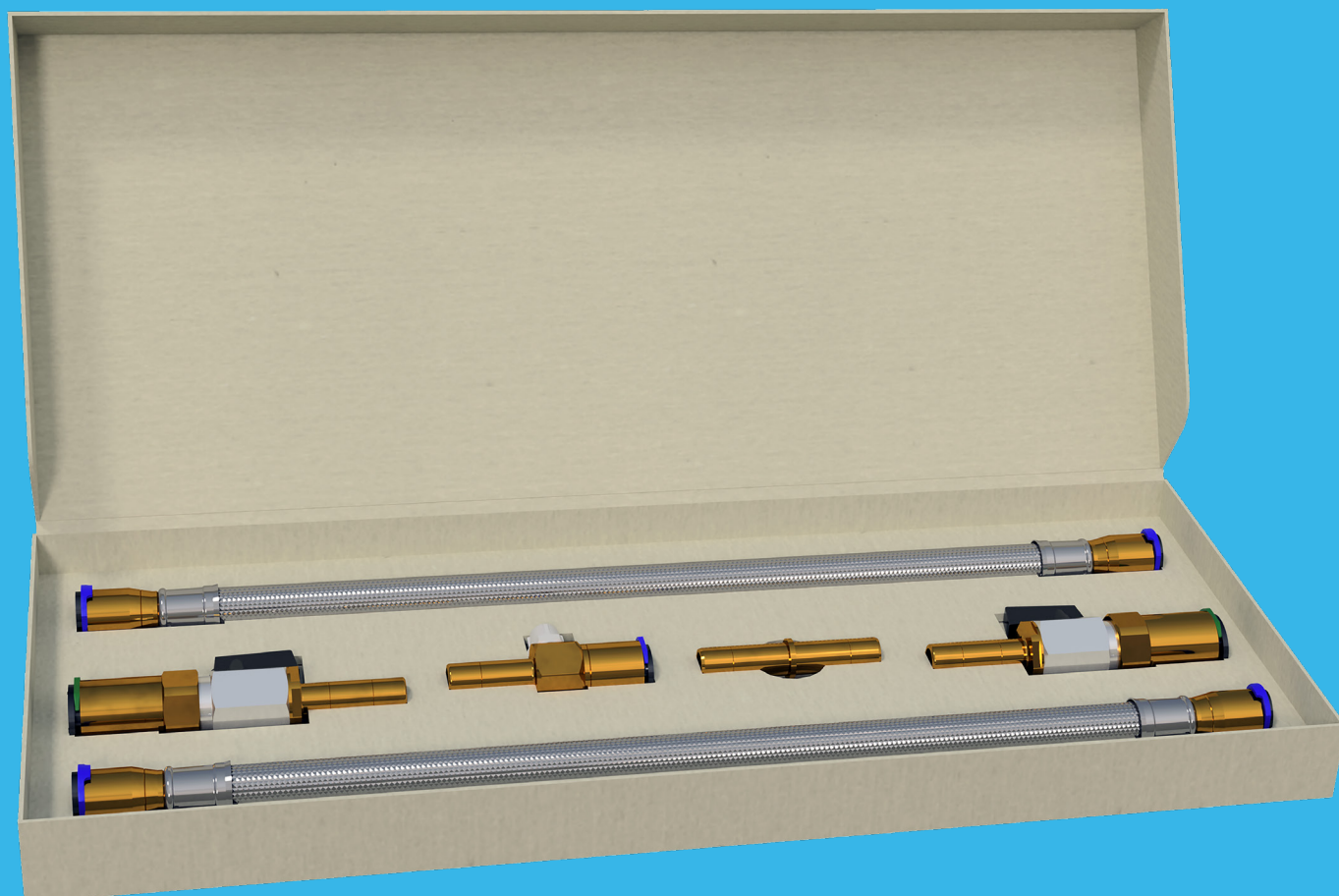




Lindab **LinCon**

Water pipe connection sets



Water pipe connection sets

LinCon

- for a simplified, safe and easy connection

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Water pipe connection sets

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The Lindab water connection set

Lindab's LinCon connection set, together with this document, will help you easily connect your favourable Lindab water product, no matter if it is an active or passive radiant chilled beam, a radiant panel or a facade unit.

