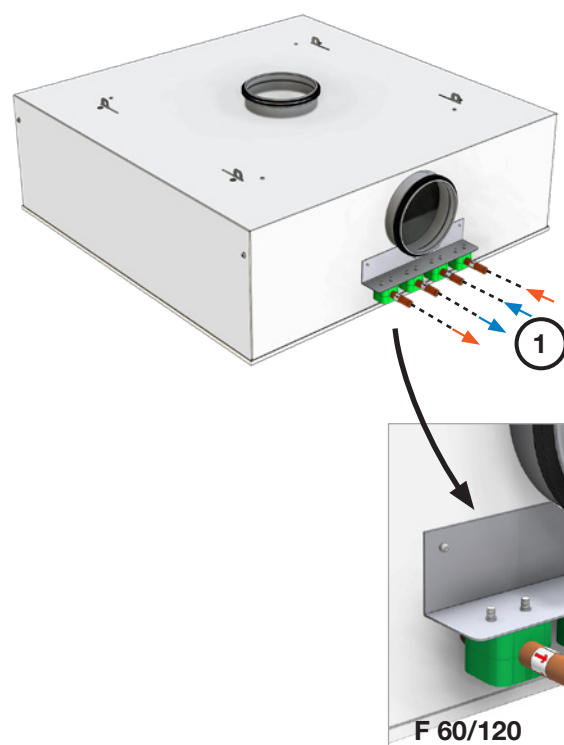
Plexus 60: I, (X, Y, Z) cooling and heating.



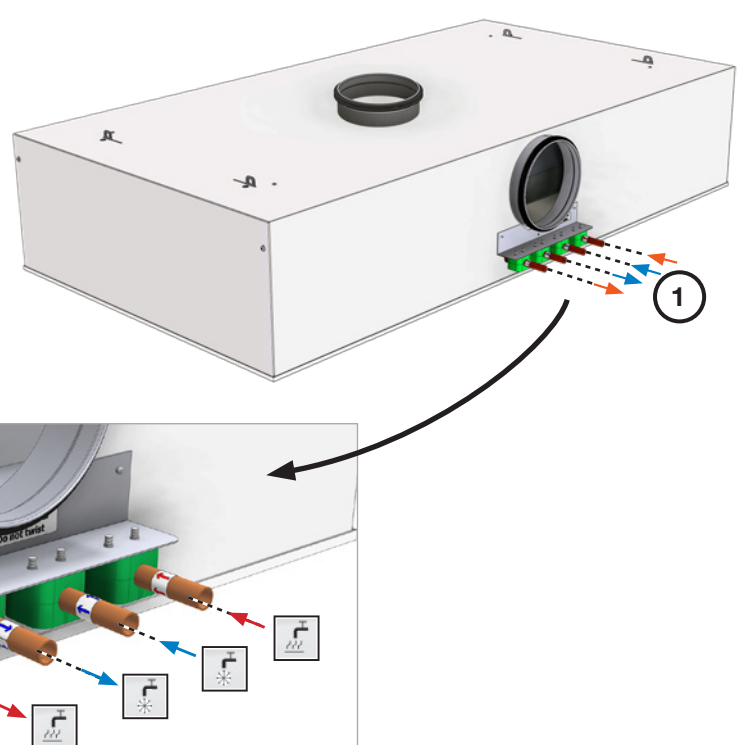
Plexus 120: I, (X, Y, Z) cooling and heating.



Plexus F 60: cooling and heating.



Plexus F 120: cooling and heating.

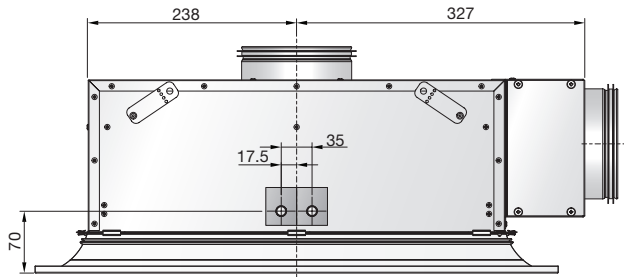


# Installation instruction

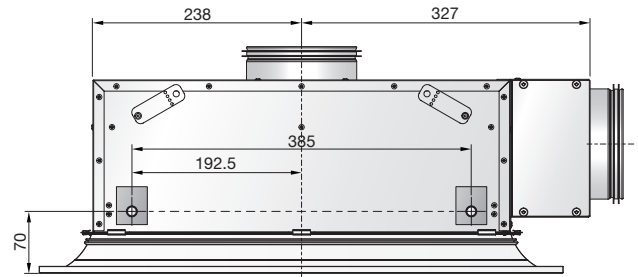
# Plexus

## 4.1.7 Water pipe dimensions and placement

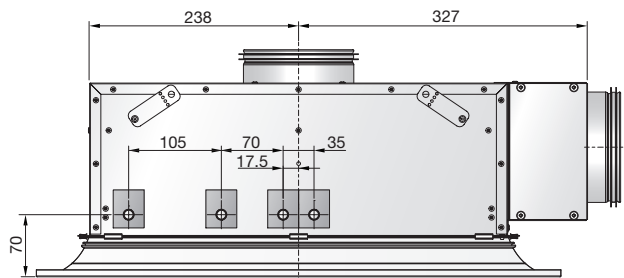
**Plexus 60: I, (X, Y, Z) cooling or heating (standard).**



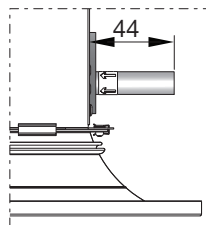
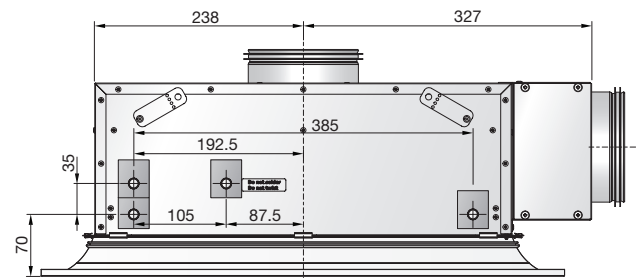
**Plexus 120: I, (X, Y, Z) cooling or heating (standard).**



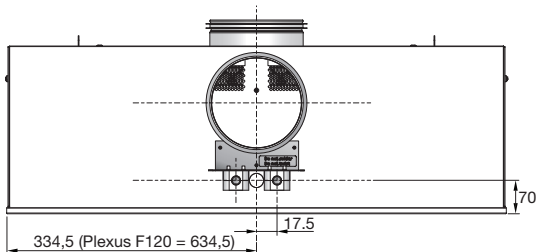
**Plexus 60: I, (X, Y, Z) cooling and heating.**



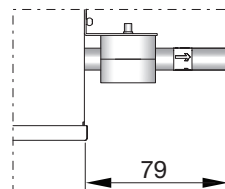
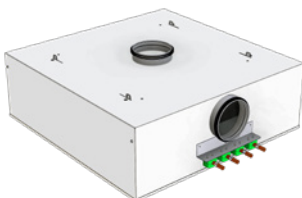
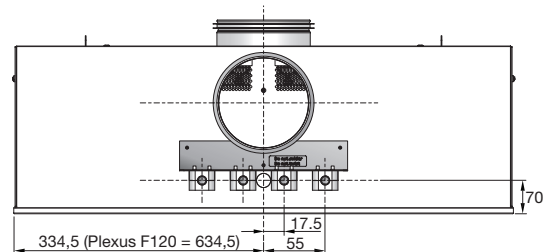
**Plexus 120: I, (X, Y, Z) cooling and heating.**



**Plexus F 60/120: cooling (standard)**



**Plexus F 60/120: cooling and heating**



# Installation instruction

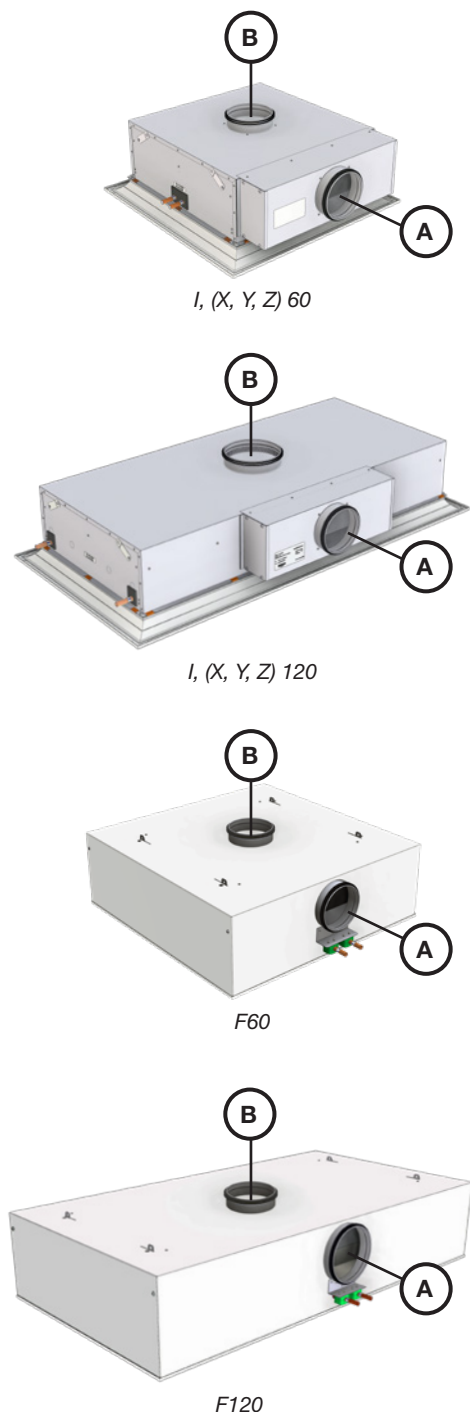
# Plexus

## 4.2 Air connections

### 4.2.1 Air connection installation

The primary air supply must be connected with instructions from a ventilation specialist. Lindab's chilled beams can beneficially be used together with Lindab's Safe® duct systems. We recommend a flexible duct connection, like Lindab DRATMFU-125/160, to balance out different installation heights or directions between connection and duct and avoid sound will be diverted from piping system to the ceiling.

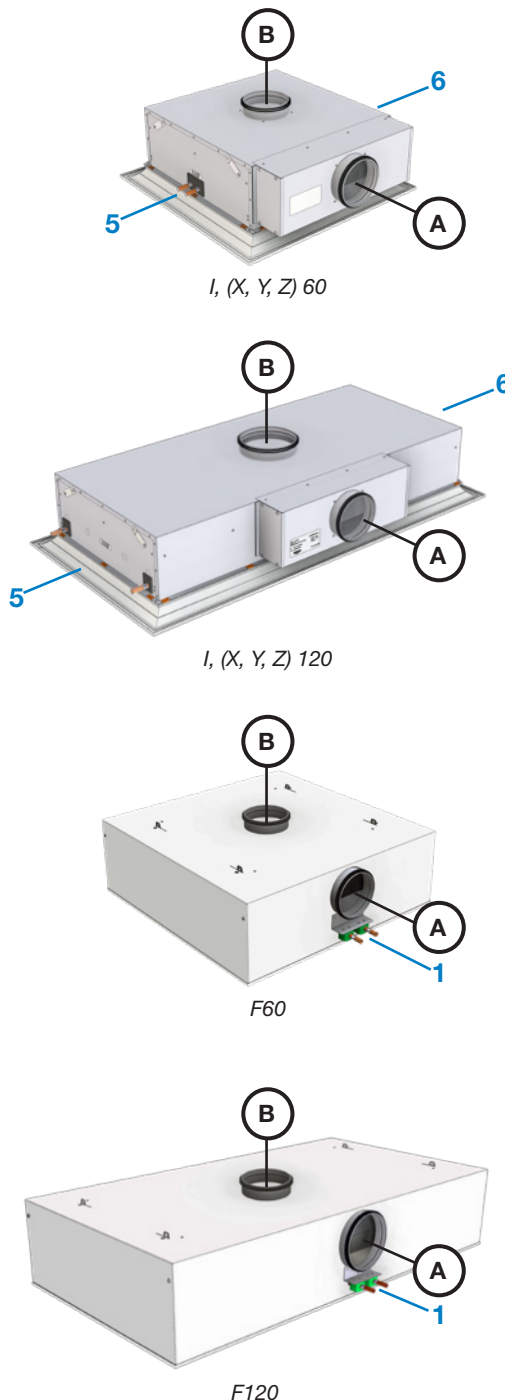
### 4.2.2 Possible connections supply air



