Assembly instructions for Minib convectors

www.minib.cz

Minib convectors are supplied as standard in lengths of 0.9 m to 3m and it is possible to produce any atypical lengths. Atypical convectors longer than 3 metres (e.g. 6 meter unit) can be assembled from two 3 meter interconnected convectors with the walkway grille. The company Minib also produces curved convectors joined at various angles.

Convector technical data

Voltage – 12V from the safety protection transformer (except the wall radiator COIL-TE 230V). The transformer is supplied in the mounting box, which shall be placed into the wall or switchboard. The box with the transformer must not be installed in the convector unit!!

Electrical input power – 5 to 20 VA for 12V DC motors and 30 to 130 VA for 12V AC motors according to the length and number of fans.

Applications – Al/Cu fin tube construction.

Heat exchanger – žebrovka Al/Cu

Protection – provided by low safe voltage 12V. Motor protection IP2X, where "X" indicates the protection by safe voltage 12V.

Working pressure – permanently 6 atm (0.6 MPa) in the heat exchanger; outlet load tests made by pressure 15 atm (1.5 MPa) ; maximum load of connecting stainless steel hoses – 1.0 MPa.

Heating medium – water; maximum permitted inlet heating water temperature is 90 ˚C. It is prohibited to use another type of medium than water and to mix water with another mixtures, e.g. with antifreeze!

Environment for application - interiors with temperatures from +5 ˚C to 40 ˚C

I. FLOOR CONVECTOR MOUNTING

For correct operation of the convector it is necessary to comply with several general principles:

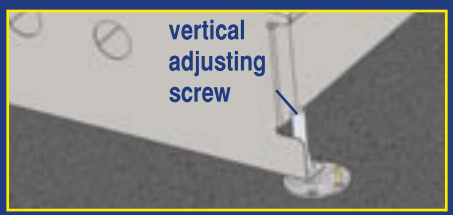
- the properly installed unit has the heat exchanger placed farther from the window.
- to connect the heat exchanger to the flow and return piping use the normally supplied stainless steel hoses (if not recommended otherwise).
- control screw fitting and shut-off valve are always supplied with the convector.
- the properly installed convector is placed horizontally with the upper edges of the trough unbuckled and unbent to provide the correct function of the walkout grille and deaerating of the heat exchanger.
- the properly installed convector has the decorative edge cover strip installed on the level of the floor covering at the tolerance of ±1 mm.
- to avoid contamination of the inner part of the convector during concreting we recommend to keep the upper cover of the convector (sololit or plastic). We note that the protective cover of the convector cannot be walked upon!
- when pouring concrete ensure that the convector is secured to the floor using clamping bolts in order to prevent its vertical shifting. It is also possible to vertically load the convector during concreting.

Installation procedure of MINIB floor convectors:

1. Install 4 bolts with nuts and fixing washer into nuts in face parts of the convector.

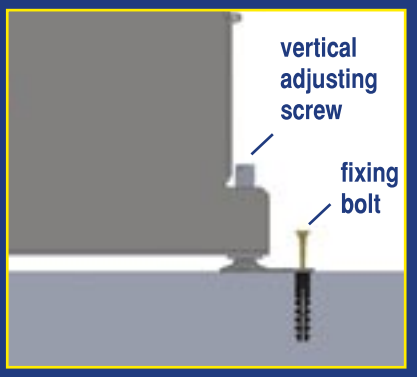
2. Place the convector into the prepared place in the rough floor and mark spots in the concrete bedding in order to drill holes for sockets.

3. Remove the convector, drill holes into the marked spots and insert sockets for fixing bolts, which will be used later for fixing convectors to the floor.



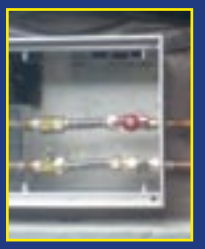
4. Place the convector back into the floor and adjust it to the level with vertical adjusting screws so that the convector is on the same level as the final floor.

5. Screw the convector firmly to the floor using fixing bolts. By this way the convector shall be fixed to the floor (and also adjusted to the level with vertical adjusting screws).