The connection set is a well-chosen set of valuable accessories delivered in one box, guaranteeing the safest, oxygen impermeable, fastest and most effortless possibility to connect your Lindab water product to your central piping system. It offers you a way to connect with a minimum of connections as well as a minimal pressure loss and time effort.

It gives you the following advantages

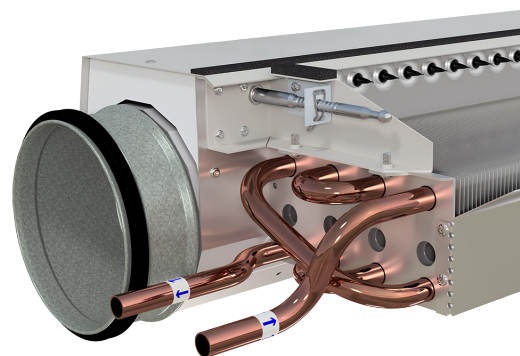
- Oxygen impermeable acc. to DIN 4726
- Easy to install & durable for air-conditioning technology
- Accurate and secure fitting to both unit and pipe system
- Less leakage risk, with fewest connection points
- Flexible butyl hoses with O₂-barrier
- Toolless and fastest installation and de-installation
- Accurate installation instructions
- Separation of structure-borne sound between pipe system and unit
- Height levelling between water pipe system and unit
- Easy separation of a single unit from a system
- Easy pressure release over the aerator after closing of shut-off valves
- Flexibility in the change of piping direction

The Lindab connection set are an additional accessory to the factory pre-installed plus features which can be optional ordered with every active chilled beam such as:

- LinFlow - 2-way valve with motorized thermostatic actuator
- Regula Connect - control card for easy connection to regulation unit and sensors
- Regula Secura - density protection

Water connection set for 2-pipe application

The connection set is designed to connect one water product with a 2-pipe connection (cooling or heating only) to the main water system.

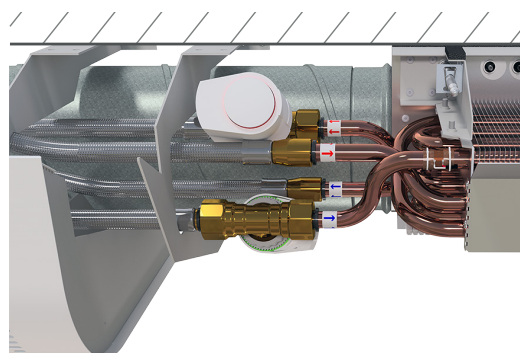


Picture 1. 2-pipe water connection (Plafond XD).

Water connection set for 4-pipe application and connection

For a 4-pipe connection, for example cooling and heating in one unit, you just need to consider two connection sets.

If 2-way valves with push fittings (LinFlow-S-12 or A-12) are directly placed enclosed on the water connection, the connection set contains a nipple for easy connection of the flexible hose.



Picture 2. 4-pipe water connection with 2x Linflow-S valves and flexible hoses (Plafond XD).

Water pipe connection sets

LinCon

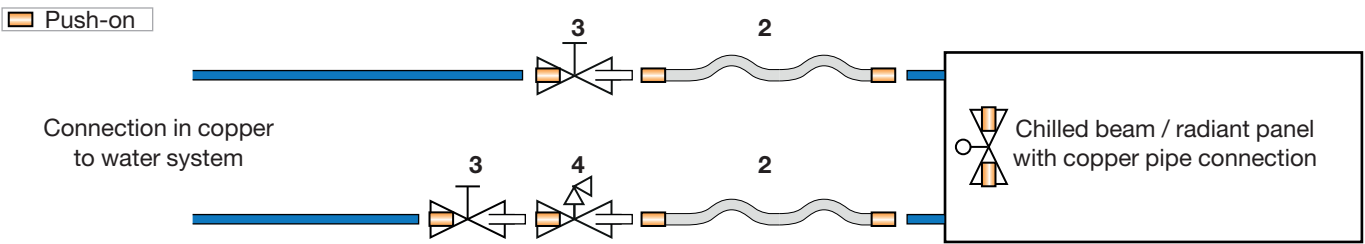
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The connection set basically covers two general applications

The following schemes show the components included and the two general applications.