### 4.2.3 Possible connections exhaust air

Not relevant for Plexus

### 4.3 Possible combination of connections



**Possible Plexus I, (X, Y, Z) connections**  
Supply air (A, B) and water (5, 6).  
A5, A6, B5, B6

**Possible Plexus F connections,**  
Supply air (A, B) and water (1).  
A1, B1



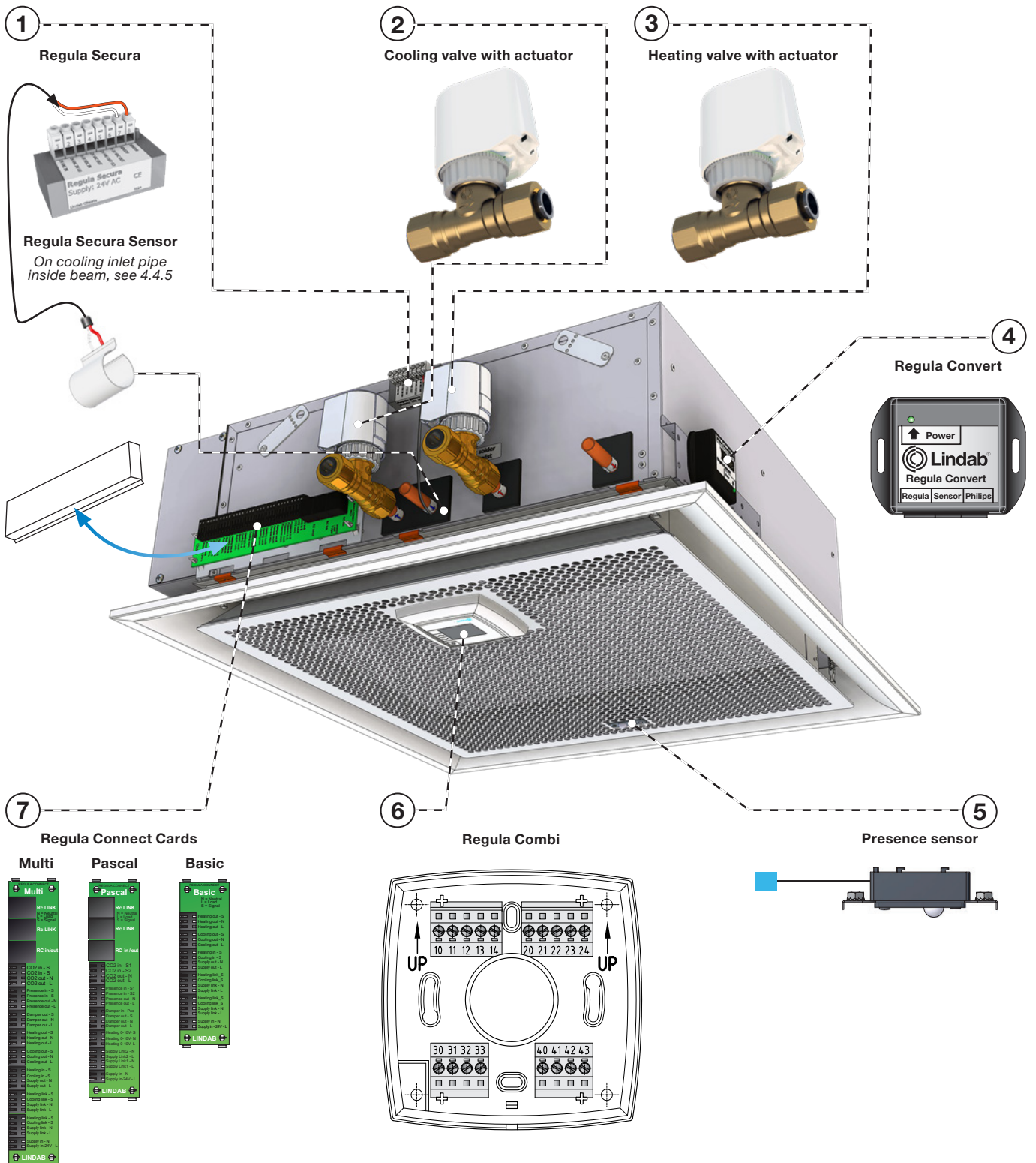
# Installation instruction

# Plexus

## 4.4 Electrical connections

Electrical connections on the beam are only necessary, when plus features are chosen and thanks to the pre-fabrication it is as easy as “plug and play”. The components are always installed near the water-connection at the end of the beam. For further information, see [Regula](#).

### 4.4.1 Regula components on the beam



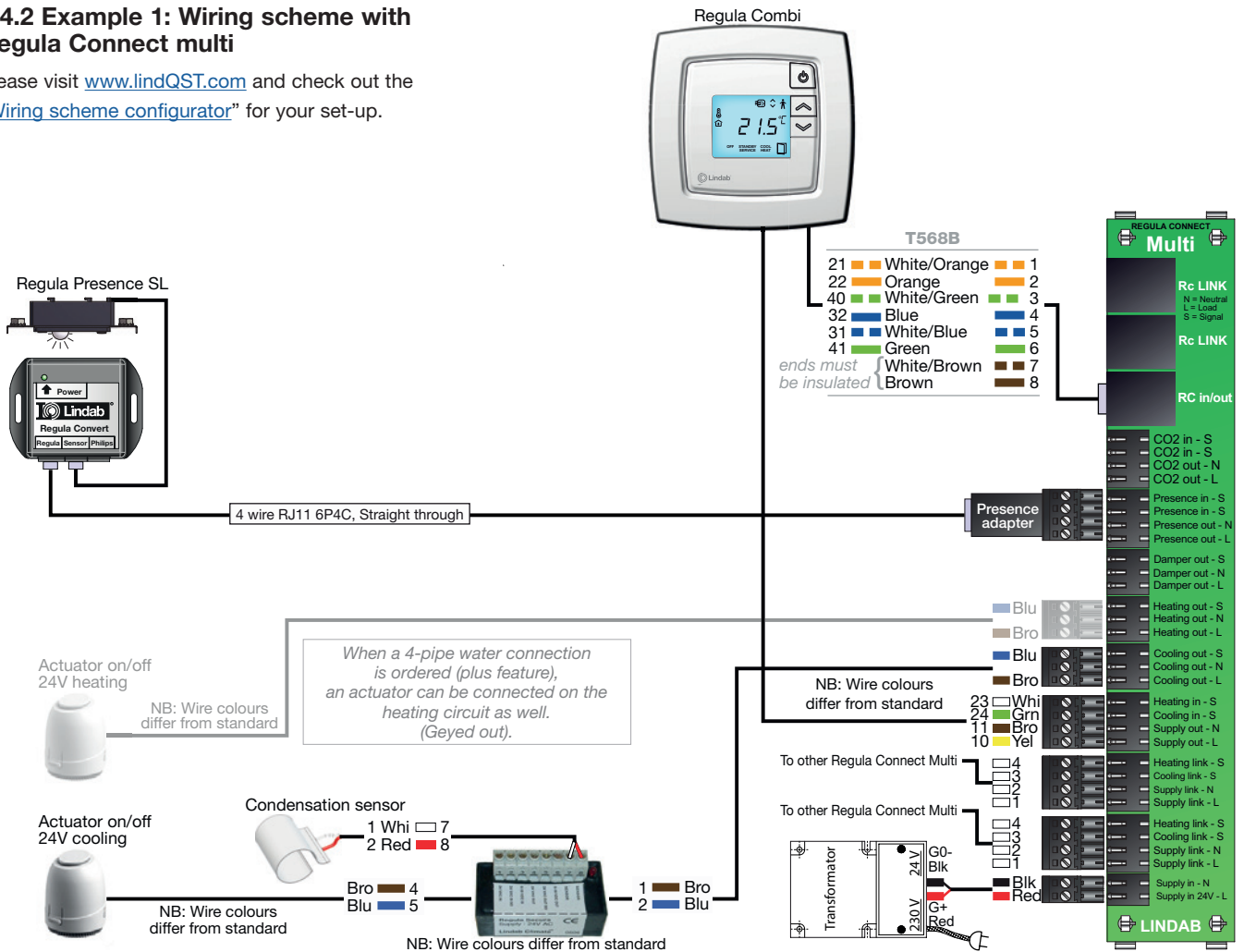
(with protection covers, optional).

# Installation instruction

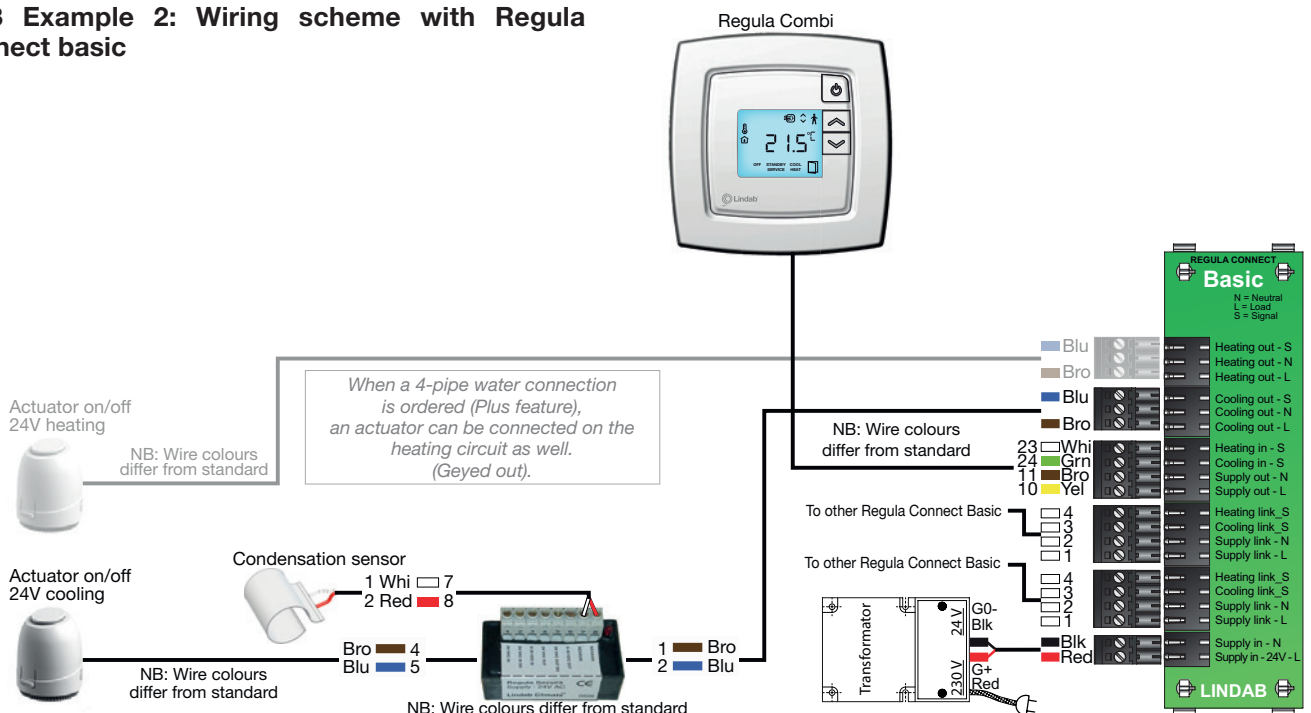
# Plexus

## 4.4.2 Example 1: Wiring scheme with Regula Connect multi

Please visit [www.lindab.com](http://www.lindab.com) and check out the "Wiring scheme configurator" for your set-up.



## 4.4.3 Example 2: Wiring scheme with Regula Connect basic



# Installation instruction

# Plexus

## 4.4.4 Regula Connect on the beam

Connect cards are pre-installed when the beam is ordered with PLUS-features. See [Regula Connect](#) for more details.

### Regula Connect Basic



### Regula Connect Pascal



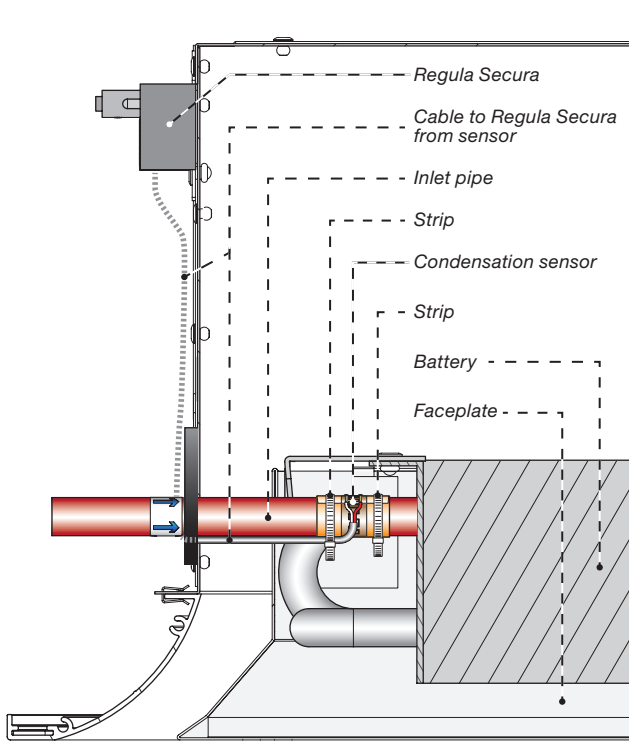
### Regula Connect Multi



## 4.4.5 Regula Secura on the beam

Regula Secura is pre-installed when the beam is ordered with PLUS-features. See [Regula Secura](#) for more details.

Condensation sensor and Regula Secura



## 4.4.6 Valves and Actuators on the beam

Description, see 2.16.3 and 2.16.4.

## 4.4.7 Regula Combi on/with the beam

The Regula Combi can be controlled and programmed locally in the display, or at a remote location by a EXOLINE or MODBUS communication system. Handles both 24V and 0-10V devices.



See the [Regula Combi](#) documentation.

## 4.4.8 Actuators

Description, see 2.16.4.

# Installation instruction

# Plexus

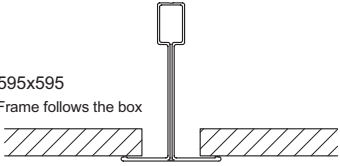
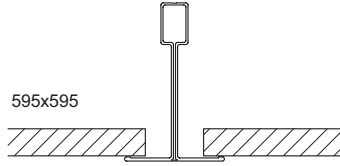

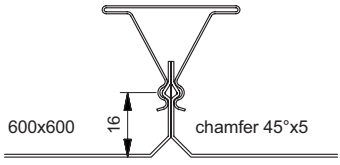
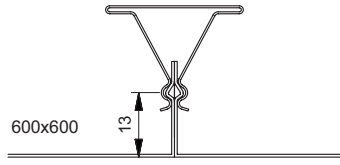
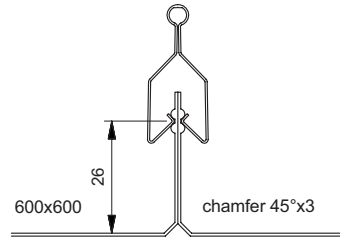
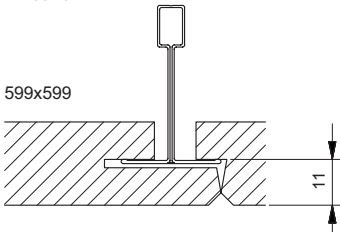
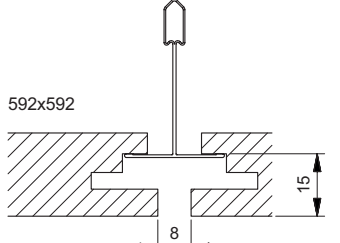
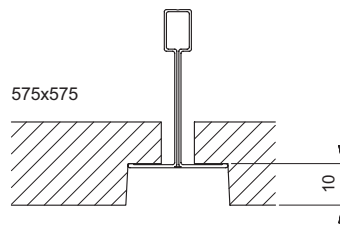
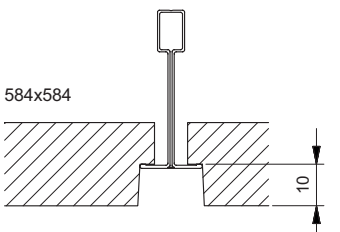
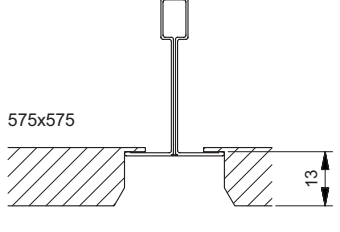
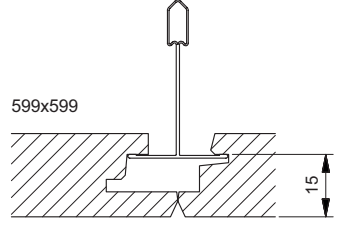
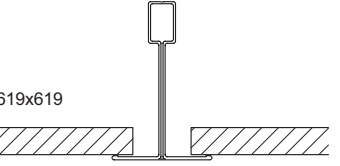
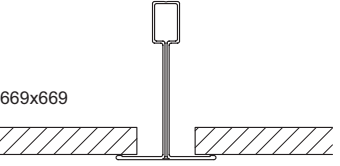
## 5. Installation of product

### 5.1 Handling of product

For the handling of the product please refer to 2.5.

