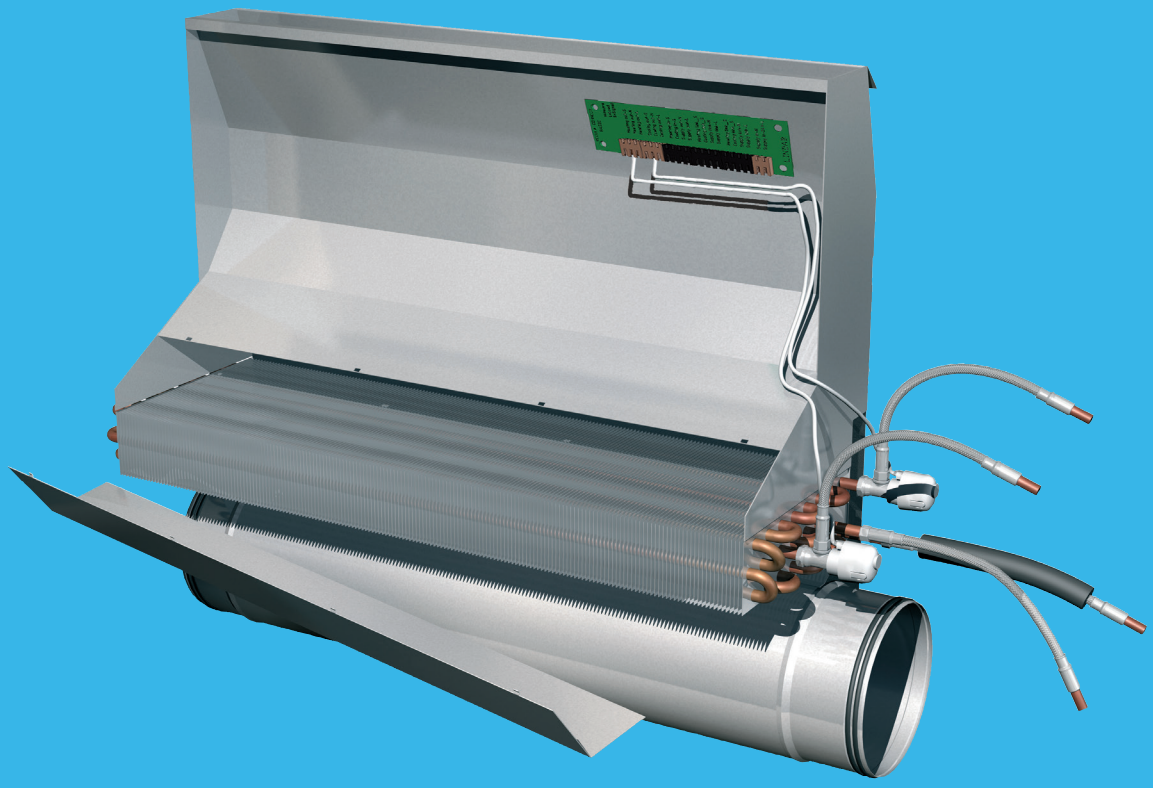

Lindab **Fasadium**

Service & Maintenance

Service & Maintenance Fasadium

1.0 Installation

1.1 Product description

Lindab's facade system Fasadium is an efficient system designed for ventilation, cooling and heating from the facade. Typical environments where Fasadium is used include, for example, schools, hospitals and offices. The Fasadium unit is placed at the building façade, preferably under a window sill.

1.2 Handling

The beam must be handled with care, ensuring that the beam does not sustain dents, scratches or bends during installation.

Always seek to lift the beam at multiple points.

- Do not lift in pipes.
- Do not lift in edges.
- Each beam is equipped with protective film to avoid any damage during transport and handling at building site. The film needs to be removed before commissioning the products.

1.3 Mounting instruction

- Please visit www.lindQST.com
  - Select Documentation Finder
  - Select "Fasadium"
  - Select "Mounting"

1.4 Air connection installation

The primary air supply should be connected with instructions from a ventilation specialist. Lindab's chilled beams can beneficially be used together with Lindab's Safe® duct systems.