1. Connection to a 2-pipe unit - with integrated 2-way valve

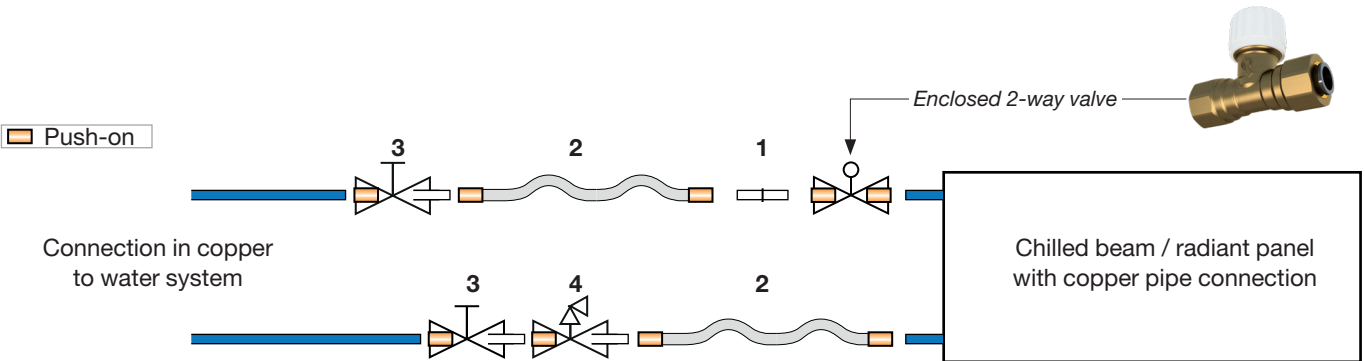
The direct connection of a unit to the in- and outlet piping (the 2-way control valve is integrated in the unit as a plus feature).



Picture 3. Connection to a 2-pipe unit - with integrated 2-way valve.

2. Connection to a 2-pipe unit - with enclosed 2-way valve

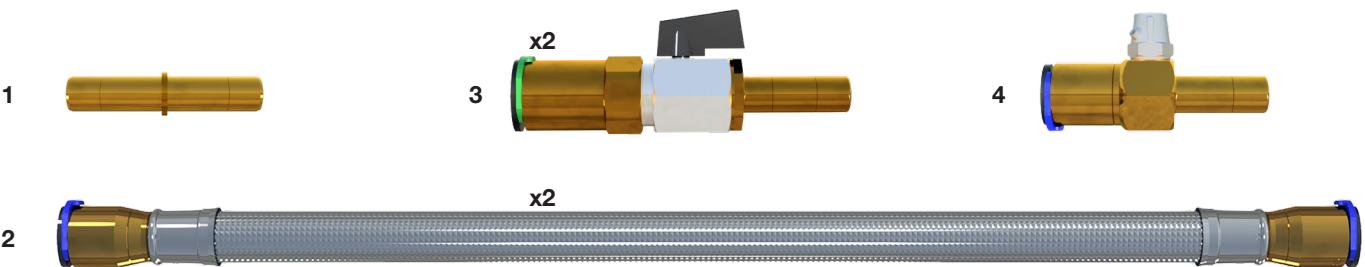
The 2-way control valve is placed on the outlet pipe, enclosed directly in front of the unit. Therefore, the connection set contains a straight nipple to be used when a flexible is not pushed on the (male) water inlet but into the (female) e. g. LinFlow 2-way valve.



Picture 4. Connection to a 2-pipe unit - with enclosed 2-way valve.

Position	Pieces	Article
1	1	Double pipe socket, brass, straight
2	2	Flexible hose, OXYBan, DN 12, 40 cm, push - push
3	2	Ball valve, with handle bar, push - straight
4	1	Air vent, push - straight

Table 1. Components included.



Picture 5. Components included.

Water pipe connection sets

LinCon

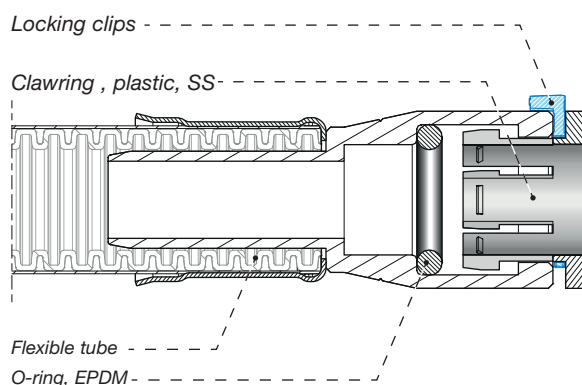
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Lindab push fittings

Lindab uses push-fit connections both for all the chosen components of the connection sets, in their offer of flexible hoses and the Lindab 2-way control valve LinFlow.