### 5.2 Adaption to ceiling systems

#### 5.2.1 Ceiling systems

<p>① T24/T15 Lay-in 600 ( I-60 ) Water Danotile T24/T25 Ecophon T24 Rockfon A24</p> <p>595x595 Frame follows the box</p> 	<p>② T24/T15 Lay-in 600 ( I-60 ) Water not cleanable</p> <p>595x595</p> 	<p>③ Permanent ceiling ( I ) Water</p> 
<p>④ Dampa Clip-in bevelled edge ( X ) Water</p> <p>600x600 16 chamfer 45°x5</p> 	<p>⑤ Dampa Clip-in square edge ( X ) Water</p> <p>600x600 12</p> 	<p>⑥ Luxalon SQ Clip-In ( X ) Water</p> <p>600x600 26 chamfer 45°x3</p> 
<p>⑦ Danotile Contur ( X ) Water Ecophon D Rockfon D-XL</p> <p>599x599 11</p> 	<p>⑧ Ecophon Focus DG ( I ) Water</p> <p>592x592 15 8</p> 	<p>⑨ Rockfon E10 24 ( Y ) Water Ecophon - E / T24</p> <p>575x575 10</p> 
<p>⑩ Rockfon E10 15 ( Z ) Water Ecophon - E / T15</p> <p>584x584 10</p> 	<p>⑪ Danotile Markant ( Y ) Water</p> <p>575x575 13</p> 	<p>⑭ Ecophon Focus DS ( X ) Water Rockfon Sonar X</p> <p>599x599 15</p> 
<p>⑳ T24/T15 Lay-in-625 ( I-62 ) Water ㉑ T24/T15 Lay-in-625 ( I-62 ) Water not cleanable</p> <p>619x619</p> 	<p>㉒ T24/T15 Lay-in-675 ( I-67 ) Water ㉓ T24/T15 Lay-in-675 ( I-67 ) Water not cleanable</p> <p>669x669</p> 	

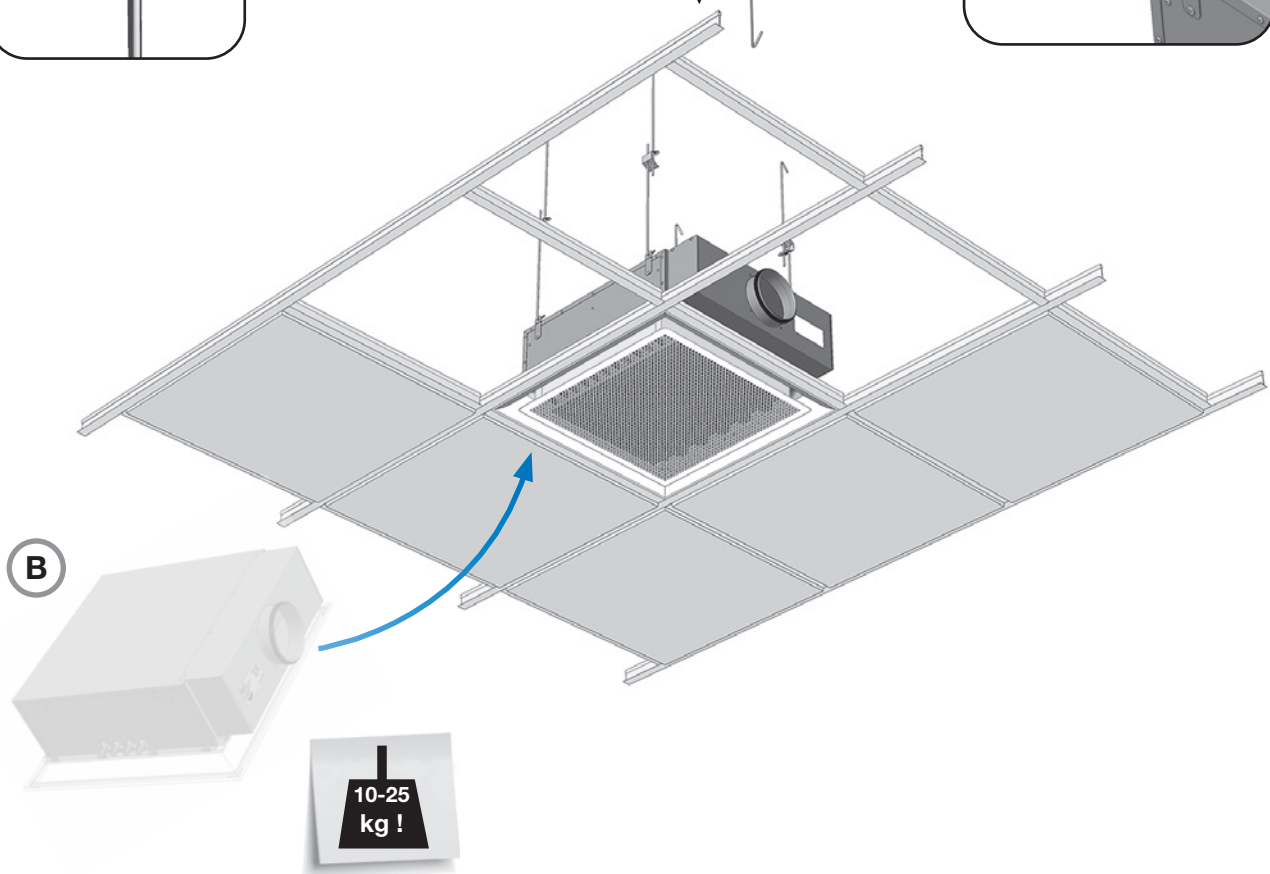
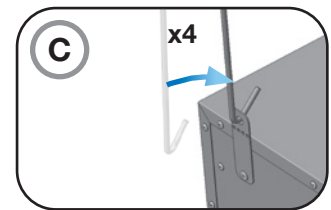
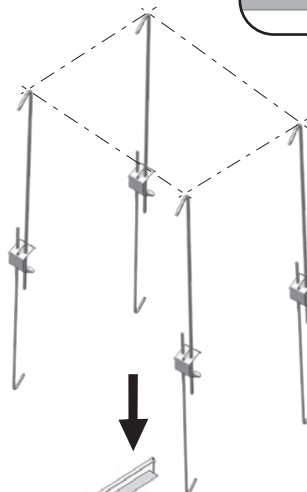
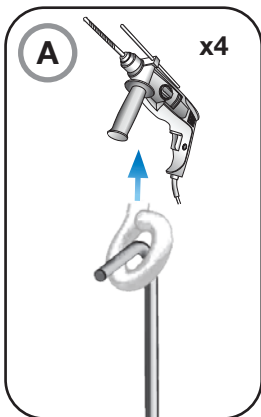
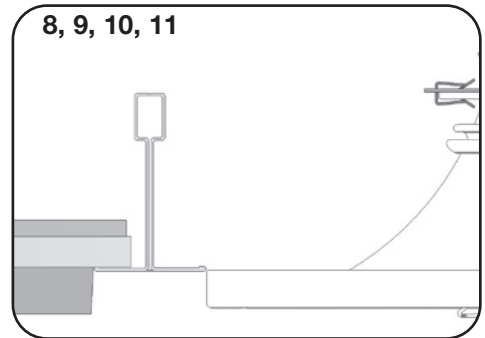
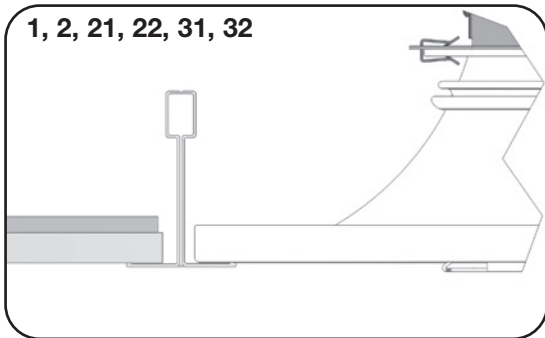
# Installation instruction

# Plexus

## 5.2.2 Adaption to ceiling system

Ceilingtype 1, 2, 8, 9, 10, 11, 21, 22, 31, 32 (Plexus I, Y, Z)

Plexus S/SA-60	(1)
Plexus I-62	(21, 22)
Plexus I-67	(31, 32)
Plexus Y	(9, 11)
Plexus Z	(10)



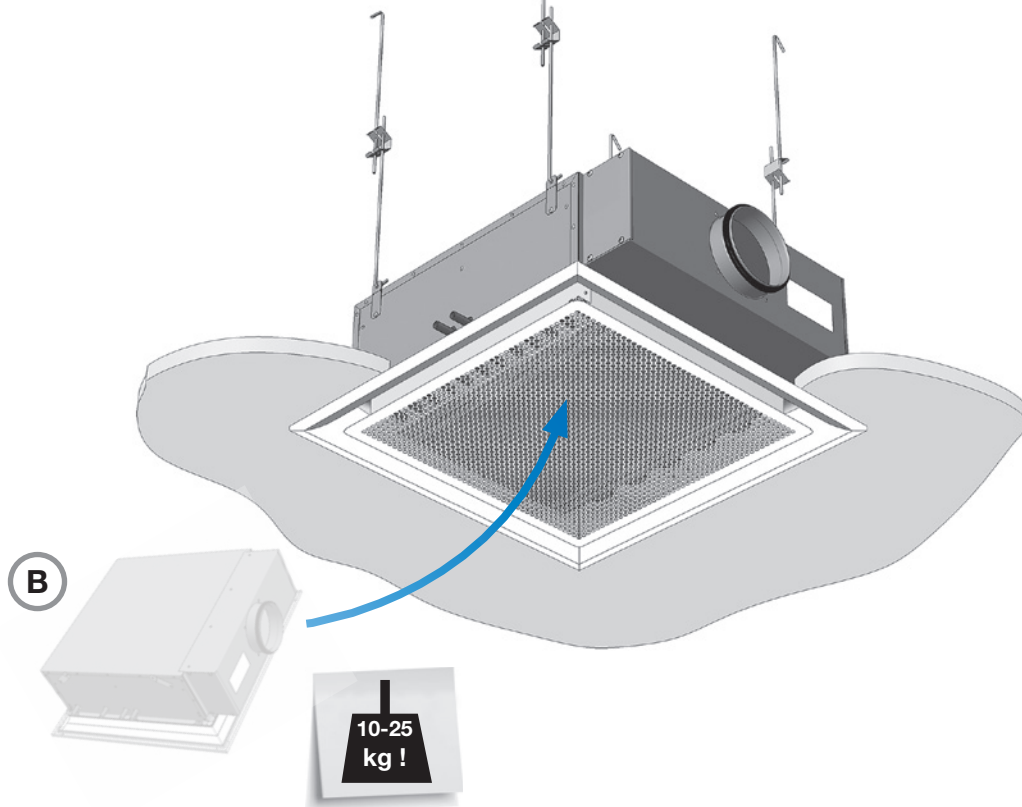
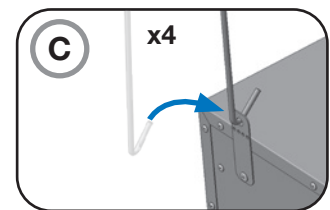
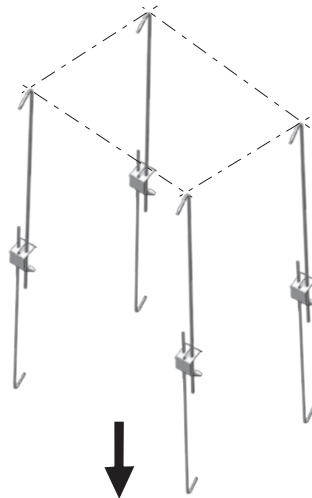
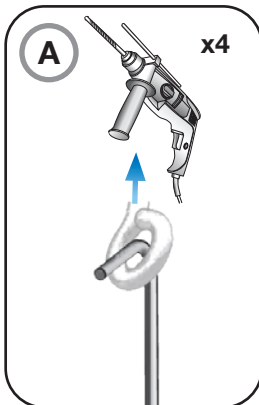
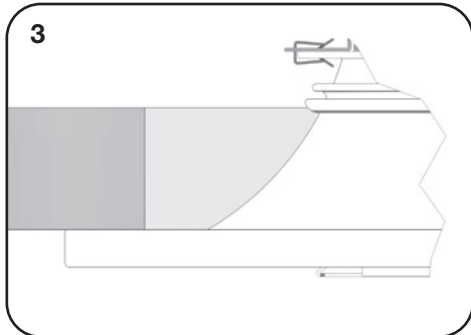
# Installation instruction