1.5 Connection description water

Flow indication arrows are shown on the inlet and return pipes in order to assist the installer. If the beam has been ordered with integrated valves, a special direction of the flow must be upheld to ensure correct flow through the thermostatic valve. If the beam has been delivered without integrated valves, the flow can be reversed, depending on the location of the retrofitted valve. Please note the flow direction indicator on the valve to insure correct installation in relation to the desired flow.

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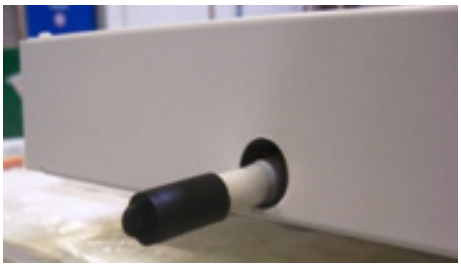
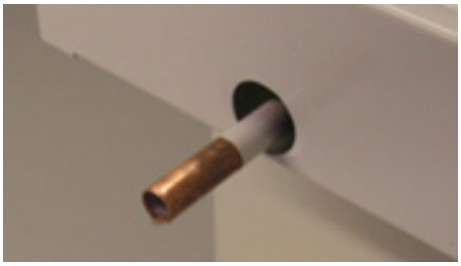
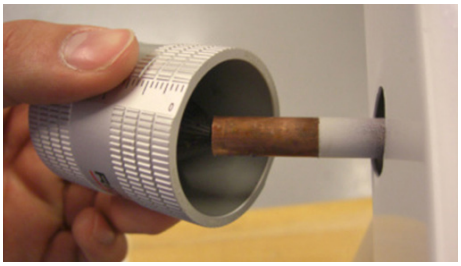
1.5.1 Push-on fittings

- Please ensure that all pipes and fittings are undamaged, as even small dents and scratches potentially pose a risk of leakage in the system. Always remember to do a pressure test after assembly of the pipe work.
- Both flow and return pipe is covered by a plastic or rubber protection cover, which should be removed before installation.



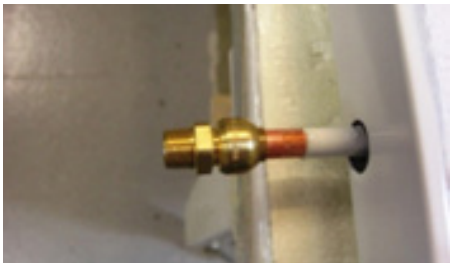
After removing the protection cover, make sure that the pipe is intact and undamaged, especially at the pipe end. Crocked or in other ways imperfect pipe ends will result in leaks. Deburr the pipe on the inside and the outside, using a deburring tool before installation.





- Mount a push-on fitting to the pipe. Make sure to press the fitting all the way onto the pipe. Consult the installation guide for the specific fitting for further details on proper installation.

Push-on fitting

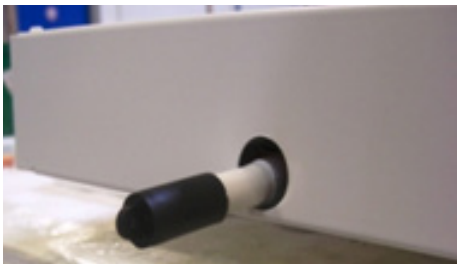


Push-on valve

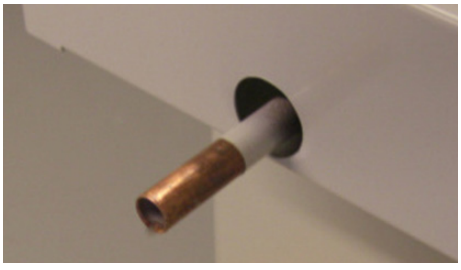
Notice! The connection pipes are internally soft-welded why it's not allowed to solder the beam to the pipes.

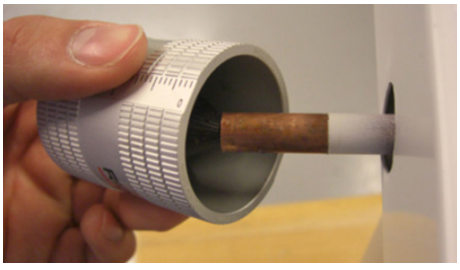
1.5.2 Compression fitting

- Please ensure that all pipes and fittings are undamaged, as even small dents and scratches potentially pose a risk of leakage in the system. Always remember to do a pressure test after assembly of the pipe work.
- 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 should be inserted into the pipe.
- Both flow and return pipe is covered by a plastic or rubber protection cover during transport, which must be removed before installation.