6. Insert wooden spacers to prevent pressure deformation of the convector walls during concreting. Remove wooden and metal spacers after setting up of the concrete.

7. Make electrical installations and connection to the hot water distribution. Use the supplied flexible stainless steel hoses (wave duct) for the connection of the heat exchanger, which enable later vertical tilting of the heat exchanger due to cleaning – MAX. PERMITTED tilting of the heat exchanger is ca. 60 degrees. It is possible to shift the heat exchanger in the convector so that fins of the heat exchanger are opposite the fan and connecting hoses can be bent against side outlets from the convector. Connection of the convector KT-1 with corner valves is further shown in the detail.



8. Cover the convector with covering sololit or plastic boards in order to avoid contamination of the inner part of the convector during concreting.

9. Pour the slurry filling concrete carefully around the convector at least up to 1/3 of the convector height due to noise suppression to the minimum level. We recommend to place insulation only on the outer side of the convector, where is the heat exchanger, but it is not necessary.

10. After that it is necessary to embed the whole outer surface of the convector with standard concrete up to the final level of the rough floor. Now the convector is buried in concrete into the rough floor, which is prepared for final decoration (parquets, paving etc.)

11. At convectors T50, T60 and KT0, there must be individual parts of the walkout grille with plastic guides properly snapped into each other.

II. INSTALLATION PROCEDURE FOR MINIB WALL MOUNTED CONVECTORS

For correct operation of the convectors it is necessary to comply with the following instructions and principles:

- ✖ Make the water connections with the stainless steel hoses and control/ shut-off valves supplied.
- ✖ When correctly installed the heat exchanger should lie horizontal to enable proper venting.
- ✖ It is recommended that the top of the convector is covered during fitted to avoid contaminating the internal parts
- ✖ Note. The convectors are not designed for vertical loading.

Installation procedure for Minib wall mounted convectors

1. Provide hot water pipework with the control and shut-off valves supplied

2. Place the backplate of the convector against the wall and mark fixing positions.

3. Remote the backplate, drill the wall and fit the required plugs.

4. Place the backplate against the wall and loosely secure it.

5. Horizontally adjust the heat exchanger and the backplate with the adjusting screw and a spirit level then firmly tighten the mounting screws.

6. Connect the heat exchanger to the control/shut-off valves using the stainless hoses.

7. Convector should now be firmly fixed to the wall and connected to the hot water fittings

8. Only qualified personnel should undertake the electrical installation, according to current standards.

9. To complete the installation the decorative cover should be freely hung over the chassis of the convector.

III. INSTALLATION OF MINIB SELF-STANDING CONVECTORS

Installation procedure:

1. Unpack carefully the convector

2. Remove the aluminium cover. Check the supplied accessories.

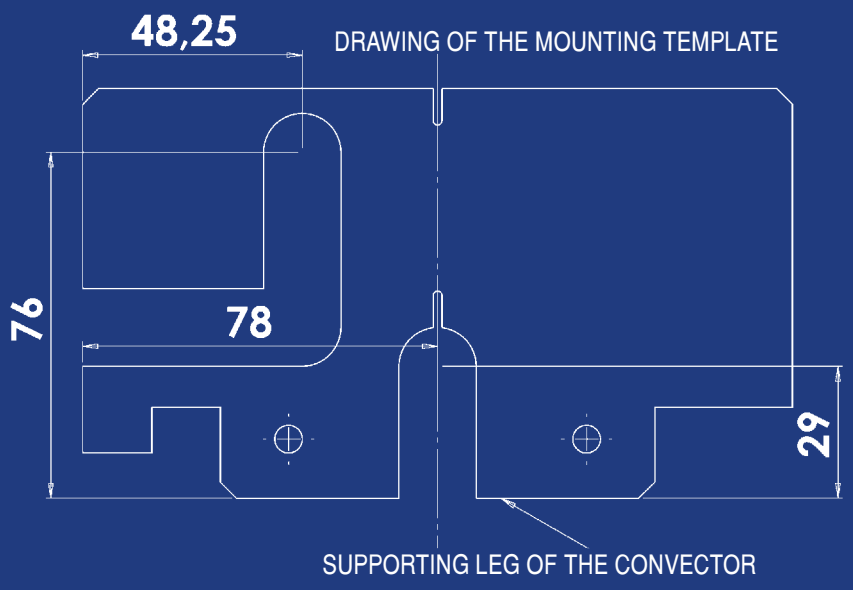
3. The length of CU fittings Inlet: 105 mm