# Plexus

## Ceilingtype 3 Permanent ceiling, (Plexus I)

### Cutout dimensions in permanent ceilings:

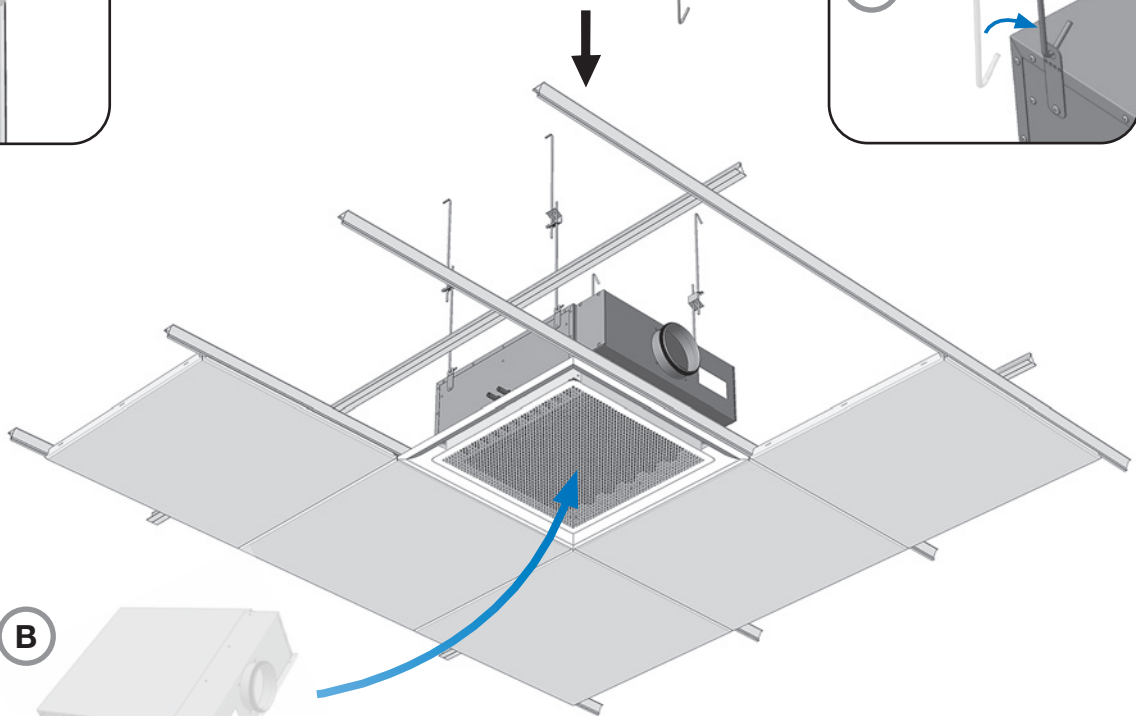
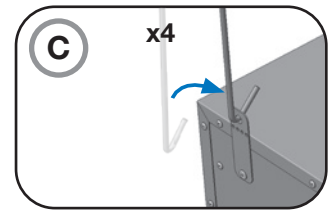
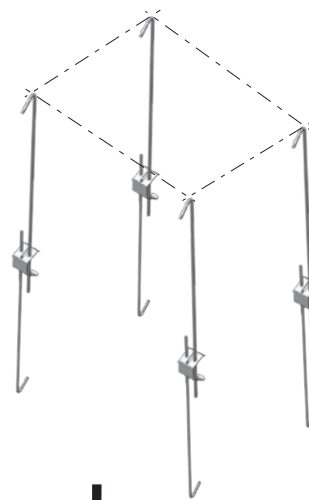
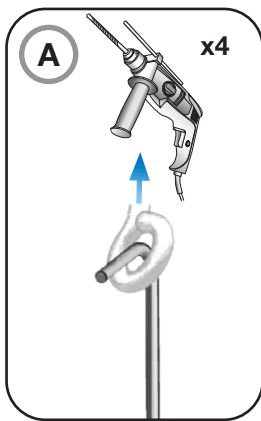
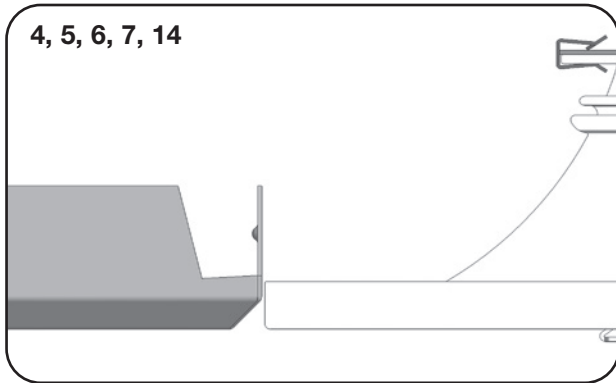
Plexus I (S/SA, L, M, H) 60	=	544 x 544 mm
Plexus I (S/SA) 120	=	544 x 1144 mm
Plexus I-62 (S, L, M, H)	=	569 x 569 mm
Plexus I-67 (S, L, M, H)	=	619 x 619 mm



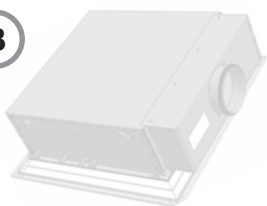
# Installation instruction

# Plexus

Ceilingtype 4, 5, 6, 7, 14 (Plexus X)



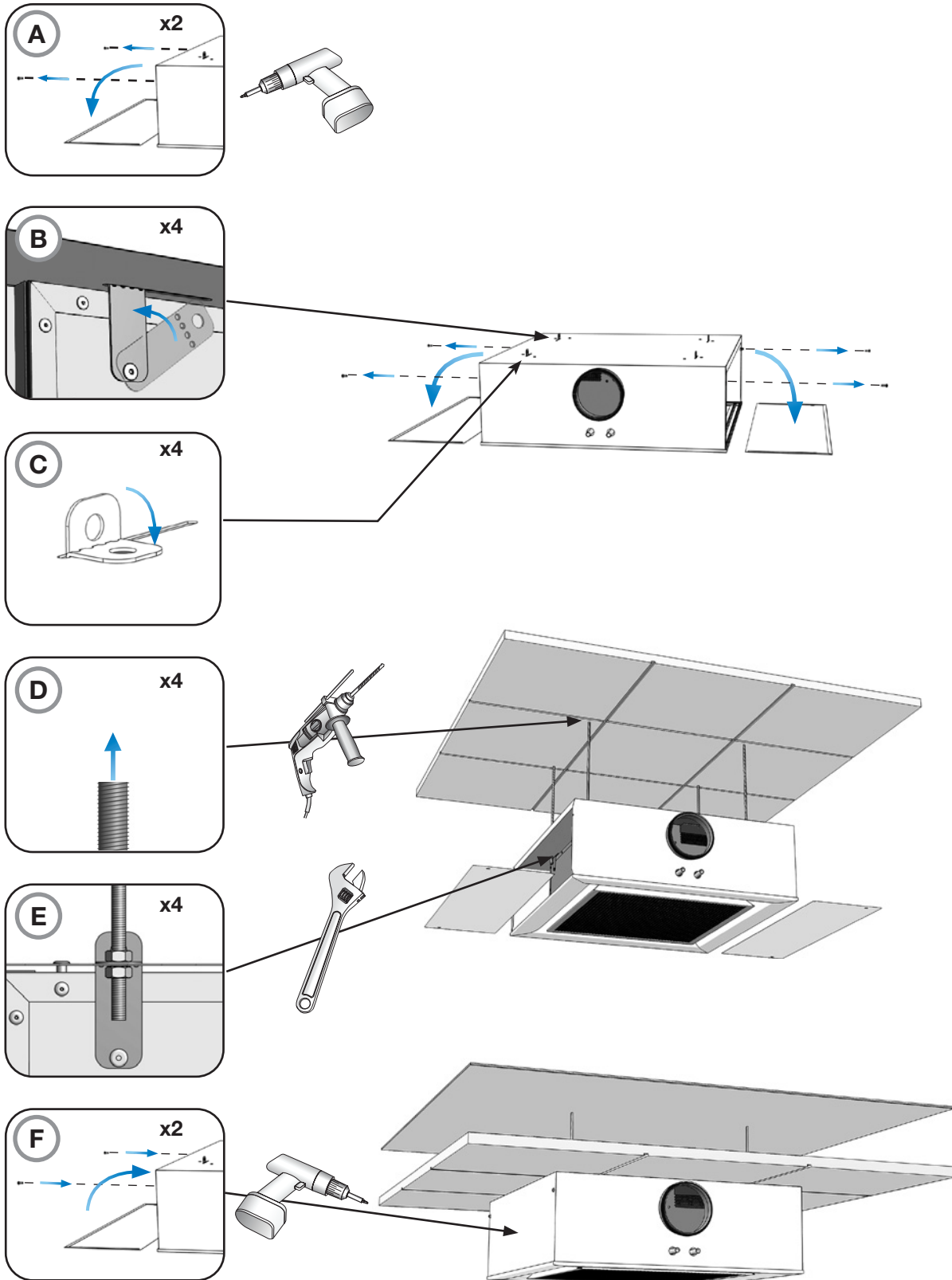
**B**



# Installation instruction

# Plexus

## Freehanging, exposed (Plexus F)



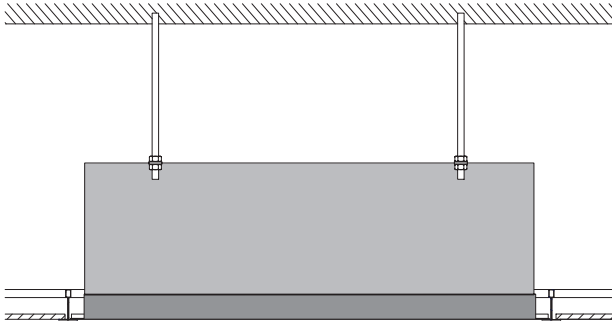


# Installation instruction

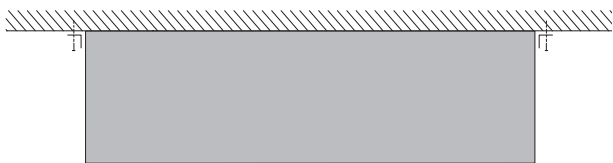
# Plexus

## 5.3 General installation principles

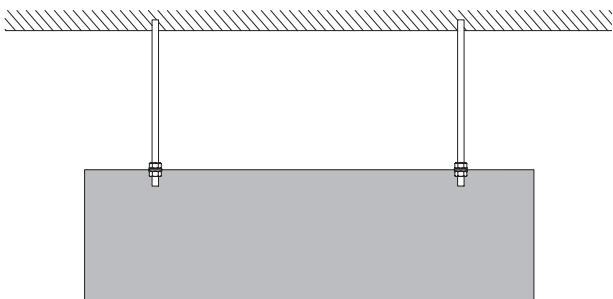
### 5.3.1 Recessed in suspended T-bar ceiling



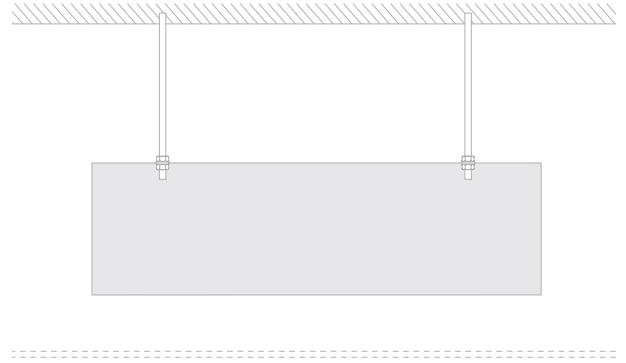
### 5.3.2 Exposed, sealed to the ceiling



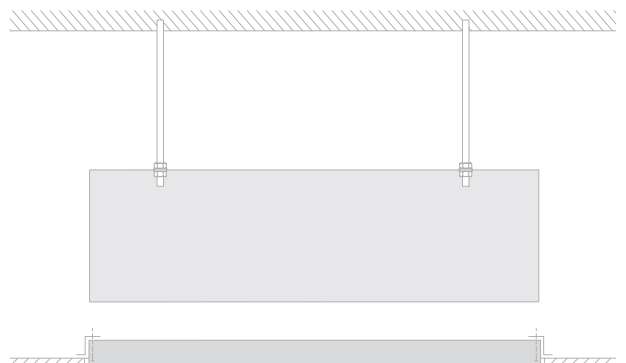
### 5.3.3 Exposed, free hanging



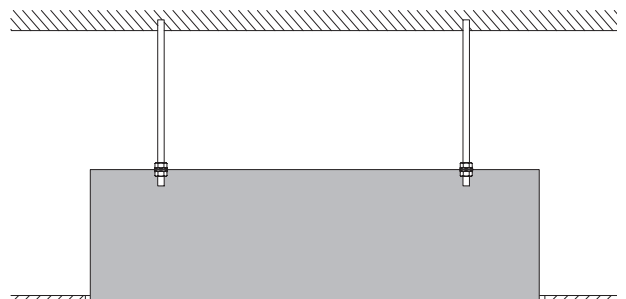
### 5.3.4 Free hanging above perforated or egg-crate ceiling



### 5.3.5 Recessed in suspended (permanent) ceiling



### 5.3.6 Recessed in suspended (permanent) ceiling without cover flanges



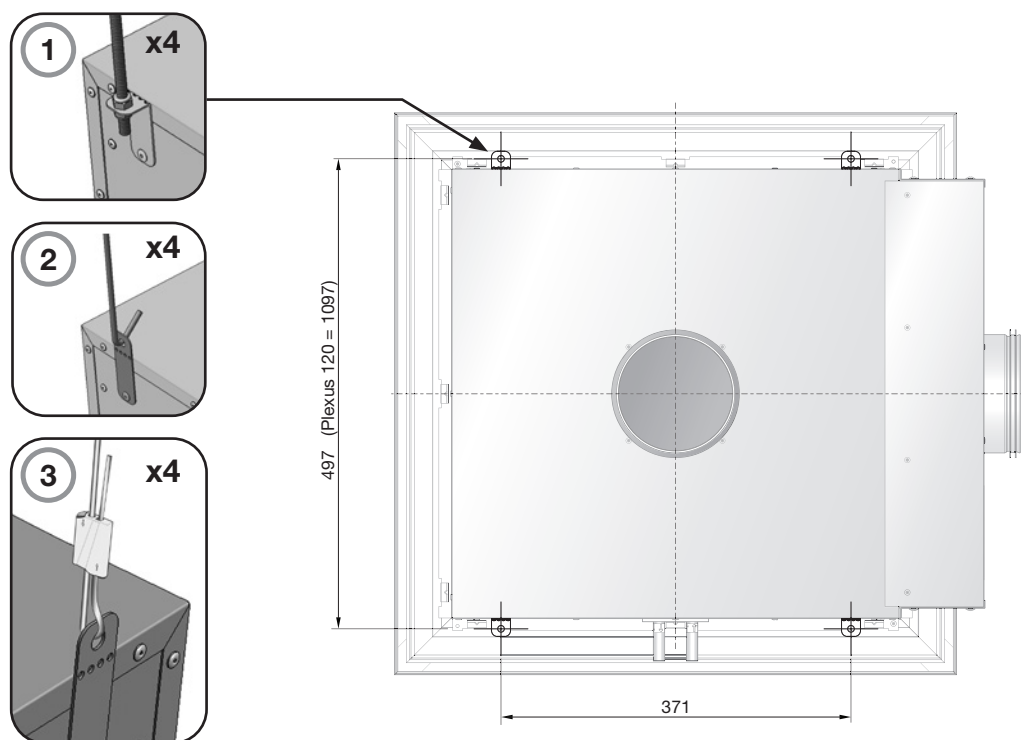
# Installation instruction

# Plexus

## 5.4 Preparation for installation on the product

The beam is prepared for installation by hangers (4 x per beam). 4 turnable/bendable brackets on the Plexus' models ensures the possibility to use different hanger systems.