The tool-free detachable connectors, of these LinCon sets are manufactured by Lindner Armaturen and are tested in accordance with **DVGW W534, DIN EN 1254-6**.

Each push-fit connection comes with a locking clip.



Picture 6. Section view of Lindab push fittings.

The fittings for permanently tight push-fit connections are suitable for:

Copper pipe according to **DIN EN 1057** and **DIN EN 12449**, DVGW worksheet **GW 392**.

Fittings made of brass or red brass

- A locking groove is always recommended.
- From a hardness ≥ 120 HV 1/10, a locking groove is mandatory.

Fittings made of stainless steel or with a surface coating (e.g. chrome)

- A locking groove is mandatory.

Plastic pipes, e.g. made of PA or PE

- If approved by the manufacturer for push-fit fittings (Support sleeves may be required).

Field of application

- For heating and cooling water with and without frost protection
- Building services, building air conditioning
- Industry, vehicle and shipbuilding

If the medium flowing through is not drinking water, heating water in accordance with VDI 2035 or if the operating temperature exceeds > 65 °C, other sealing materials must be used and **LinCon must not be used!**

A tolerance allowance of $+ 0.05 / - 0.10$ needs to be made on the outer diameter of the mating component in the range of $\varnothing 10 - \varnothing 15$ mm.

Available in the following sizes: $\varnothing 10 - 12 - 15$ mm.

Observe separate installation instructions!

After completing fitting work, test all installations for possible leakage. On account of its special design, the push fitting is not to be integrated into equipotential bonding system.

The push-fit connections are suitable for the following pressure and temperature ranges:

Diameter	Max. operating pressure	Max. temperature
mm	bar	°C
10, 12, 15	10	+ 23
	7	+ 65

Table 2. Suitable pressure and temperature ranges.



Picture 7. Components of LinCon sets.

Water pipe connection sets

- for a simplified, safe and easy connection

Flexible hoses

Lindab uses flexible hoses type OXYBan. Due to its oxygen impermeability OXYBan is ideally suited for the connection of cooling and heating in air conditioning systems within a temperature range of the push fittings ([see field of application](#)).

For actual pressure drop calculation please use LindQST / [Waterborne calculator](#).

Material features

The hose material OXYban is free of any halogenes, flexibiliser and heavy metals. It has been examined for its oxygen diffusion behaviour in accordance with **DIN 4726**.

In order to be classified as oxygen impermeable according to DIN, a maximum of 0.32 mg of oxygen per m² and per day is licit to diffuse into the inside of the hose.

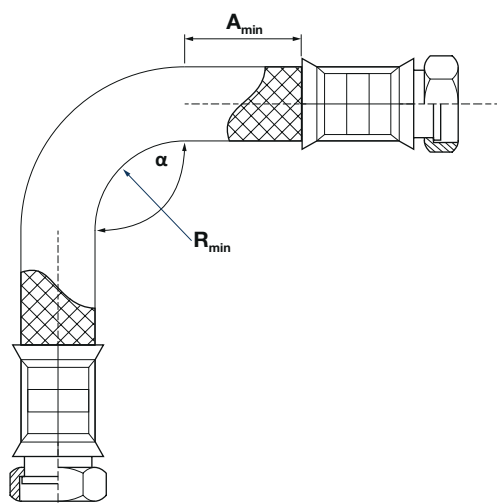
Oxyban undercuts this limit with an amount of only 0.11 mg of oxygen per m² and per day (± 0.013 g/m³/day at a pipe diameter DN 8 and a testing temperature of approx. 40 °C).

The exclusion of oxygen stops corrosion as well as the growth of bacteria and consequently prevents the silting in heating, cooling and air-conditioning systems.

Additionally, the OXYban hose material shows a vacuum resistance up to 0.1 mbar even with the smallest bending radiuses and temperatures of up to + 80 °C *.

The flexible hoses of this connection set comes independent from the connection diameter in the size DN 12, and in a length of 40 cm, with:

* The max. operating temperature according to the push connectors is 65 °C!



Picture 9. Flexible hoses, minimum bend radius.

Inner diameter	mm	11.1
Outside diameter		16.5
Wall thickness		2.7
Max. operating temperature	°C	See field of application
Max. operating pressure	bar	

Table 3. Flexible hose material data.



