Operation and Installation Manual EN/en

Fancoil Units

TFCU/TFCUP Series

Before starting any work, read the instructions!

TROX® TECHNIK

The art of handling air

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General information

About this manual

This operation and installation manual enables operating or service personnel to correctly install the TROX unit described below, and to use it safely and efficiently.

This operating and installation manual is intended for use by fitting or installation companies, maintenance technicians, technical staff, properly-trained persons, qualified electricians, and climate-control technicians.

It is essential to read and understand this manual before starting any work. All safety indications and instructions described in this manual must be adhered to in order to guarantee the working process under the necessary safety conditions.

All applicable national regulations must be observed.

The units can only start operating when all their components are in perfect technical condition. Damages produced in any of the elements that comprise the TFCU/ TFCUP units, derived from not observing the instructions for installation, commissioning and maintenance, are excluded from the guarantee by
TROX España.
All components and parts must be replaced with original TROX TECHNIK spares.
Any changes made on the machinery or any of its components that have not been explicitly authorised by TROX España are also excluded from the guarantee.
All fault or damages shall only be repaired by specialised personnel, observing the applicable safety regulations.

This manual must be submitted to the person in charge of the facilities at the time when the system is delivered. The system's owner must keep this manual together with all the system's documentation. The manual must be available to be consulted at all times.
All figures included in this manual are merely for informative purposes, and may differ from reality.

Inspection

Upon receiving the unit, this must be visually inspected in order to detect any damage it might have suffered during transportation.
If there are any defects, this should be noted on the delivery note, requesting, if necessary, an inspection by the insurance company agents or by the carrier. TROX España should be informed immediately of any defect.

Copyright

Technical Support Service

With the aim of solving faults as soon as possible, please provide the following information.

- Product name
- TROX order number
- Manufacturing date
- Brief description of the fault

Online	www.trox.es
Email	sat@trox.es

Manufacturing Defects

For additional details regarding manufacturing defects, please refer to the guarantees section in TROX's general contract terms.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Misuse
- Operation or handling by untrained personnel
- Unauthorised modifications
- Technical changes
- Use of non-approved replacement parts

The actual scope of delivery may differ from the information in this manual for bespoke models, additional order variations, or as a result of later technical changes.

The obligations agreed in the order, the general terms and sale conditions, the manufacturer's terms of delivery, and the legal regulations in force must be adhered to.
We reserve the right to make modifications.

Liability Disclaimer

For details regarding reliability defects, please refer to TROX's general contract terms.

This information may be found at:
www.trox.es

Unit Identification

① **Housing**
It contains all the unit components. Choose from galvanised sheet steel as standard or the optional painted finish.

② **Coil**
Coils are made of galvanised sheets, copper tubes and aluminium fins, and feature purging and draining valves. Depending on the model, it may be formed with a single coil or with a cooling coil plus a heating coil.

③ **Fan motor group**
Has one or two fans depending on the model. They are double-inlet centrifugal fans, dynamically balanced and designed for high performance and low noise levels.
The fan is made of synthetic material with self-lubricated bearings, driven by single-phase EC motors, with an adjustable voltage of 0–10 V, Class B insulation and built-in thermal overload protection.

④ **Filter**
For the TFCUs, the filters can be accessed for maintenance from the rear or from either side.
For the TFCUPs, the filter should be accessed for maintenance from the connections side.

⑤ **Fan access cover**
Screwed-on cover to access the fan section.

⑥ **UV lamp (only in TFCUP)**
Supplied as an optional extra in the TFCUP range. Fitted with independent terminal strips to supply the lamp at 230 V/l/50 Hz.

⑦ **Filter access window**
For removing the filter.

⑧ **Condensates tray**
Screwed from the exterior, it can be easily disassembled for cleaning.

⑨ **Electrical connections box**
It contains fast connection terminals for 0 V, 0–10 V, 10 V power (line L, neutral N and earth ⏚ and for control), and Tacho for fans with a tachometer for measuring rotation speed.

⑩ **Cold and/or hot water connections**
The water inlet should be via the lower headers and the outlet via the upper headers. There is only one coil for 2T installations, and two coils for 4T installations.
The connections closest to the air inlet are for cold water, while the connections closest to the air outlet are for hot water.

