

# Installation air cooler TBKA/TCKA/TCKAS, TBKC/TCKC/TCKCS, air heater/cooler TCCC GOLD/SILVER C/COMPACT

## 1. General

The TBKA/TCKA/TCKAS, TBKC/TCKC/TCKCS air coolers are used for cooling the supply air with chilled water or evaporative refrigerant as the cooling medium.

The TCCC air heaters/coolers are used for cooling the supply air with an evaporative refrigerant as the cooling medium.

Air coolers of the type TCKA/TCKAS and some variants of TBKA are equipped with connections for insertion sensors and can be used beneficially as a multi-purpose coil (cooling and heating).

The air cooler must be installed for horizontal airflow.

**N.B.!** Air cooler with evaporative refrigerant (DX battery) must be installed according to EN 378 and relevant national standards. The installer is responsible for correct installation and CE marking. For air coolers with R32 refrigerant, please note that this refrigerant is part of the A2L group and therefore requires additional action. As standard, the GOLD unit has control functions that can receive alarm signals as well as transmit signals for the required operation level in the event of an alarm.

The TBKA/TCKA/TCKAS, TBKC/TCKC/TCKCS, TCCC air coolers are composed of copper tubes and profiled aluminium fins.

The TBKA/TCKA/TCKAS has headers and water connections made of copper/brass, with male connection threads.

The TBKC/TCKC/TCKCS/TCCC has headers and distributor tubes made of copper. The connections are designed for brazed joints.

### Extra accessories

#### GOLD/COMPACT:

The TBVL valve set with 2(3)-way valve, actuator, connection cable with quick-fit connector, frost guard sensor (insertion type), and T-piece (for air heaters without outlet for an insertion sensor). See the individual instructions for the TBVL. If the air heater is to be installed outdoors or in a cold space, take into consideration the enclosure class of the actuator and the permissible ambient temperature. If necessary, see to it that required protection is arranged.

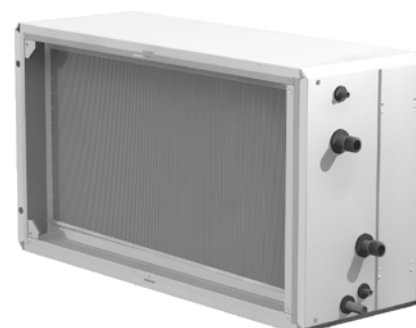
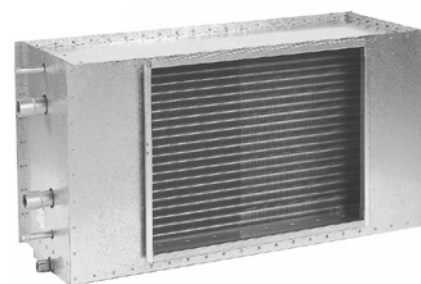
If you use a valve of your own, you have the option of instead selecting a set of electrical connection components. This set contains a connection cable with quick-fit connector, resistor and insertion or strap-on sensor.

#### SILVER C:

The TBVA Valve set consisting of a 2(3)-way valve including actuator can be ordered. See the instructions for TBVA accessories. If the air heater/cooler is to be installed outdoors or in a cold space, take into consideration the enclosure class of the actuator and the permissible ambient temperature. If necessary, ensure that the required protection is arranged.



TBKA/TBKC



TCKA/TCKAS/TCKC/TCKCS/TCCC

## 3. Maintenance

Check at least twice a year whether cleaning is necessary.

Cleaning shall only be done by blowing with compressed air against the ordinary direction of airflow, vacuum cleaning with a soft nozzle or wet cleaning with water and/or solvent. Before you begin wet cleaning, you should cover adjacent functional sections to protect them. After wet cleaning, you should blow the surfaces dry with compressed air to remove every trace of cleaning solvent.

If cleaning solvent is used, this solvent must not contain ingredients that will corrode aluminium or copper. Swegon's cleaning agent is recommended. This cleaning agent is sold by Swegon or Swegon Service.