Size	A / R _{min}	L _{min} α = 90°	L _{min} α = 180°	L _{min} α = 360°
	mm	mm	mm	mm
DN 12	40	205	280	430 **

Table 4. Bending radius of flexible hoses.

**** The length L of the containing flexible hoses is 400 mm, therefore a 360 ° bending can not be achieved!**

All quotations (excluding diameter) are minimum measurements and shall be exceeded when possible.

The guarantee shall apply only if the directions mentioned above are observed exactly as well as the installation has been carried out professionally and in accordance with current regulations. Corrosive, electro-chemical and bacteriological strain shall be avoided by appropriate protection measures.

Sound Emission

Data available on request!



Picture 8. Flexible hoses.

Water pipe connection sets

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LinCon

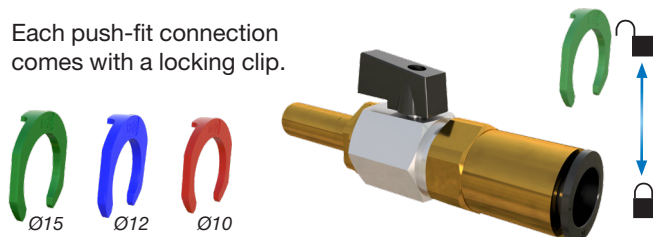
Ball valve with handle bar (shut-off valve)

Lindab uses mini-ball valves with handle bar as shut-off valves.

Body with push-fit connector and straight connector (pipe connector).

Must be used in fully closed or fully opened position only
- no partial opening!

Each push-fit connection comes with a locking clip.

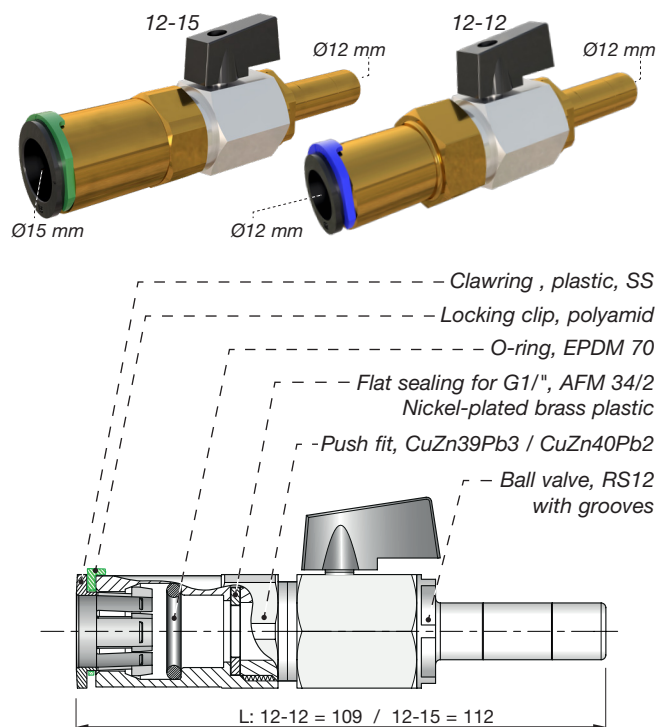


Picture 10. Locking clips.

Material features

Push-fit connection Ø12 and 15 mm are for the following pressure and temperature ranges:

Pressure areas: 10 bar/ +23 °C, 7 bar/ +65 °C.



Picture 11. Section view of ball valve with handle bar.

Airvent—Connector with airbleeder

Lindab uses special connector with airbleeder as Airvent.

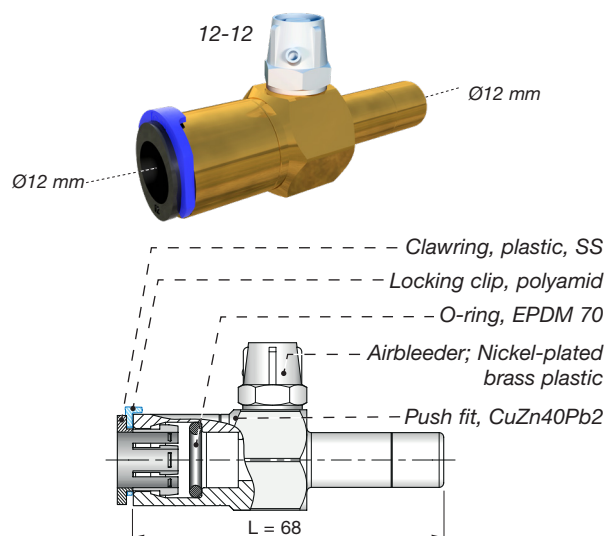
Body with push-fit connector and straight connector (pipe connector).