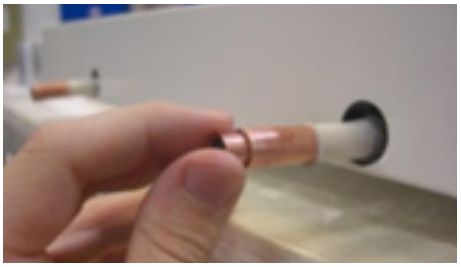


- After removing the protection cover, make sure that the pipe is intact and undamaged, especially at the pipe end. Crocked or in other ways imperfect pipe ends will result in leaks. Deburr the pipe on the inside and the outside, using a deburring tool before installation.

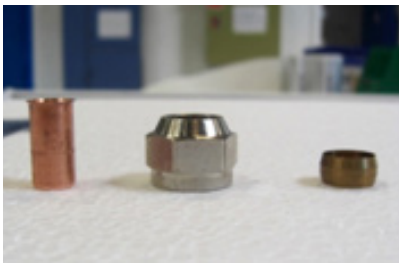




– The copper insert should be placed inside the pipe on the beam. Always support the copper pipe coil when inserting the copper insert into position.

– Mount a compression coupling and/or a valve to the pipe. Don't stress the nut too much, since this may crush the pipe.



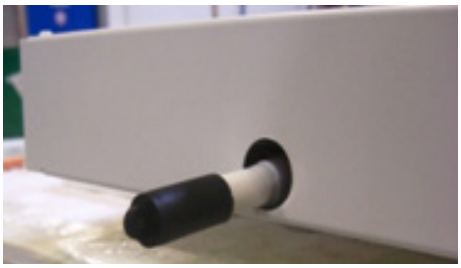
Notice! The connection pipes are internally soft-welded why it's not allowed to solder the beam to the pipes.

1.5.3 Flex hoses

Our flexible hoses can be used with both compression and Tectite fitting. We recommend using Tectite fittings, for easier and faster mounting.

– Please ensure that all pipes and fittings are undamaged, as even small dents and scratches potentially pose a risk of leakage in the system. Always remember to do a pressure test after assembly of the pipe work.

– Both flow and return pipe is covered by a plastic or rubber protection cover, which should be removed before installation.

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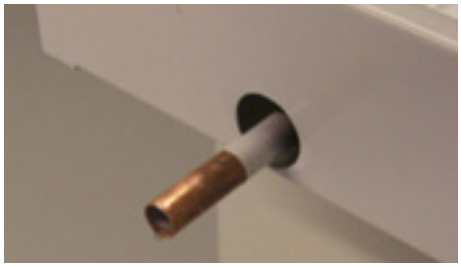
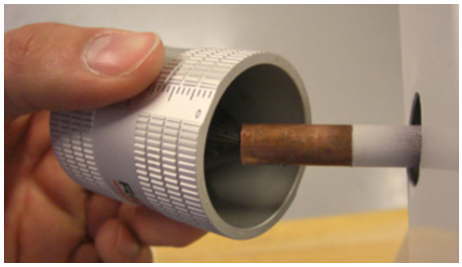
After removing the protection cover, make sure that the pipe is intact and undamaged, especially at the pipe end. Crocked or in other ways imperfect pipe ends will result in leaks. Deburr the pipe on the inside and the outside, using a deburring tool before installation.

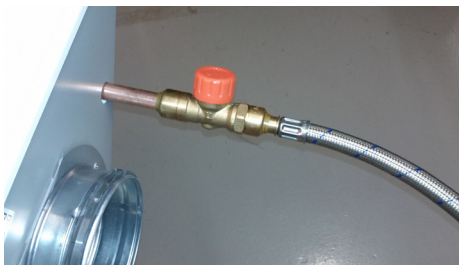




– Mount a push-on fitting to the pipe. Make sure to press the fitting all the way onto the pipe. After mounting the push-on fitting, mount the flexible hose. Make sure that the flexible hose is pushed fully into the fitting. Consult the installation guide for the specific fitting for further details on proper installation.

