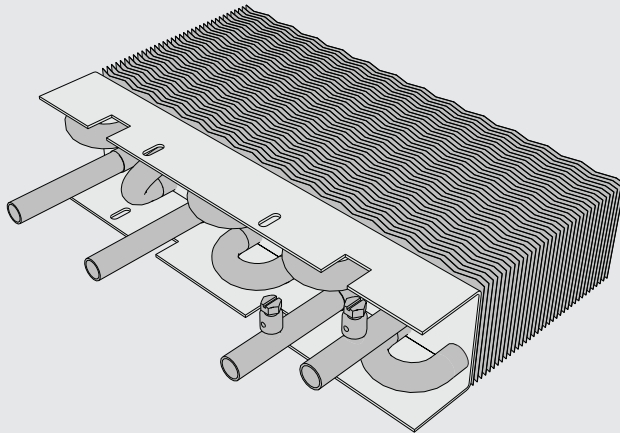




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Installation manual for air-water systems



TROX[®] TECHNIK
The art of handling air

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The installation instructions generally describe the installation of TROX air-water systems.

To ensure complete functioning, it is essential to read and comply with the provided installation manual before starting any work.

The manufacturer does not accept any liability for any malfunction or damage resulting from non-compliance with these instructions or non-compliance with relevant statutory regulations.

Personnel qualification

Expert

Due to their training and knowledge of relevant standards and regulations, experts are qualified to perform the following work properly and to recognise and avoid any potential risks.

- Transport
- Installation
- Commissioning
- Maintenance / cleaning
- Repair

Symbols used in this manual



Danger!

Designates danger to life and limb due to electrical voltage.



Warning against hot surfaces!

Designates danger that can lead to burn injuries.



Important!

Designates danger that can cause minor personal injury or damage to property.

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2 Safety

Personal protective equipment



Protective gloves

Protective gloves are used to protect hands from friction, abrasions, punctures, burns or deeper injuries.



Head protection

Head protection is used to protect the head from falling objects or suspended loads.

Additionally valid regulations

In addition to the instructions in the provided documents, observe the generally valid safety and accident prevention regulations and legal provisions.

Correct use

TROX air-water systems are comfort conditioning units for the ventilation, cooling, and/or heating of rooms.

Air-water systems are operated with centrally conditioned fresh air on the air side.

Optionally, some device series are suitable for extract ventilation by being connected to the on-site extract air system.

On the water side, air-water systems are connected to central heating and/or cooling systems.

- Warm water connection, maximum of 75 °C, in case of connecting hoses, 55 °C.
- Chilled water connection, minimum 6 °C.
- Operating pressure, 6 bar max.

3 Transport / interim storage

Delivery check

Check delivered units immediately after arrival for transport damage and completeness. If necessary, remove the packaging to do so and repack after the check for ongoing protection.

Transport



Important!

Danger of injury from edges and sheet metal parts.
Wear protective gloves for all work.

- To transport pallets use only lifting and transport vehicles with sufficient load-bearing capacity.
- During transport, secure the load against tipping and falling.
- Do not move units just by yourself. Get help to prevent injuries and damage.

Interim storage

Air-water system are high-quality components for which the following points must be observed during storage:

- Only store in the original packaging.
- Do not directly expose to the effects of weather.
- Protect against moisture, dust, and contamination.
- Storage temperature: -10 °C to +50 °C.
- Relative humidity: max. 95%, non-condensing

Air-water systems must not be used in rooms with high humidity, potentially explosive atmospheres, and rooms with extremely dusty or aggressive air.



Important!

Wear personal protective equipment during installation!
Perform work in pairs!

Before installation, ensure that air handling components are structurally protected from contamination. → VDI 6022

If this is not possible, measures to protect against contamination must be taken, for example, by covering the units. In this case, the operation of the units must be prevented.

The cleanliness of the components should be checked before installation. If necessary, thorough cleaning should be performed. In case of interruptions in installation, protect all unit openings from the penetration of dust or moisture.

Installation location and fixing

Ceiling slab

The devices can be fixed to the available suspension points using suitable fixing materials. Fixing must take place at all available suspension points.

Wall / undersill

The devices are set up using adjustable bases and/or using fixing points on the wall or under the sill.

Floor / underfloor

The devices are set up in false flooring using adjustable bases. As required, the devices can be screwed to the floor.

Installation details

- The customer must install the units, make all connections, and provide the suspension system, connection and sealing materials.
- Setup and fixing must be performed on components that are capable of load carrying.
- Use only certified fixing systems.
- After installation, the devices must be easily accessible for cleaning work.