⑪ **Connection nozzle**
For connecting the induction tube, integrated in the unit's housing.

Components
TFCU

Components
TFCUP

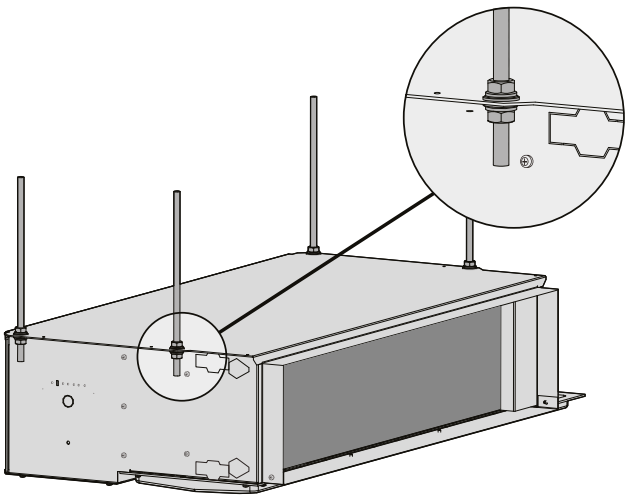
Installation and Commissioning

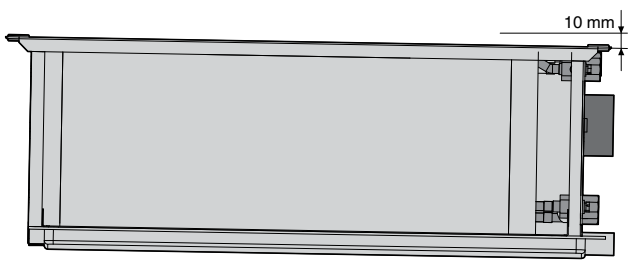
TFCU units must be installed horizontally.
In any case, units must never be installed in:

- Extreme humidity areas (such as swimming pools)
- Areas exposed to open weather
- Areas with high levels of dust
- Areas with explosion hazards

For installation in false ceilings, the unit shall be suspended with threaded rods, held with nuts to the brackets on the Fancoil housing.

To ensure the correct drainage of the unit's condensate, it must be installed with an incline of 10 mm, as specified in the attached diagram.





Approximate images of units

Hydraulic connections

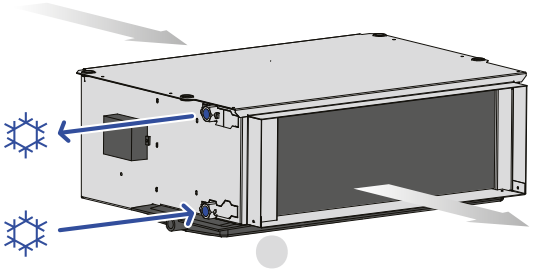
Hydraulic connections are located on the right or left-hand side of the unit's coil, depending on the reference. The unit drains solely by the effects of gravity, with no additional pumps. Therefore, an adequate decline must be guaranteed in the drain pipes in order to prevent water from overflowing.

Fluid will always enter via the lower manifold and come out via the upper manifold. Once the connection has been made, the coil must be purged using its built-in purgers.

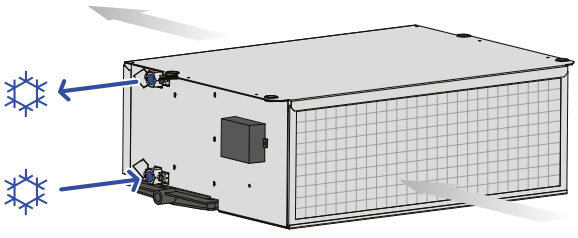
To prevent irreversible damage, the hydraulic connection with the coils must be made without transmitting torque to the coil's manifold. To do this, perform a locknut operation using the appropriate torque.