Push-on fitting

Push-on valve



Notice! The connection pipes are internally soft-welded why it's not allowed to solder the beam to the pipes.

2.0 Commissioning

2.1 Product labeling

Fig.1: Label location exterior (water connection)

On the label you'll find:

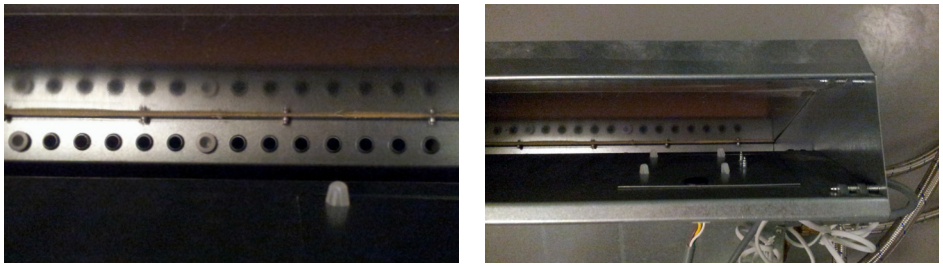
- Order: Order identification number.
- Pos: Order position.
- Product: Product configuration.
- Project: Project name.
- Mark: Marking noted on order.
- Nozzles: Number of nozzles.
- Plugs: Number of plugged nozzles.
- Product ID: Product number.
- Sign: To be signed when checked and commissioned on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

2.2 Measure air pressure and calculating the airflow.

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

2.2.1 Measure the static nozzle pressure.

- To measure the air pressure, a manometer, analog or digital (such as the Lindab PC410) will be needed.
- Insert the measuring tube into any of the nozzles.



- Read off the static nozzle pressure from the manometer.

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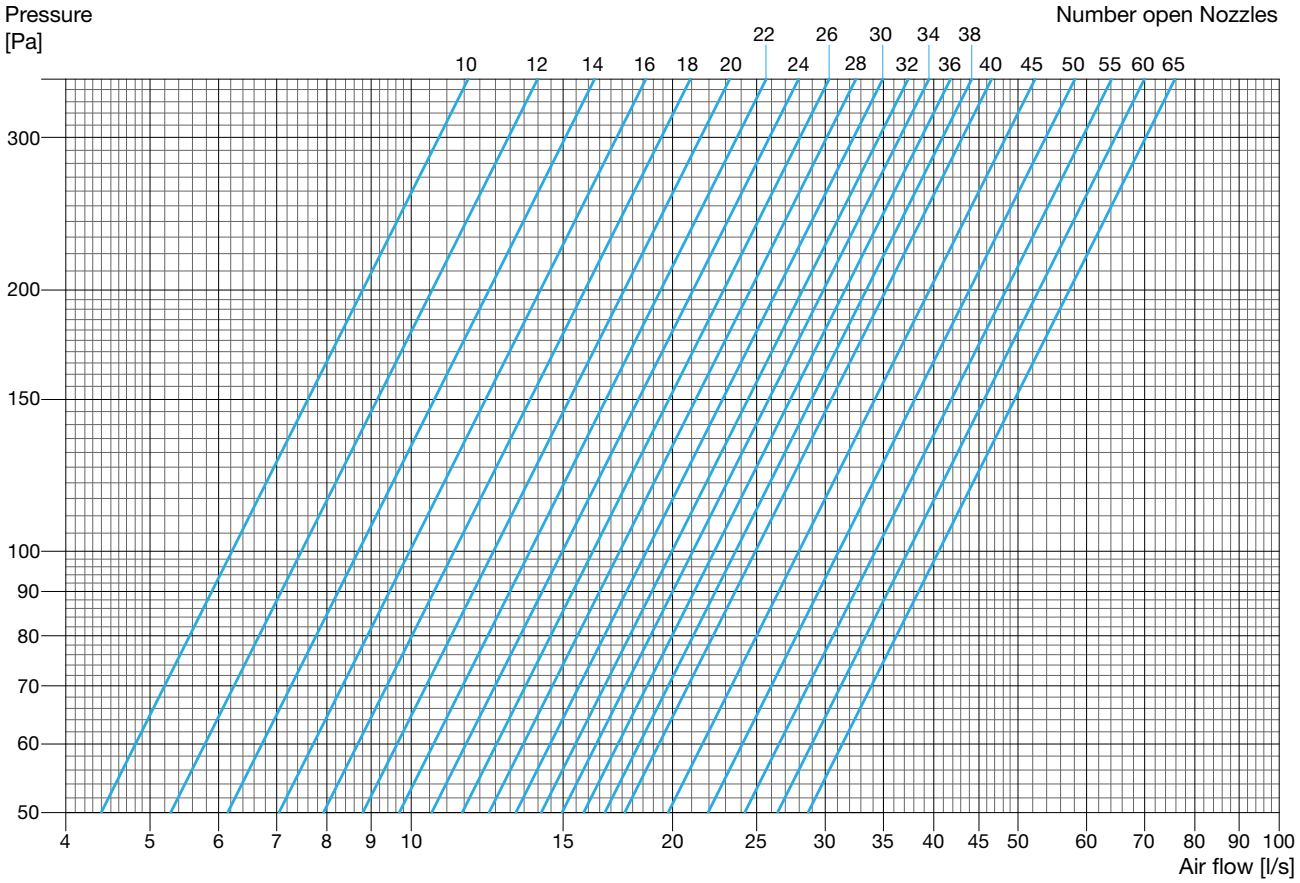
2.2.2 Calculating the airflow