While cleaning, check the air cooler for tightness and that the drainage pipework is not clogged. For the TBKA/TCKA/TCKAS air coolers, also check the glycol content and vent the circuit.

### 3. Installation

For the installation of air coolers in duct systems, see the individual instructions entitled: Installation Instructions for Duct Accessories.

The capacity of the TBKA/TCKA/TCKAS air cooler is dependent on the direction of airflow and correct connection of the water pipes. Parallel-flow circulation will decrease its capacity. For appropriate connections, see the figure. 1. Use a pipe wrench to restrain the pipe connections of the air cooler when tightening the external pipe connections to avoid damaging the tubes in the air cooler. Always fill the air cooler with liquid from the lowest connection. Vent the air cooler before you commission it.

In the case of the TBKC/TCKC/TCKCS/TCCC, the direction of airflow has an insignificant effect on its cooling capacity. The air cooler connections are designed for brazed joints. The inlet cooling medium pipe should be connected to the upper connection of the air cooler as shown in Fig. 2.

#### TBKA, combi coil

Make sure that the anti-freeze protection connection is always nearest to the return connection.

Continuous circulation through the coil is required whenever the outdoor temperature is low, to ensure the function of the anti-freeze protection in the coil. A secondary pump and non-return valve must therefore be installed as illustrated in fig. 3.

#### Connection, refrigerant

##### Air cooler, chilled water

Connections TBKA/TCKA

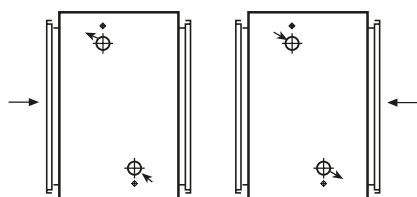


Fig 1

##### Air cooler, evaporation

Connections TBKC/TCKC/TCCC

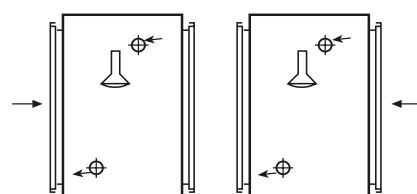
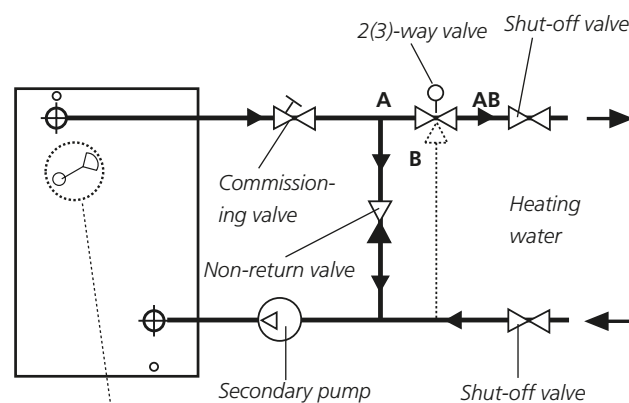