The length of CU fittings Outlet: 60 mm

4. Measurement and placement according to the mounting template

5. Anchorage – 4 wholes diameter: 10mm

6. Mounting of the thermo-static head screw coupling



7. Mounting of the adjusting screw coupling

8. Screws for fixing of the aluminium cover

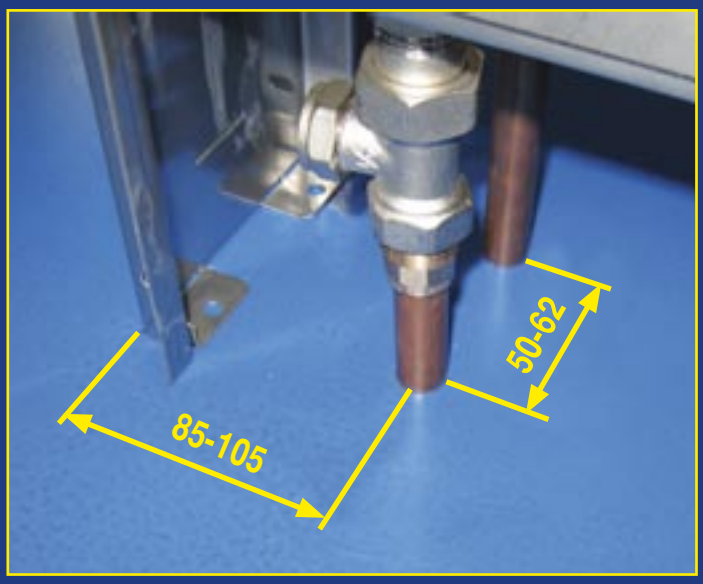
9. Installation of the aluminium cover

10. Mounting of the thermostatic head

11. Fixing of the aluminium cover and installation of the grill

IV. CONNECTION DIMENSIONS OF THE MINIB CONVECTOR – SK1

The length of the CU fittings
Inlet: 120 mm Outlet: 70 mm



V. CLEANING OF MINIB FLOOR CONVECTORS

Follow these instructions during cleaning of convectors:

1) Remove the cover grill.

2) Take out the fan filter.

3) Disconnect connectors on the temp. sensor.

4) Lift up the heat exchanger to the max. roll angle – approx. 60 degrees.

5) Disconnect the motor of the convector and remove fans.

When cleaning the convector, the electrical parts must not get to the direct contact with water. It is suitable to use the vacuum cleaner with the brush adapter for cleaning of the fan. The fan must also remain in the horizontal position during cleaning. After finish, we recommend to grease fan shafts and bearings, e.g. with silicon oil. It is prohibited to use any chlorine based cleaning detergents for cleaning of the convector stainless trough!

VI. INSTALLATION OF CONVECTORS IN WET AREAS

It concerns, e.g. types KO, PO, KO-2, MO, HC with the water drain. Proceed according to instructions listed above. Do not forget to connect the little pipe on the bottom of the trough with piping with provided declivity for wastewater or condensate drain.

Mounting of non-standard convectors greater than 3 meters long

In this case it is necessary to pay an attention to installation of the convector. The convectors are equipped with connecting plates with M4 inserts and screws M4 x 12 mm. After connection and assembly of units it is necessary to make a thorough check of the proper setting, especially the height, plainness, deformation, fixing of mounting braces, placement of decorative strips. We recommend to check a functionality and placement of the walkout grille and then follow assembly instructions listed above.

Control of hot water convectors

The control is possible in two ways:

1. water side control for convectors with or without fans.
2. air side control for convectors fitted with fans.