- After measuring the static nozzle pressure, calculate the air flow per nozzle:
  $q=0.0622\cdot\sqrt{P}$
  q = air flow per nozzle
  P = static nozzle pressure

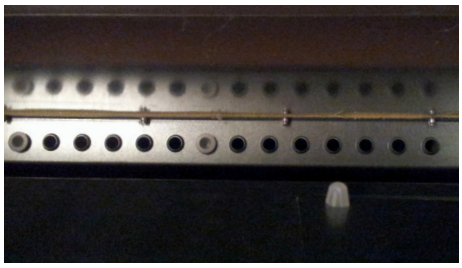
- After finding the air flow per nozzle, find the needed number of open nozzles:
  $q_{tot}/q=n_{open}$
  q_{tot} = total air flow
  n_{open} = open nozzles

- Alternatively, read off the needed number of nozzles in the diagram below.



2.3 Changing the airflow

- Measure the static nozzle pressure.
- Calculate the needed number of nozzles to be plugged, in order to reach the desired airflow at the available air pressure, as see the diagram above.
- Plug or unplug nozzles to reach the desired air flow. Using the Lindab Fasadium plug-tool.
- Dividing the plugs evenly, will result in an even air spread.



3.0 Maintenance

The interval of cleaning depends on the indoor environment where the beam is pladed.

Under optimal conditions the Fasadium beams only need cleaning every 5 years.

3.1 Cleaning instructions

- Remove the battery ocver plate.
- Clean underneath the battery and inside the air dispersal duct with a vacuum cleaner and a piece of wet cloth.
- Only use lukewarm water and a mild detergent.

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4.0 Product and system specification

4.1 Material data

	Fasadium 600	Fasadium 700	Fasadium 800	Fasadium 1000	Fasadium 1200	Fasadium 1500
Dry weight, kg/m, Ø100 duct	6.6	7.5	8.5	11.3	13.7	17.0
Dry weight, kg/m, Ø160 duct	7.0	8.0	9.0	12.0	14.5	18.0
Dry weight, kg/m, Ø200 duct	7.6	8.5	9.5	12.7	15.3	19.0
Water content, cooling, l.	0.57	0.17	0.83	1.15	1.42	1.83
Water content, heating, l.	0.13	0.16	0.18	0.10	0.13	0.16
Copper pipes, quality	EN 12735-2 CU-DHP					
Pressure class	PN10					

4.2 Environmental declaration

Please follow the links below

- Building product declaration
- Declaration of conformity
- Eurovent certificate

4.3 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.

4.4 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 should 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 should 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.
- There should be used in-line strainers to remove dirt particles from the water.
- If the water contains any additive inhibitor this must be appropriate to use with copper and solder.

4.5 Capacity test

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

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