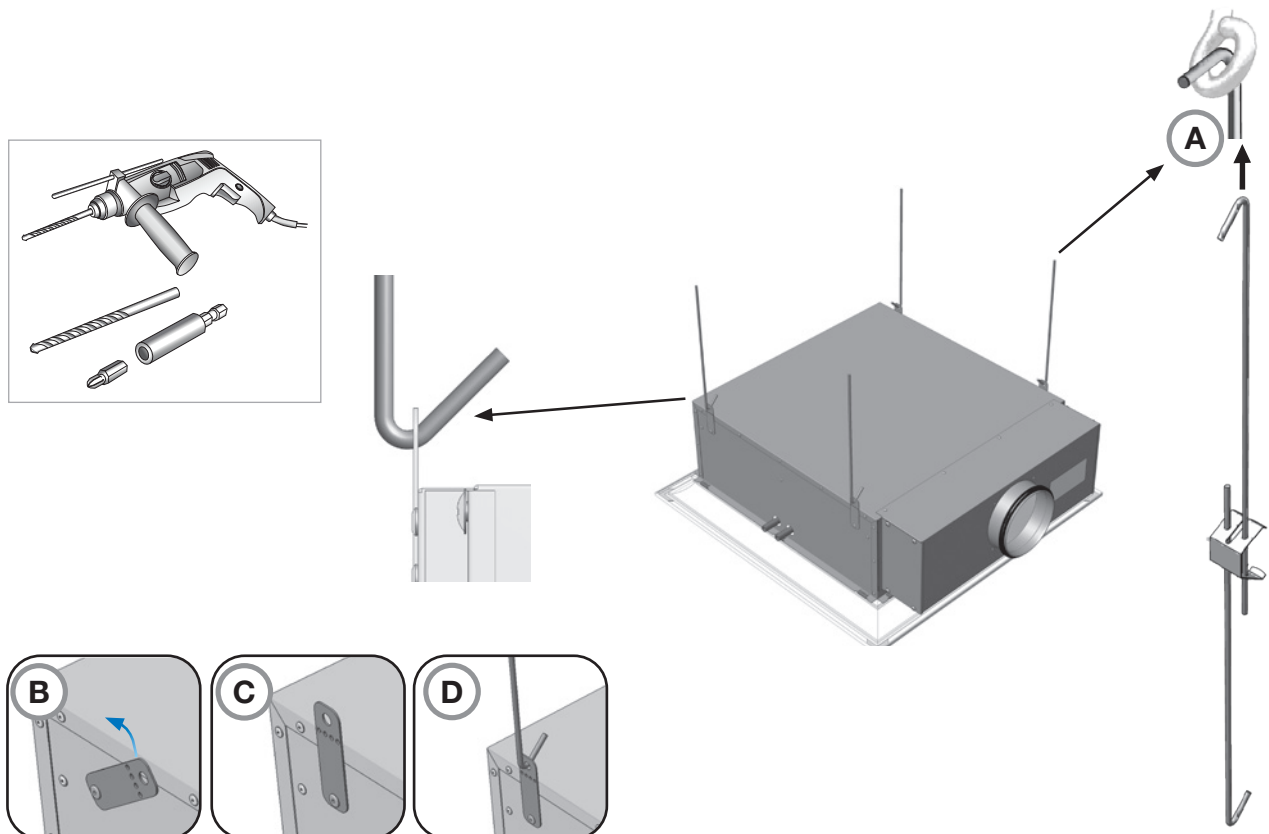
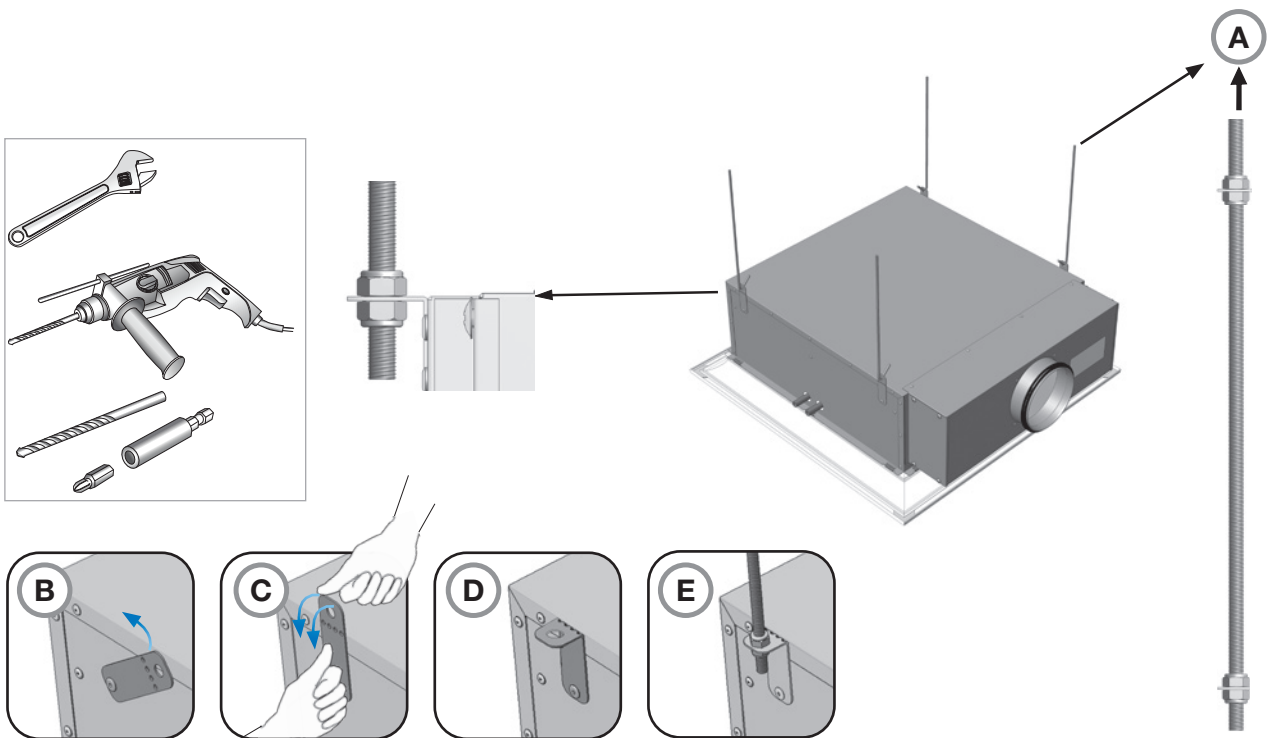
- |   |                                |                                  |
|---|--------------------------------|----------------------------------|
| 1 Threaded rods M8                      | <b>Plexus 60</b> : 371 x 497mm | <b>Plexus 120</b> : 371 x 1097mm |
| 2 Pendulum hangers (in different sizes) | : 371 x 477mm                  | : 371 x 1077mm                   |
| 3 Wiring hanger system                  | : 371 x 477mm                  | : 371 x 1077mm                   |



# Installation instruction

# Plexus

## 5.5 Basic steps of installing the product



# Installation instruction

# Plexus

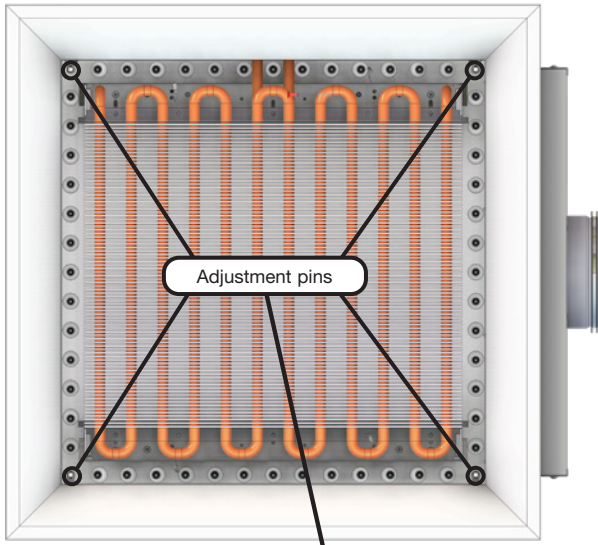
## 6. Adjustment and commissioning

### 6.1 Airflow and pressure

The JetCone System enables an easy and fast adjustment in both pressure and air volume (primary airflow rate) through the front side.

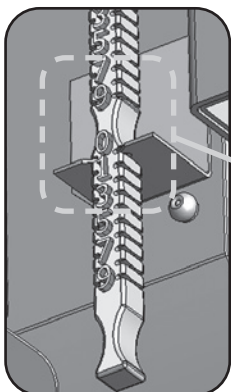
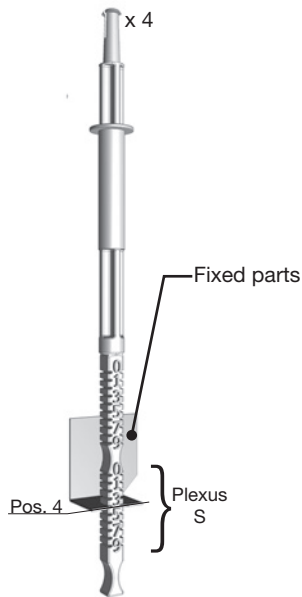
#### 6.1.1 Jetcone adjustment pins

Plexus S/SA seen from below with faceplate of.



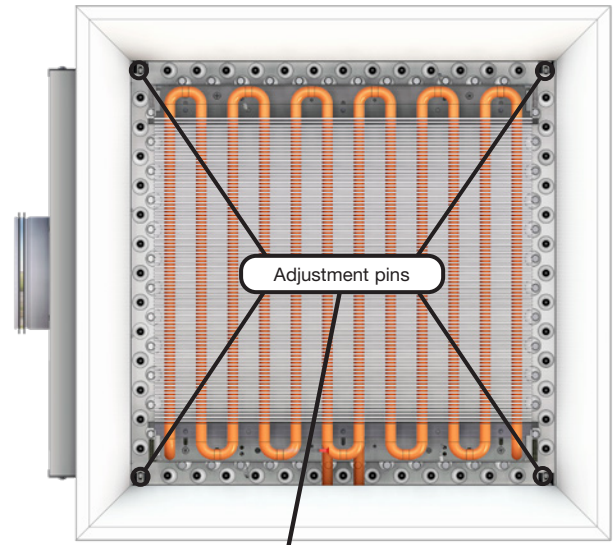
Plexus S/SA

x 4



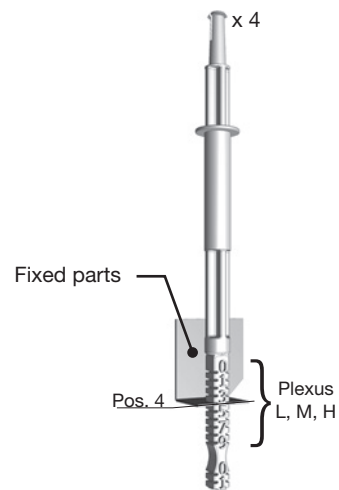
Plexus - S/SA  
pos. 0

Plexus L, M, H seen from below with faceplate of.

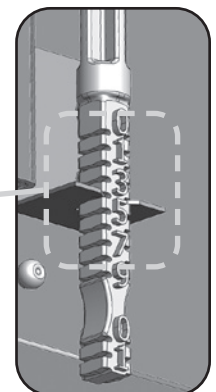


Plexus L, M, H

x 4



Plexus L - M - H  
pos. 4



# Installation instruction

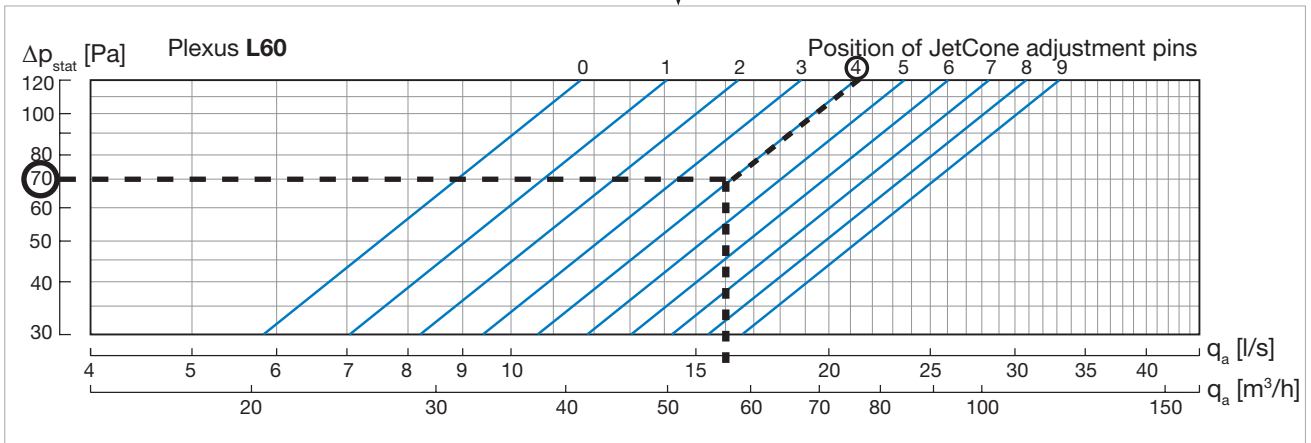
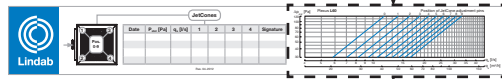
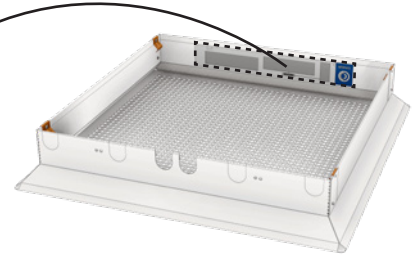
# Plexus