1) The convector's output regarding the water side control can be controlled either by change of water temperature in piping (at boilers equipped with the equiterm control), or by change of the heating water flow (using the thermostatic valve with the separated sensor).

2) It is recommended that convectors fitted with fans are controlled on the air side by switching the fan on and off. When the fan is switched on, the heat output of the convector will increase, approximately, by 200 % in comparison with the situation, when the fan is switched off. A thermostat placed in the reference point of the space is used for switching the fans on and off according to temperature requirements.

Detailed wiring diagrams of possible types of standard "IQ" modern automatic MINIB controls are listed in the catalogue or on the website www.minib.cz of the company MINIB s.r.o.

ELECTRICAL INSTALLATION OF CONVECTORS AND CABLE DIMENSIONING

I. Convectors installed in dry areas – fans with 12 V DC motors

- The two wire input CYKY cable to the convectors at the voltage of 12 V must be dimensioned regarding the voltage drop for currents of 10A.
- Connecting cables for a branch of convectors to one transformer should be CYKY 2x2.5 mm and for distribution to individual convectors use the cable CYKY 2x1.5 mm.
- Connecting cable of the individual convector to 1 transformer TTx-DC should be CYKY 2x1.5 mm.
- Calculate with the consumption of 7W per one meter of the convector for determination of the max. convector length connectable to power supplies (e.g. TT1-DC). The length for TT1-DC = 96VA is approx. 13m. TT3 = 240 VA – approx. 32 m, TT5 = 330VA – approx. 47m.
- The TTx-DC transformer in its installation box must be mounted into the wall or switchboard as close as possible to the convectors so as to prevent high voltage drops. The maximum allowable voltage drop is 1 to 2 V.
- Dimensions of installation boxes with transformers TTx-DC are 145 x 175 x 70 mm.
- Important: Layout and installation of convectors fitted with fans must meet the relevant standards for safe positioning of all instruments and devices (TTx-DC, thermostat etc.).

II. Convectors installed in wet areas – fans with 12 V AC motors

- The two wire input CYKY cable to the convectors at the voltage of 12 V must be dimensioned regarding the voltage drop for currents of 16A.
- Connecting cables for a branch of convectors to one transformer should be CYKY 2x4 mm and for distribution to individual convectors use the cable CYKY 2x2.5 mm.
- Connecting cable of the individual convector to 1 transformer TTx-DC should be CYKY 2x2.5 mm.
- When the convector with AC motors is used, it is necessary to calculate with the consumption of approx. 50VA per one meter of the convector.
- The transformers TT1, TT3, TT5 in installation boxes must be mounted into the wall or switchboard as close as possible to the convectors so as to prevent high voltage drops. The maximum allowable voltage drop is 1 to 2 V.
- Dimensions of installation boxes with the transformer TT1 are 145 x 175 x 70 mm, TT3 – 165 x 210 x 70 mm, TT5 – 205 x 255 x 70 mm.
- Important: Layout and installation of convectors fitted with fans must meet the relevant standards for safe positioning of all instruments and devices (TTx-DC, thermostat etc.), where it is not a safe voltage, out of the swimming pool zone 0, 1, and 2.
- convectors for wet areas, especially COIL-KO, MO, KO-2, COIL-HC equipped with the 12 V fan and pipe for water drain from the bottom of the trough are developed and approved for the installation in the zone 1 of wet areas.

The layout of the electrical installation must be made by the designer with the relevant professional qualification and must be in accordance with relevant standards (the list of relevant standards is listed in the detailed instruction manual).

The installation of the electrical devices can be only undertaken by worker trained under CSN 33 2000-3 with the relevant professional qualification and respecting all instructions in the project documentation and these assembly instructions).

Do not make any other additional wiring connections at the convectors as these are protected against dangerous contact by the safe voltage of 12 V. Further ensure that all water drainage lines in the convector for wet areas are provided with the electrically non-conducting hose from the bottom of the trough.

Prior to commissioning, perform all safety checks of the electrical devices in accordance with CSN 33 1500 Electrical Regulations – Inspections of Electrical Devices.