Aerator 1/8", turnable fixed with metal glue.

Material features

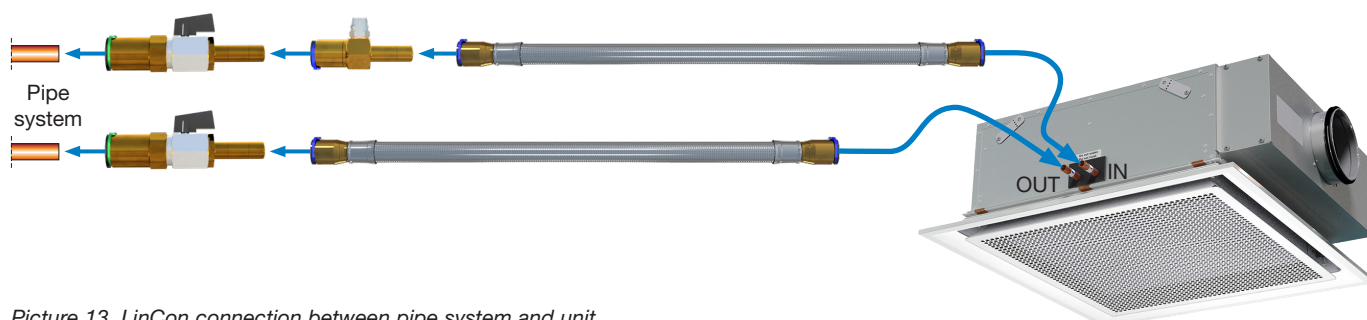
Push-fit connection Ø12 mm is for the following pressure and temperature ranges:

Pressure areas: 10 bar/ +23 °C, 7 bar/ +65 °C.



Picture 12. Section view of Air vent - Connector with airbleeder.

Connection Set LinCon— Simple connection between a unit and the pipe system



Picture 13. LinCon connection between pipe system and unit

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LinCon

Sizes and dimensions of LinCon connection sets

The following sizes are available:

Dimensions		Order code	Item number
Lindab unit, pipe in- and outlet Ø [mm]	Water pipe system Ø [mm]	Water connection set	
10	15	LinCon-10-15	180481
12	12	LinCon-12-12	180480
12	15	LinCon-12-15	180479
15	15	LinCon-15-15	180482

Table 5. Sizes and dimensions of LinCon connection sets.

LinCon component of each set are adapted to the dimension sizes of the connections.

Water in- and outlet connection sizes Lindab water products

The water products from Lindab have the following dimensions for in- and outlets:

Units (Lindab water products)		Order code	Item number
Name	Dimensions, in- and outlet pipes [mm]	Water connection set	
Architect, Atrium (12), Carat (12), Celo, Fasadium, Loggis (12), Munio, Plafond XD, Plexus, Premax (12), Premum, Professor XP, Solus	12	LinCon-12-12	180480
		LinCon-12-15	180479
Atrium (10), Atrium Plana, Carat (10), Loggia (10)	10 *	LinCon-10-15	180481
Atrium (15), Carat (15), Loggia (15), Premax (15)	15 **	LinCon-15-15	180482

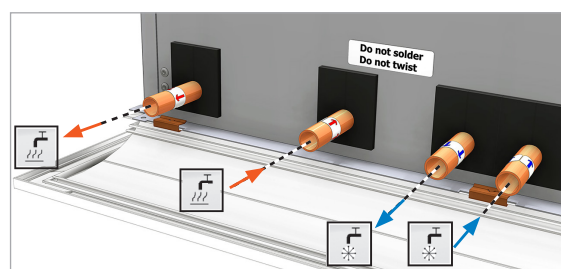
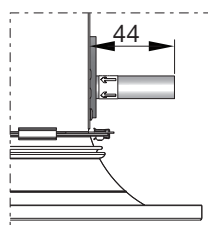
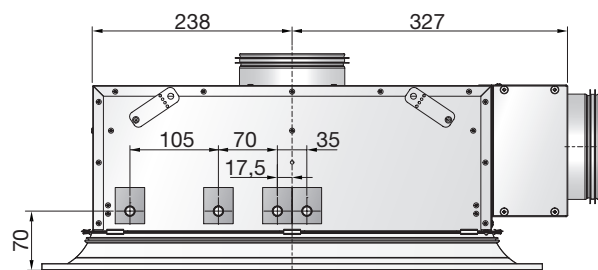
Table 6. Sizes and dimensions of LinCon connection sets.