## 6.1.2 Finding values for JetCone pins

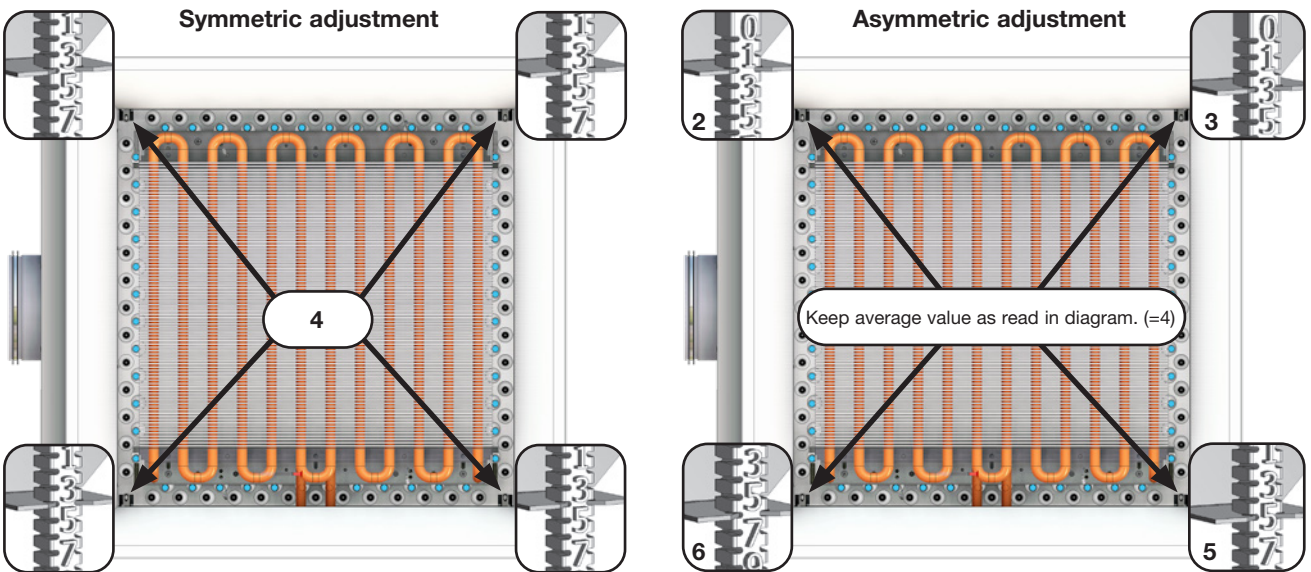
Example:

**Plexus-I-L-60-12-125-A5-70-16**

$\Delta p_{stat} = 70 \text{ Pa}$  (Static pressure).  
 $q_a = 16 \text{ (l/s)}$  (Primary airflow rate).



## 6.1.3 Adjusting air flow and pressure with JetCone pins



# Installation instruction

# Plexus

## 6.2 Adjustment of air distribution profile

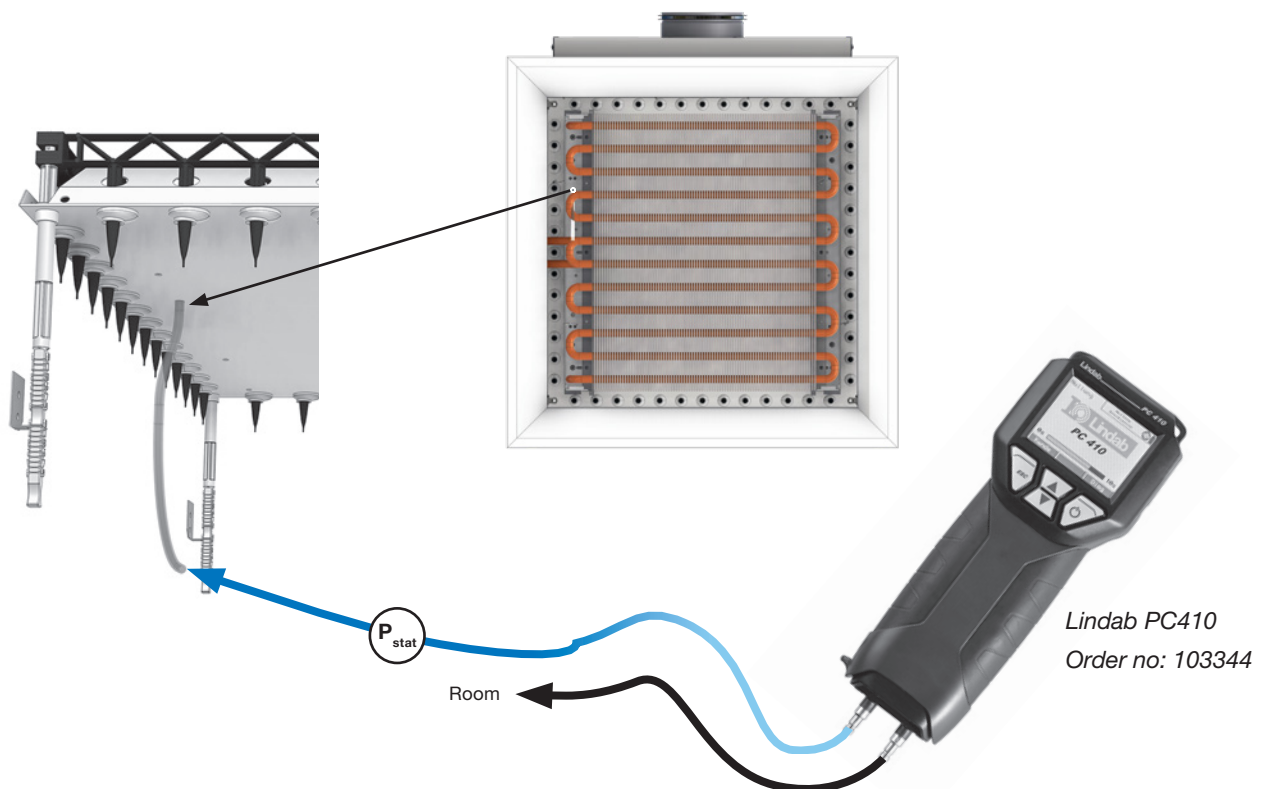
Plexus comes as standard (S) with fixed angled JetCone Nozzles, which provide 360° optimal air distribution.

## 6.3 Measuring air pressure and calculating the air flow

Before calculating the airflow, the static nozzle pressure must first be measured. The static nozzle pressure is the air pressure available at the nozzles.

### 6.3.1 Measuring static nozzle pressure and air pressure

- To measure the air pressure, a manometer, ( analogue or digital ) will be needed. Lindab recommends PC410.
- Insert the measuring tube onto the specialized measuring nozzle.
- Read of the static nozzle pressure from the manometer (PC410).



### 6.3.2 Calculating the actual air flow

- After measuring the static pressure, read the settings of the four JetCone adjustment pins to find the mean value of the pins.
- Locate the diagram inside the openable perforated faceplate, (also see next page), and use the static nozzle pressure and the mean value of the pins to find the current airflow.

### 6.3.3 Changing the actual air flow

- Measure the static nozzle pressure.
- Locate the air pressure/airflow diagram inside the openable perforated faceplate. (Also see diagrams on next page).
- Find the mean value of the 4 pins to reach the desired airflow, in the diagram. Use the static nozzle pressure and the desired airflow to find the mean value of the 4 pins.
- Adjust the 4 pins in the Plexus, so the mean value of the pins will correspond with the mean value found in the diagram.
- See example in 6.1.3, asymmetric pin setting:  $2 + 3 + 5 + 6 = 16/4 = 4$ . (Where (4) was the value read in diagram).

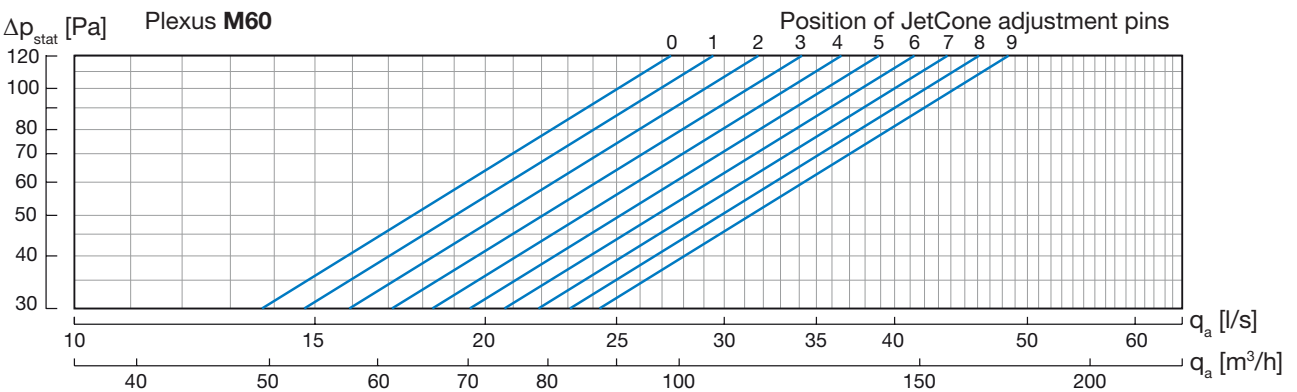
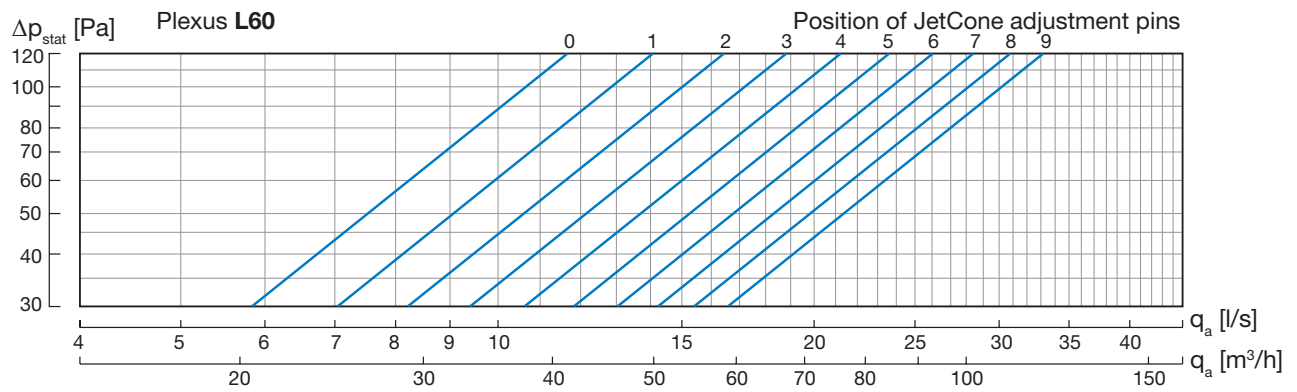
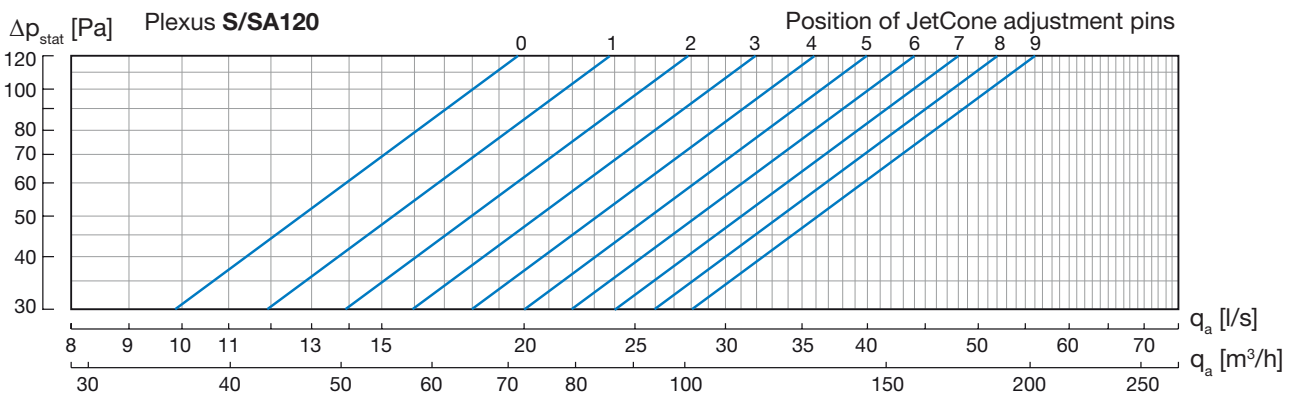
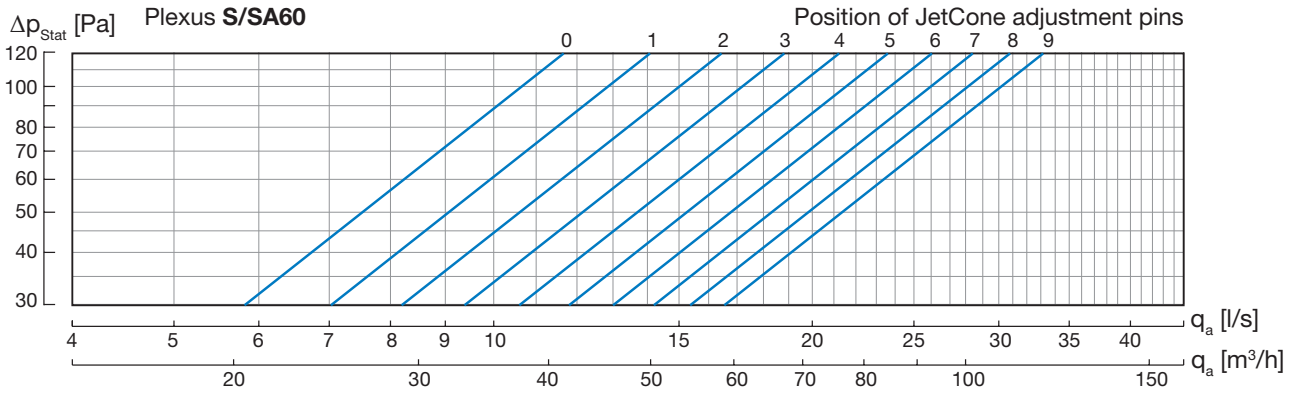
### 6.3.4 Changing the air distribution profile

See 6.1.3.