WARRANTY

All Minib s.r.o. products are certified. The manufacturer provides a 2-year warranty on all convectors and their parts. Additionally we provide a 10-year warranty for the MINIB heat exchanger and against rusting-through of the normally supplied stainless steel trough. The warranty does not cover damage caused by incorrect handling and wear incurred by normal use. The warranty is not provided in case that supplied flexible hoses are not used for connection of the heat exchanger. The standard supplied aluminium or wooden grille is designed for walking on it and for loads up to 120 kg. For extreme point loads (e.g. chair legs etc.) or highly exposed areas it is recommended to use a more durable stainless steel grille, which is available at an extra cost.

Minib s.r.o. guarantees that all convectors and parts thereof are tested, functional and free of defects.

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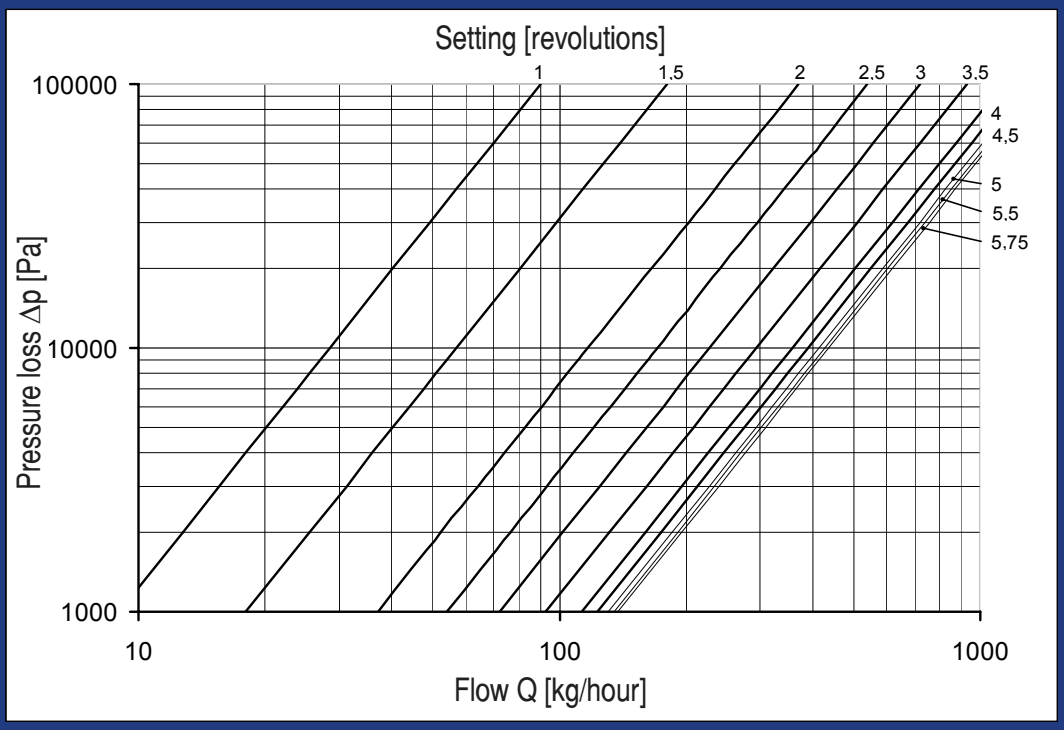
Flow diagram for the control valve fitting, Kv values



Setting (rev.)	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	5,75
Kv ($m^3.h^2$)	0	0,08	0,18	0,37	0,54	0,72	0,93	1,13	1,23	1,31	1,35	1,38

Example of the required setting of the flow control fitting.

Flow setting: Flow Q = 180kg/hr
Requirement: Adjustment for differential pressure of 10000Pa
Solution: The required adjustment is at the point of intersection of the values of flow and differential pressure.
The result is a required adjustment of 2.5 revolutions.