Active air-water systems always have a fresh air or primary air connection, as well as a hydraulic connection. Optionally, some device series can be connected to the extract air system.

The spigot connections are suitable for circular connecting ducts according to EN 1506 or EN 13180.

6 Water connection



Hot surfaces

Danger of burns when working with warm water systems!

Before working on the water-side connections, shut down, depressurise, and, if possible, cool down the system.



Important!

Damage to the heat exchanger is possible.

When tightening the connections on the heat exchanger, apply appropriate counter force with a suitable spanner to avoid damage to the heat exchanger.

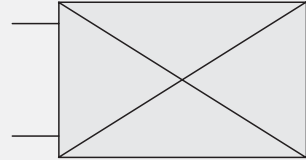
General information

- We recommend that you establish the water connection on the heat exchanger using flexible connecting hoses. The connecting hoses are available as separate accessories.
- If you must use rigid (soldered or screw) connections, ensure that they are not affected by external conditions, e.g. by thermal expansion, weight of the pipes, vibration, or tension.
- The factory-made connections are hand-tight when pre-assembled and must be tightened during installation.
- In case of units with a condensate drain, this drain should be properly connected.
- If possible, install control valves in the incoming flow and shut-off valves in the return. Observe the direction of flow in the fittings.
- If not included in delivery, the customer must provide control, shut-off, and safety fittings.
- If not included in delivery, the customer must provide drain and venting fittings.
- When the connection work is complete, check all screw joints and other connections to make sure they do not leak.
- To prevent energy losses, we suggest that you insulate the supply lines.

2-pipe system

- 2 water connections for connection to the warm or chilled water circuit
- One operating mode: either cooling or heating
- Using the changeover valve, both heating and cooling are possible in changeover mode.

Schematic illustration of the 2-pipe system

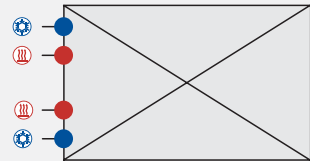


Label	connection	Function
-	Chilled or warm water	Cooling or heating

4-pipe system

- 4 water connections for connection to the warm and chilled water circuits
- 2 operating modes: cooling and heating
- Water flow and return flow can be selected (in the respective circuit)

Schematic illustration of the 4-pipe system



Label	connection	Function
blue	Chilled water	Cooling
red	Warm water	Heating

Filling the system

To fill the system, use clean tap water (pH value 6.5 to 9.5) or a water-glycol mixture (max. 30% glycol). Make sure the system is completely vented to ensure the full performance of the system.



Warm water connection, max. 75 °C, with connecting hoses, 55 °C



Chilled water connection, minimum 6 °C.



Operating pressure, 6 bar.



Important!

Damage to the heat exchanger due to frost!

Only fill the heat exchanger if there is no danger from frost!

Undershooting of the dew point

The formation of condensation due to the undershooting of the dew point can lead to damage to the structure and should thus be prevented using suitable measures.



Danger!

Danger of electric shock! Do not touch any live components!

Electrical equipment carries a dangerous electrical voltage.

- Only skilled qualified electricians are allowed to work on the electrical system.
- Switch off the supply voltage and secure it against switching on again before working on any electrical equipment.

Air-water systems can be equipped with electrical components, which must be connected by an electrician. The connecting data can be found in the installation manual or wiring diagrams.

- The supply voltage must be provided according to the wiring diagrams. The rules and regulations of the VDE (Association of German Electrical Engineers) and the local electrical utility company must be observed.
- All air-water systems can be equipped with the optionally available closed-loop control system. The wiring of the individual components must be performed by an electrician. The details can be found in the wiring diagrams.

8 Commissioning

Perform commissioning, proceed as follows:

- Check water and electrical connections for correct installation.
- Check devices for cleanliness.
- Remove any protective films or similar objects.
- Check any existing condensate drains for proper function.
- Make sure the media supply is in perfect working order.

For commissioning, also see VDI 6022, Sheet 1 – “Hygiene Requirements on Ventilation Systems” or appropriate national requirements.

9 Cleaning



Danger!

Danger of electric shock! Do not touch any live components!

Electrical equipment carries a dangerous electrical voltage.

Before performing cleaning work, switch off the unit supply voltage and secure against reinstatement.



Warning!

When performing cleaning work on the heat exchanger, there is a danger of burns.

Before performing cleaning work, switch off the system and let it cool down.

- Observe the cleaning intervals to VDI 6022 or appropriate national requirements.
- Clean surfaces with a moist cloth.
- For cleaning, use only normal household cleaners and no aggressive cleaning agents.
- Clean the heat exchanger with an industrial vacuum cleaner.