# Installation instruction

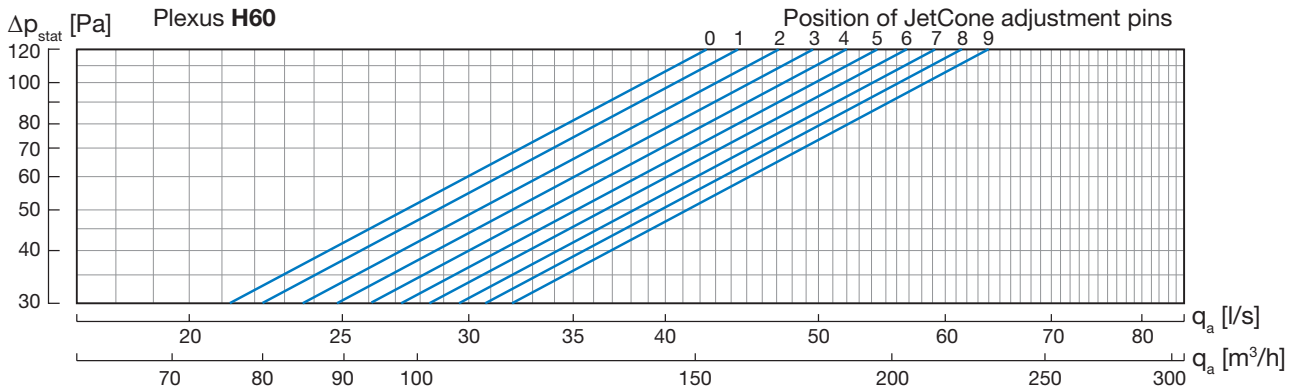
# Plexus

## 6.3.5 Plexus pressure / airflow diagrams



# Installation instruction

# Plexus



## 6.4 Water flow rate

### 6.4.1 Pre-setting of valves

All the integrated control valves (plus feature) are delivered not set. The presetting has to be done on site. For the presetting of valves, please see [LinFlow-A](#) (Angled) and [LinFlow-S](#) (Straight) water valves documentation.

### 6.4.2 Balancing strategy

Lindab recommends always balancing the water system to guarantee thermal comfort in all areas, to avoid noise nuisance problems and to save energy. A hydraulic balance is obvious to ensure that all the beams (panels or facade units) in the system will always be supplied with their required (planned) water flow rates (calculated with [LindQST\waterborne calculator](#)).

Lindab refers to the proportional method, where all beams (panels or facade units) are balanced to the same proportion of the requested water flow rate.



# Installation instruction

# Plexus

## 7. Maintenance

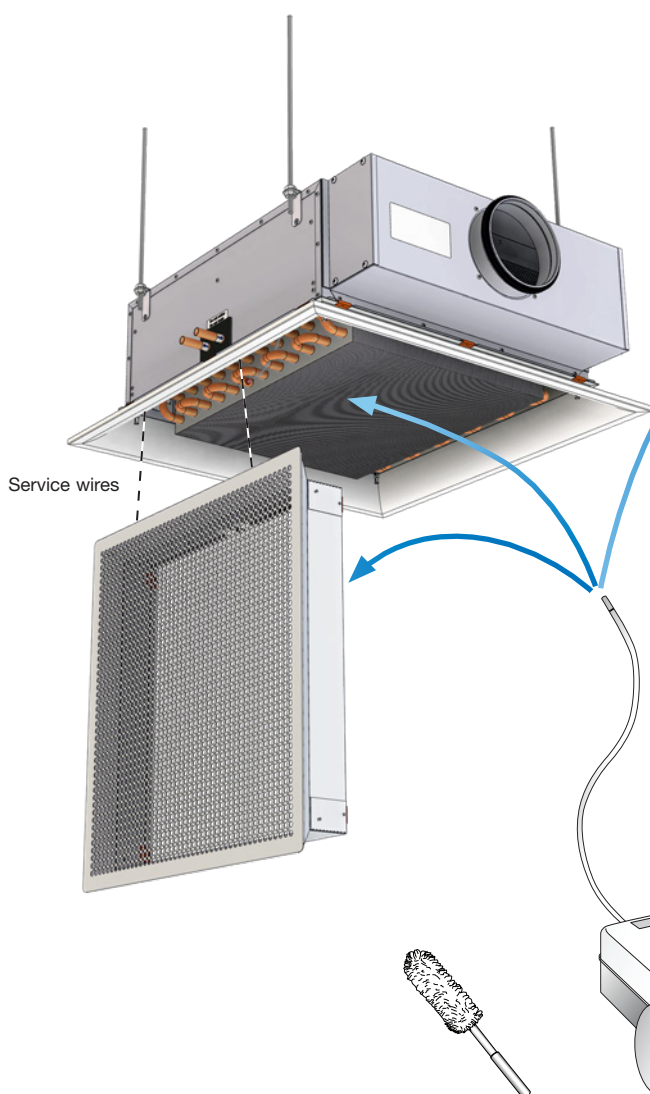
The interval of cleaning depends on the indoor environment where the beam is placed. Under optimal conditions the beams only need cleaning every 5 years.

- Open the inlet plate using no tools (7.2).
- Clean the battery downside and the inlet faceplate inner parts with a dust cleaner / vacuum cleaner.
- Only use lukewarm water and a mild detergent and a piece of wet cloth to clean the inlet face plate.
- Open the inspection hatch (7.3).
- Clean the air plenum chamber and air connection with a vacuum cleaner.
- Lower battery if water pipe connections are connected to system by flexhoses. ( Otherwise this is not possible, See 7.4).
- Clean the top side of the battery, nozzle plate, JetCones and the mixing chamber with a dust cleaner / vacuum cleaner.

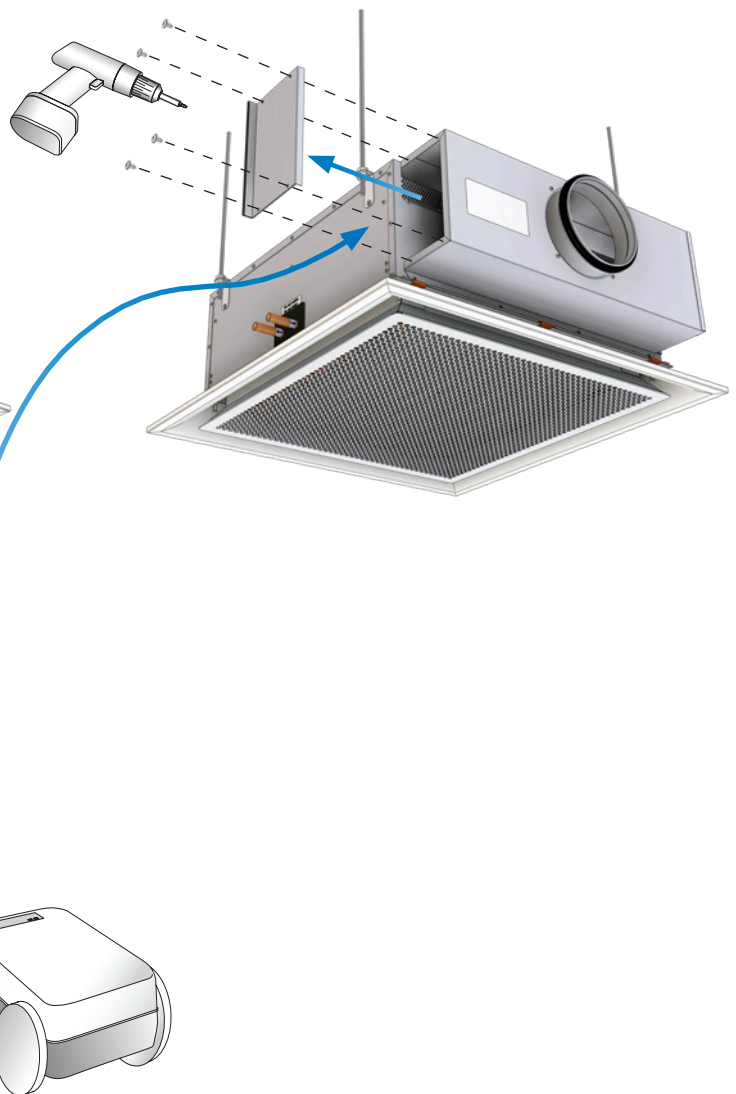
### 7.1 Remove the outlet front grille

Not relevant for Plexus.

### 7.2 Open inlet faceplate



### 7.3 Opening inspection hatch

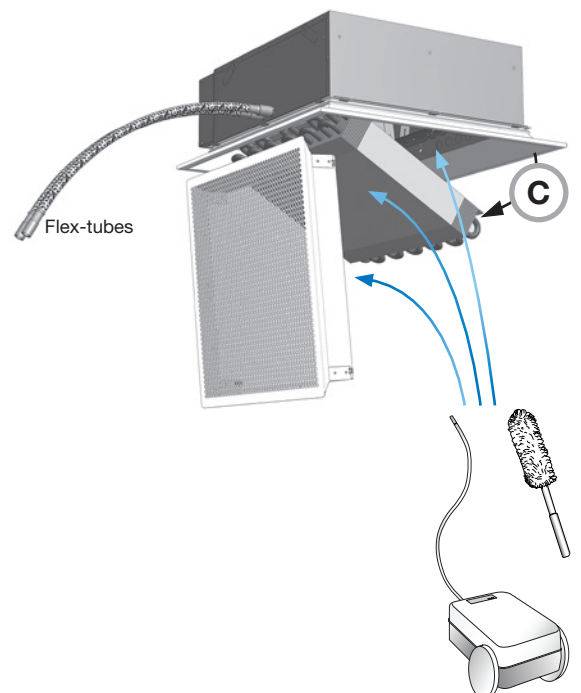
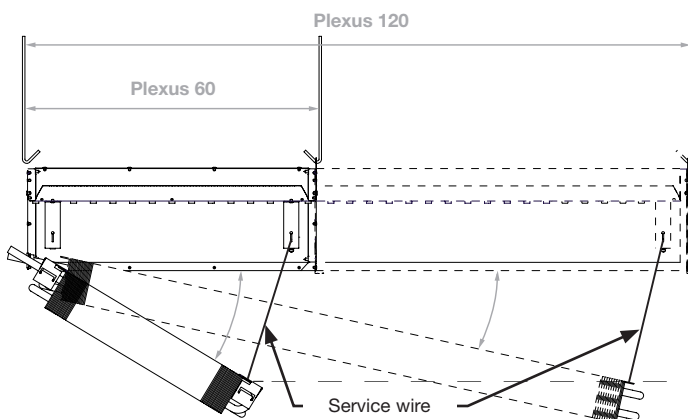
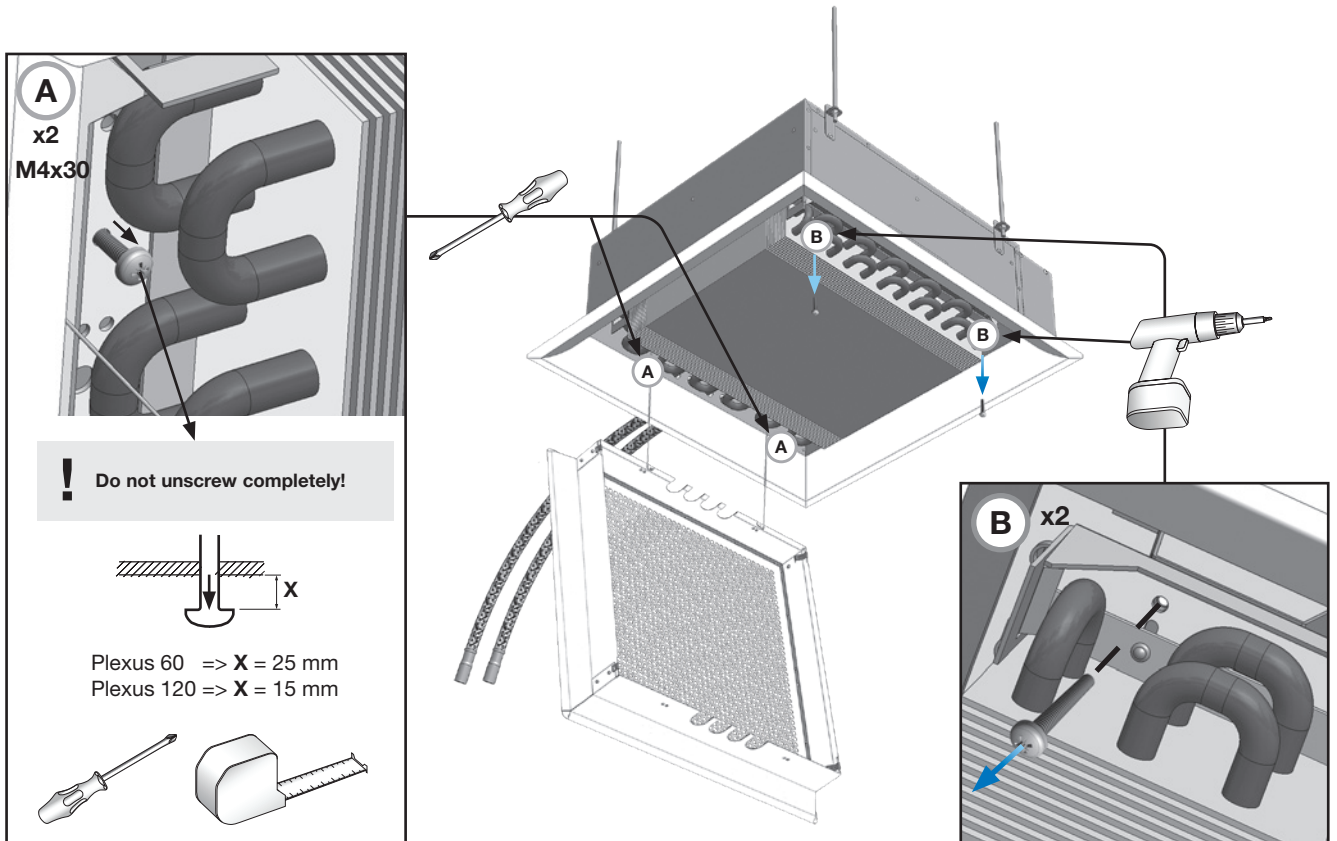


# Installation instruction

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## 7.4 Lower battery

Battery can only be lowered when the plus feature “dropdown battery” is ordered.