EC DECLARATION OF CONFORMITY

Under Art no. 13 of the Act no. 22/1997 Coll and Government Regulations no. 190/2002 Coll.
MANUFACTURER: MINIB s.r.o. – Střešovická 405/49, 162 00 PRAGUE 6, Reg. no.: 25732153, TIN: CZ25732153

DECLARES AND CONFIRMS AT ITS EXCLUSIVE RESPONSIBILITY that products, floor, parapet and wall mounted convectors (FAN-COIL) marked:

Types without the fan: COIL-P, COIL-PT 80, COIL-PT 180, COIL-PT 300, COIL-PT , COIL-PO (mokré prostředí), COIL-PW, COIL-NP-1, NP-2, COIL-PT/4, COIL-PO/4 (wet areas), COIL-P80, COIL-NU-1, NU-2, COIL-LP, COIL-DP , COIL-SU-1, SU-2, COIL-NP-1/4, NP-2/4, COIL-SP-0, COIL-SP-1, SP-2, COIL-SP-1/4, SP-2/4

Types with the fan: COIL-KT-1, COIL-KT, COIL-KO (mokré prostředí), COIL-KT-2, COIL-KO-2 (mokré prostředí), COIL-KT-3, COIL-MT, COIL-MO (wet areas), COIL-T 80, COIL-T 60, COIL-SK, COIL-NK, COIL-NK-2, SK-2, COIL-NK-1, SK-1, COIL-KP, COIL-KT-0, COIL-DK, COIL-HC, COIL-HC4p., COIL-MT-2, COIL-T50, COIL-NU-1, NU-2

Electric: COIL-TE

designed for heating, eventually additional cooling of dry and wet areas, meet general requirements according to Government Regulations no. 190/2002 Coll., which are concretised by CSN EN 442-1 listed in the Certificate E-30-00053-07. This certificate was issued to the company MINIB s.r.o. by Strojírenský zkušební ústav s.p. (The Testing Institute of Engineering) in Brno, by notified person 1015 for heating units and ensures the conformity of all products placed on the market with technical documentation and with general requirements.

In Prague on 2008-11-01

Monika Nováková
Company Executive

CERTIFICATE OF WARRANTY

MANUFACTURER: MINIB s.r.o.
Střešovická 405/49, 162 00 PRAGUE 6
Reg. No.: 25732153, TIN: CZ25732153

For floor, parapet and wall mounted convectors (FAN-COIL) marked:								
Types without ans	**Length**	**Serial no.**	**Types without fans**	**Length**	**Serial no.**	**Types with fans**	**Length**	**Serial no.**
COIL-P			COIL-SP-1/4, SP-2/4			COIL-SK		
COIL-PT,PO			COIL-SP-1, SP-2			COIL-NK		
COIL-PT80			COIL-SP-0			COIL-NK-1		
COIL-PT180			COIL-DP			COIL-NK-2		
COIL-PT300			**Types with fans**			COIL-KP		
COIL-PW						COIL-TE		
COIL-NP-1			COIL-KT, KO			COIL-MT-2		
COIL-NP-2			COIL-KT-2, KO-2			COIL-DK		
COIL-PT/4, PO/4			COIL-KT-3			COIL-NU-1, NU-2		
COIL-P80			COIL-MT, MO			COIL-SK-1, SK-2		
COIL-NU-1, NU-2			COIL-T60, T80			COIL-KT-0		
COIL-LP			COIL-HC			COIL-KT-1		
COIL-SU-1, SU-2			COIL-T50					
COIL-NP-1/4, NP-2/4			COIL-HC4p.					

1) The full warranty is provided for the period of 2 years (parts and service).
2) The functionality of the MINIB fin heat exchanger is covered by 10-year warranty.
3) The 10-year warranty is provided against rusting-through of the stainless steel trough.
4) The covering walkout grille supplied as standard is designed for loads by walking adult person (the grille is not suitable for extreme point loads).
5) The warranty does not cover damage caused by incorrect installation and handling. Further, damage or wear caused by normal or faulty use resulting in eventual mechanical damage shall not be covered.
6) The effective date of warranty starts at the same date when the tax voucher is issued.

Note !
Fan axes at convectors designed for wet areas must be lubricated with oil at least prior to and after the heating season.

In Prague on 2008-11-01

Monika Nováková
Company Executive