Fancoil Units TFCU/TFCUP 2 tubes

Right side

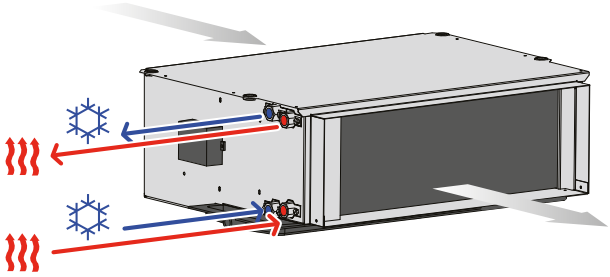


Left side

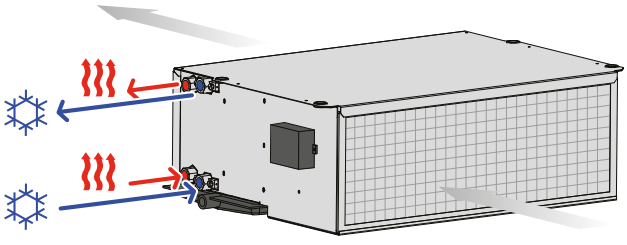


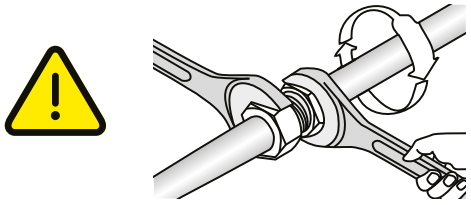
Fancoil Units TFCU/TFCUP 4 tubes

Right side



Left side





Electrical Connections

All electrical connections must be made by qualified personnel, in accordance with applicable regulations and with Low-Voltage Regulations.

Only copper conductors must be used in order to prevent galvanic corrosion and/or the contact point from overheating.

Before connecting the unit, disconnect from the mains. Connect the unit with protective earthing. TROX España shall not be held responsible for incorrect electrical connections.

Units have been designed to work exclusively with a nominal supply voltage of 230 V, 50/60Hz single-phase, and a control voltage of 0-10 V.

Technical Specifications

TFCU/TFCUP fan coil units have been designed to work under the following operating conditions:

- Heat-transfer fluid: Water or glycols (ethylene or propylene) at a maximum concentration of 60%.
- Temperature range for the heat-transfer fluid: 5–95 °C.
- Air temperature range: 1–40 °C.
- Maximum operating pressure for the coils: 16 bar/95 °C.
- Supply voltage: 230 V, 50/60 Hz.

TFCU Coils inner volume (l)	**Size**					
Battery type	**1**	**2**	**2,5**	**3**	**4**	**5**
Cold/hot	0,8	1,2	1,2	1,3	1,7	2,0
Hot	0,3	0,4	0,4	0,4	0,6	0,7

TFCUP		**Size**							
Battery type		**1**	**2**	**3**	**4**	**4,5**	**5**	**6**	**7**
Cold/hot	2 TP	0,8	1,2	1,3	1,7	2,2	2,0	2,5	2,9
Cold	4 TP	0,8	1,2	1,3	1,7	2,2	2,0	2,5	2,9
	4 TD	1,1	1,6	1,8	2,2	2,8	2,7	3,4	3,9
Hot	4 TP - TD	0,3	0,4	0,4	0,6	0,6	0,7	0,8	1,0

Fault Table

Anomaly detected	Possible cause	Action
The motor does not start	The supply voltage does not reach the unit The control voltage does not reach the unit	Check the electrical installation for power and control
	Fan motor group failure	Request installer intervention
The unit's performance is lower than expected	The unit's air inlets and/or outlets are obstructed	Remove the obstructing objects, and clean the unit
	The fluid temperatures entering the coil are not as expected	Supply fluid at the right temperature
	Dirty filter	Clean or replace
	The installation load loss is higher than expected	Verify the load loss in the installation air
The unit leaks water	The condensates tray overflows	Verify that the drains are not obstructed
		Verify that the unit is installed with the correct inclination
	Incorrect hydraulic circuit connection	Request installer intervention
	Damaged battery	
Excessive noise of the unit	The unit's air inlets and/or outlets are obstructed	Remove the obstructing objects, and clean the unit
	Fan motor group failure	Request installer intervention