# Installation instruction

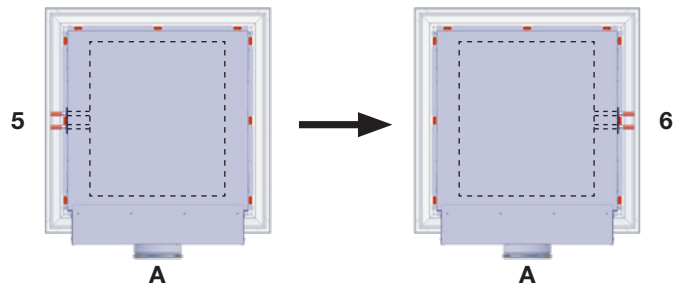
# Plexus

## 7.5 Turnable battery

The water battery can be turned easily on site to change e.g. water connection (A5) to (A6) or vice versa (only available for 2-pipe connections and models without plus features).

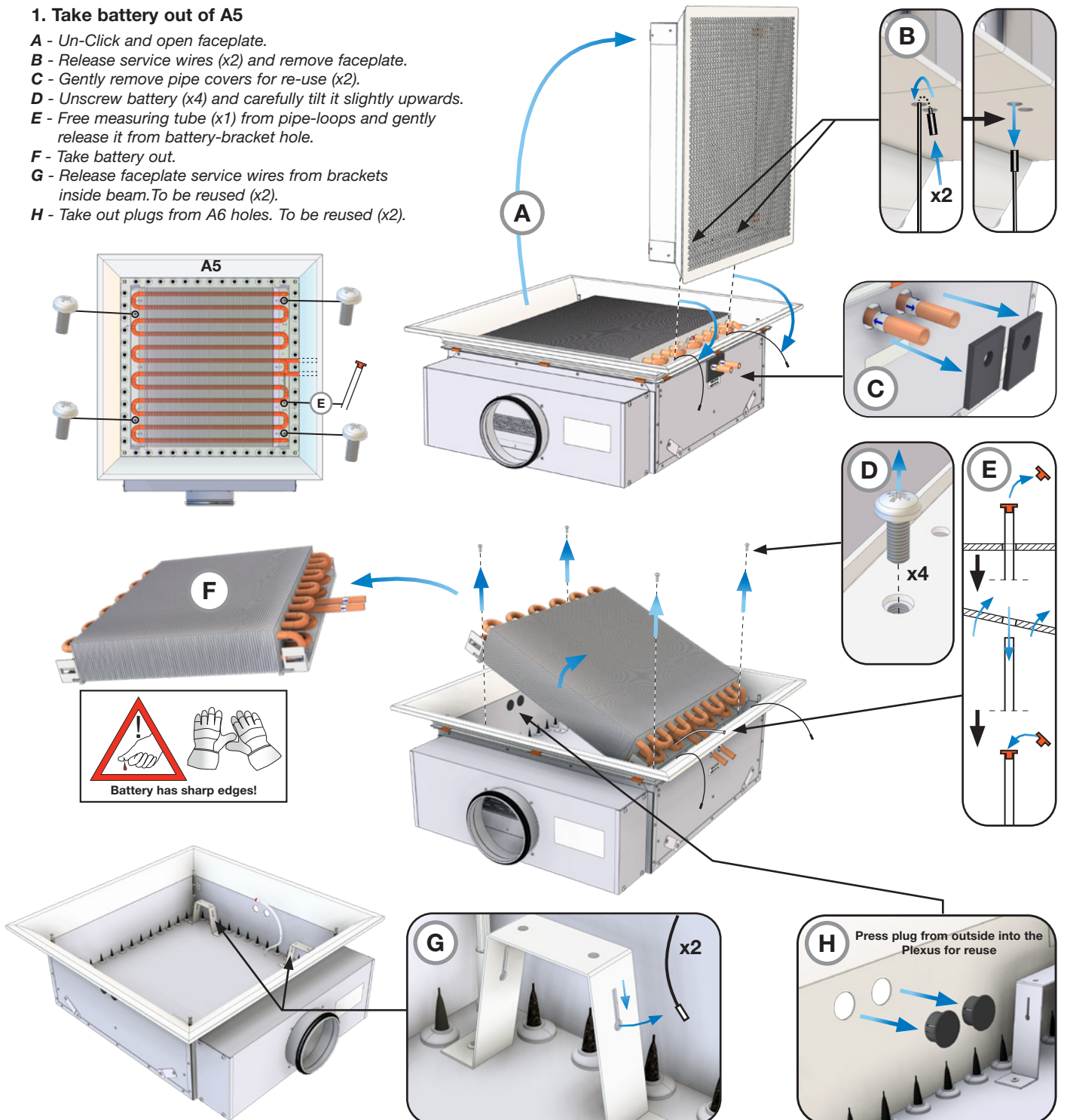
Re-use pipe-covers (C) and plastic plugs (H).

Lindab recommends to change battery before installation in ceiling.



### 1. Take battery out of A5

- A** - Un-Click and open faceplate.
- B** - Release service wires (x2) and remove faceplate.
- C** - Gently remove pipe covers for re-use (x2).
- D** - Unscrew battery (x4) and carefully tilt it slightly upwards.
- E** - Free measuring tube (x1) from pipe-loops and gently release it from battery-bracket hole.
- F** - Take battery out.
- G** - Release faceplate service wires from brackets inside beam. To be reused (x2).
- H** - Take out plugs from A6 holes. To be reused (x2).

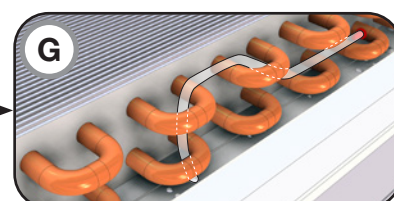
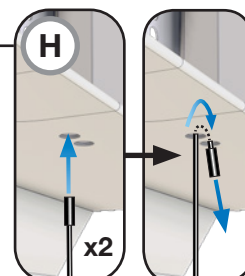
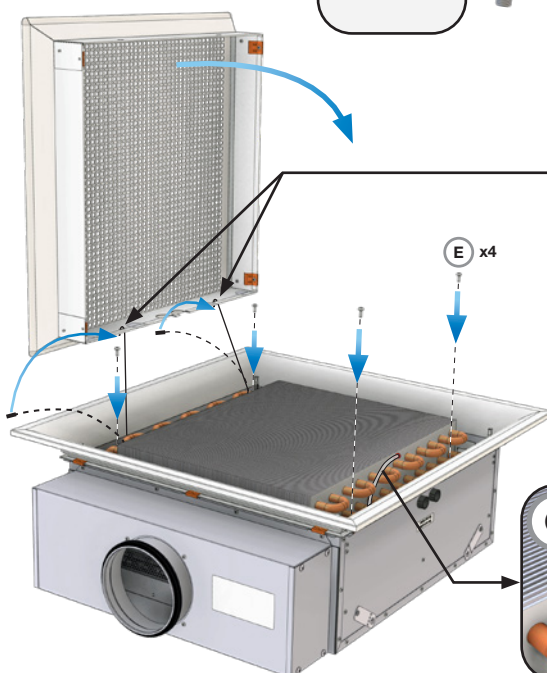
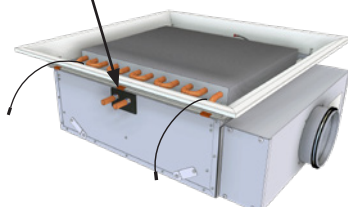
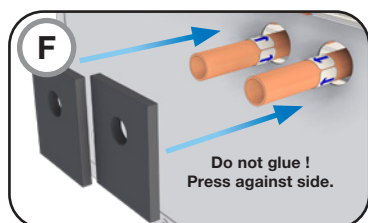
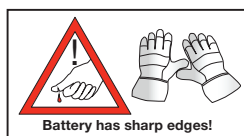
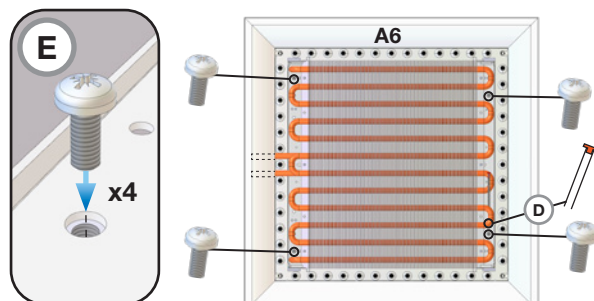
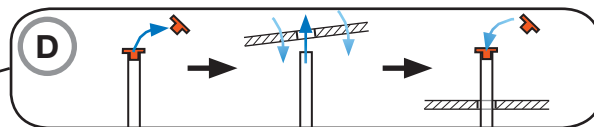
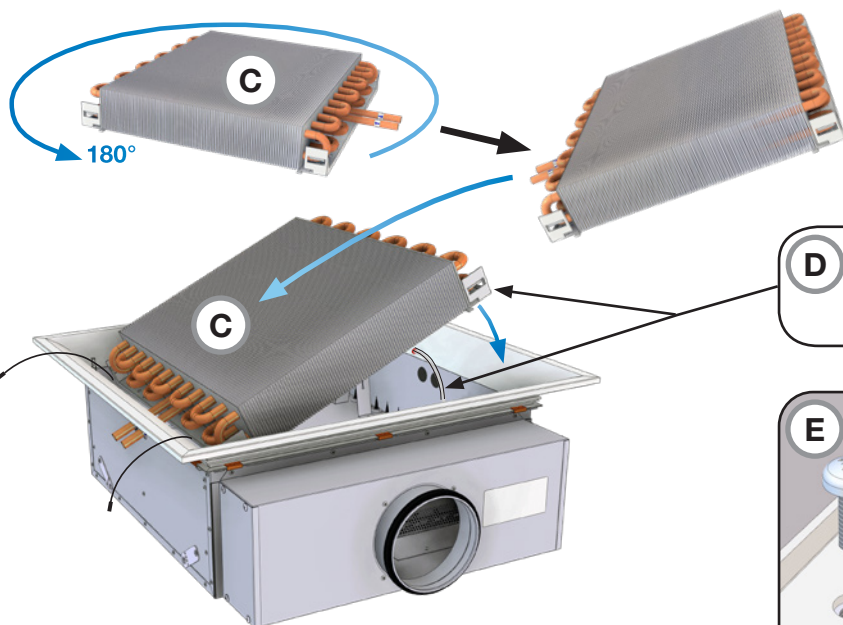
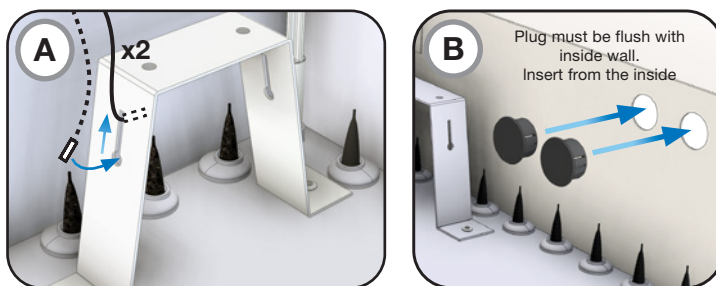


# Installation instruction

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## 2. Reinstall battery as an A6 model

- A** - Reattach faceplate service wires (x2) to brackets in A6 side inside beam.
- B** - Reinsert plugs (x2) in A5 pipe-holes.
- C** - Rotate battery 180 degrees and gently reinsert with inlet/outlet pipes first into A6 pipe holes.
- D** - While inserting and lowering battery, the measuring tube (x1) must be reinserted through correct hole in battery bracket.
- E** - Now lower battery into position and lock it with the 4 screws (x4).
- F** - Gently re-insert pipe covers on the inlet/outlet pipes
- G** - Arrange measuring tube around pipe loops so it will not dangle and touch faceplate when installed.
- H** - Mirror faceplate (from A5 position) so it will fit A6 configuration and reattach faceplate service wires to faceplate. The faceplate can now be closed and clicked on.



# Installation instruction

# Plexus

## 8. Accessories

Ask Lindab for the accessories mentioned in this document. Additional accessories (or additional dimensions) are available on request.\*\*

Order code	Order number
2-way Control valve LinFlow-S-12 straight - push on	686552
2-way Control valve LinFlow-A-12 angled - push on	686554
4 pcs Threaded rod M8 -100mm + 4 pcs z-brackets + 16 pcs screw nuts	on request
4 pcs Threaded rod M8 -500mm + 4 pcs z-brackets + 16 pcs screw nuts	on request
4 pcs Threaded rod M8 -1000mm + 4 pcs z-brackets + 16 pcs screw nuts	on request
Actuator A 40405 24 V on/off NC - 1m, non-halogen cable	684601
Actuator A 41405 24 V on/off NO - 1m, non-halogen cable	684603
Actuator APR 40405 0-10 V mod. NC, 1m, non-halogen cable	684667
Actuator APR 40405 0-10 V mod. NC, 1m, cable	684604
Adapter VA64 M28x1,5	686565
Aerator 12mm - tectite	647690
Ballofix Broen 12 mm with handle - shut-off valve	642663
Ballofix Broen 12 mm without handle - shut-off valve	642662
Copper insert 12 x 1,0 mm	884022
Flexible hose O2stopp_DN10 0,4m - JG12 push - JG12 push	686566
Flexible hose O2stopp_DN10 0,4m - JG12 push - straight end 12 mm	175984
Lindab FHS-2-1000 (incl. M8 drop-in anchor)	100089
Lindab PC 410	103344
Regula Combi see: "Accessories"	**
Regula Connect Card Basic	*/**
Regula Connect Card Multi	*/**
Regula Secura	**
Tectite angle 12 mm	884014
Tectite straight 12 mm	884050
Tectite demounting tool 12 mm	884087
Tectite demounting tool 12 mm, small	646881
Touch-up paint RAL 9003 - 25 ml	174759
Touch-up paint RAL 9010 - 25 ml	642531
Transformer 24V AC output	*/**

Table 4. Accessories

\*see: "[Regula Connect – What do I get?](#)"

\*\*see: "[Accessories](#)"



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