For detailed information about the exact location of in- and outlet piping for 2-pipe (cooling- or heating) and 4-pipe (cooling and heating) for Lindab water products, please refer to www.Lindab.com/thermal-comfort-ventilation.

* In combination with a two way valve, a [LinFlow S-12](#) should be ordered and placed after the flexible hose using the nipple!

** In combination with a two way valve, a [LinFlow S-15](#) should be ordered!

Example showing location of water in- and outlet connections (Plexus I-60, 4-pipe)



Picture 14. Plexus-IS-60-A5, with 4-pipe connection.

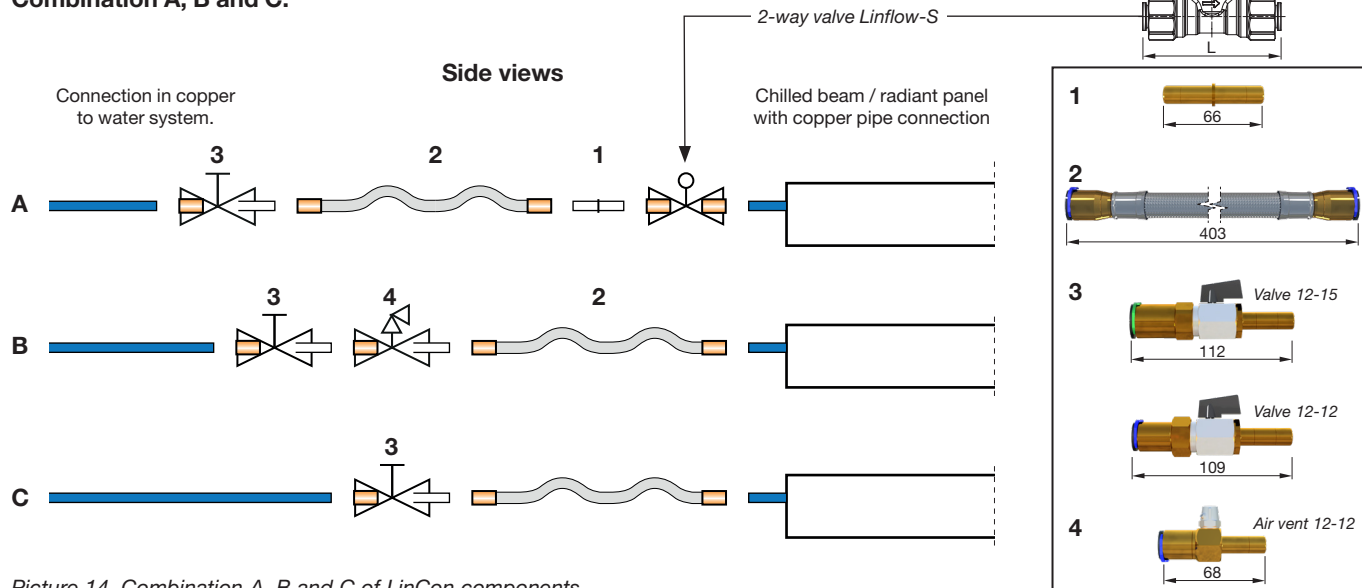
Water pipe connection sets

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LinCon

Combination of LinCon components

Combination A, B and C:



Picture 14. Combination A, B and C of LinCon components.

Max. distance between beam/panel and water system using LinCon

The maximum installation distance (Y) a LinCon set can cover is depending on:

- The level deviation of the unit and the piping in both vertical distance height (+Z) and horizontal distance (+X or -X).
- The combination A, B or C of components chosen.

Please take this into account planning your system design.