Fig 2

Fig. 3

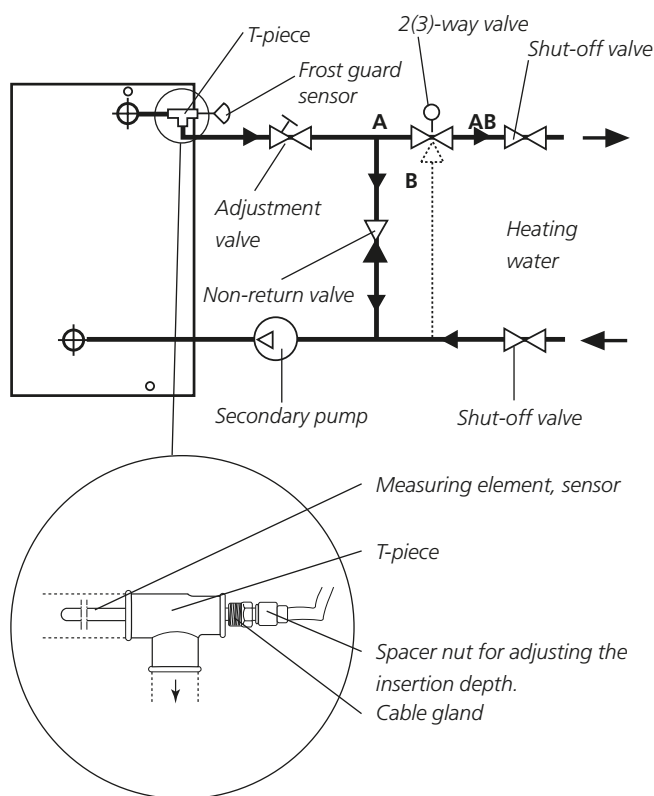
Connection example

#### Installation of frost guard sensor in the connection for an insertion sensor (if any)



Frost guard sensor.

#### Installation of anti-freeze protection sensor if the combi coil lacks a connection for an insertion-type sensor.



When connecting the condensate discharge pipework of air coolers TBKA/TBKC with circular duct connections, connect the pipework to the drainage connection at the discharge air side of the air cooler.

Blank off the drainage connection at the inlet air side using a plug, see figure 4. Connect the condensate discharge pipework across a water trap to a drain gully.

For air coolers TBKA/TBKC with rectangular duct connection, the air cooler can be equipped with one or two drainage pipes and possibly one or two insertion-type sensor sockets.

For one drainage pipe, drainage should be connected to the drain via a water trap as shown in fig. 5. For two drainage pipes, the drainage pipe that is by the outgoing air side is connected to the drain via a water trap and the drainage pipe by the ingoing air side is connected directly (without water trap) to the drain as set out in fig. 6.

For two possible insertion-type sensor sockets, the socket on the outgoing air side must be plugged, see fig. 5.

A TBXZ-1-40 water trap is available as an accessory. See individual instructions.

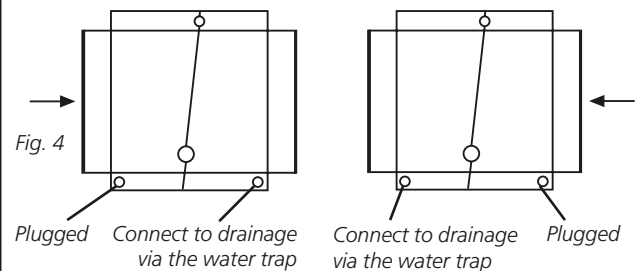
Mix anti-freeze agent in the water to prevent the risk of freeze damage in the TBKA/TCKA/TCKAS air cooler for chilled water. If for some reason anti-freeze agent cannot be used, take other measures to prevent freezing.

## Connection, drainage/possible insertion-type sensor socket

### Circular duct connection

#### Air cooler, chilled water and evaporation

##### Air cooler TBKA/TBKC

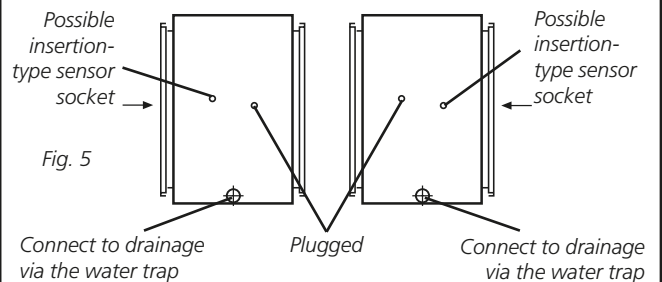


### Rectangular duct connection

#### Air cooler, chilled water and evaporation

##### Option 1 (one drainage pipe)

##### Connections TBKA/TCKA/TBKC/TCKC/TCCC



##### Option 2 (two drainage pipes)

##### Connections TBKA/TBKC