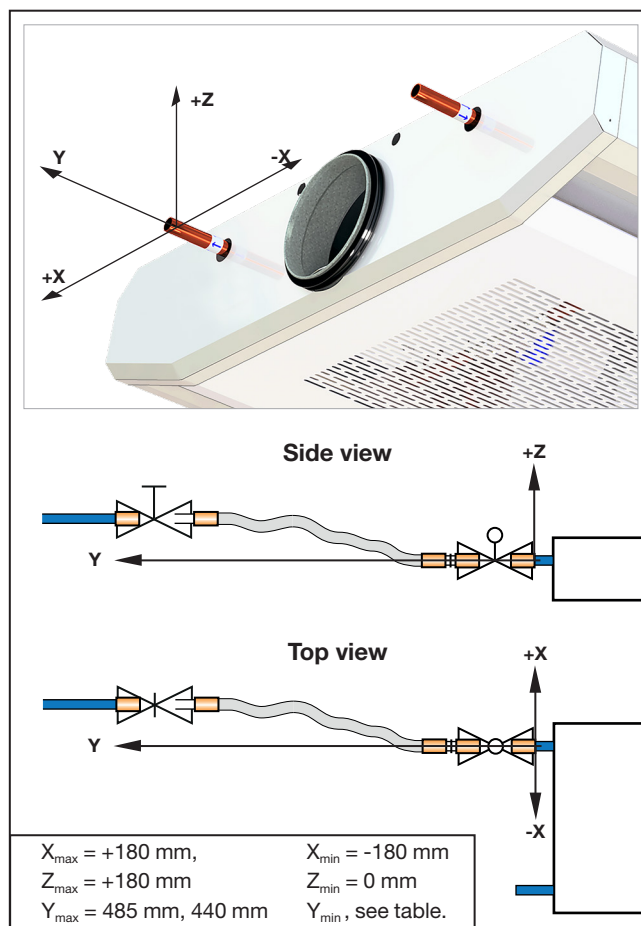
It is recommended to do a test installation before or during installation to identify best positioning of the inlet and return water piping in relation to the unit!

The chosen distance Y should always allow thermal expansion and compression of piping!

For bigger distances the Lindab flexible hoses are available as single accessories in different lengths.

Combination	X ($X_{\max} = 180$)	Z ($Z_{\max} = 180$)	Y ($Y_{\max} = 485$) ($Y_{\max} = 440$)
	mm	mm	mm
A	0	0	485
	100	100	465
	150	150	440
	180	180	410
B	0	0	485
	100	100	465
	150	150	440
	180	180	410
C	0	0	440
	100	100	415
	150	150	390
	180	180	350

Table 7. Maximum distance Y, between water connection on unit and water pipe connection on the water system on site.



Picture 15. Max. distance between beam/panels and water system.

Water pipe connection sets

LinCon

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Programme text

The water connection set LinCon is needed for an easy connection between the in- and outlet pipes of the water units and the on-site cooling and /or heating water pipe system.

No matter if it is an active chilled beam, passive radiant chilled beam, radiant panel or facade unit it is connected easily to the on-site water pipe system, which can be made of various plastics (PE, PA, PUR) as well as brass, copper or mild metal.

The connection set contains oxygen impermeable flexible hoses, type OXYBan (acc. to DIN 4726), shut off valves, an air vent and a brass nipple for connection to a enclosed 2-way valve (f. e. LinFlow; not part of the set/delivery).

The connection set comes in a separate box and all components contain factory implemented push-fit connectors for fast, simple and toolless mounting and demounting.

The connection set can therefore be used in water cooling and heating systems with maximum operating pressure of 7 bar (+65°C) or 10 bar (+23°C).

LinCon is available for in-/oulet pipe dimension Ø 10, 12 or 15 and fits to pipe dimensions Ø 12 or 15.

Available LinCon connection sets:

LinCon-10-15
LinCon-12-12
LinCon-12-15
LinCon-15-15

Ordering a connection set

When you order a Lindab connection set LinCon please get answers to the following questions:

1. Kind of water unit (active chilled beam, facade unit, passive radiant chilled beam, radiant panel or other)?
2. Type of the water unit (order code)?
3. Dimension of the water in- and outlet connection on the unit (order code)?
4. Dimension of the water forward and return piping and material (design, layout drawing)?

Order code

Product:	LinCon - 10 - 15
LinCon	
<i>Dimension unit (in- and outlet):</i>	
10, 12, 15	
<i>Dimension pipe system (forward and return):</i>	
12, 15	

To order one of the four LinCon connection sets, see [table 5](#) and use the item number for the preferred LinCon set.

See [table 6](#) to see which LinCon connection sets are suitable for the various Lindab water products.



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