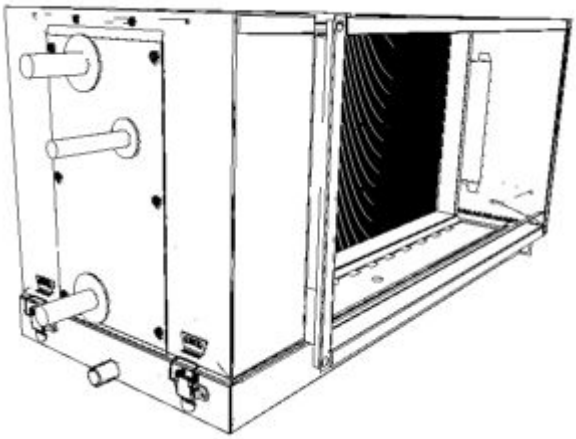
PGDX



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FITTING INSTRUCTION

The PGDX duct cooler is intended for direct expansion (DX).

IMPORTANT: Please read this instruction before installation.

Mech-Elec®

Art.nr: 172380-03

Design/Installation

The PGDX duct cooler is intended for direct expansion. The cooling coil has copper tubes and aluminium fins. The stainless steel drip tray has a gradual slope towards the drain connection. The cooler must be connected so that the finned coil, drip tray, droplet eliminator and condensate outlet are easily removable and are accessible for cleaning (see also under Cleaning).
The duct cooler can be installed either upstream or downstream of the fan unit in a horizontal duct, and the air cooler is either bolted to the duct system or connected by means of slip clamps. If the cooler is located downstream of the fan, it should be installed so that the airflow across the coil will be uniform. In order to ensure maximum cooling capacity and reliable operation, it is inadvisable to install the cooler immediately downstream of the fan outlet or a duct bend. If the cooler is installed upstream of the fan, check that the fan motor and other components are suitable for the humid air downstream of the cooler.
Max. air velocity without droplet eliminator: 2.5 m/s.
The finned element is reversible to enable the direction of airflow to be altered. The coil should be connected so that counter flow will be achieved (i.e. the refrigerant and air flow opposite directions).
The ½" condensate outlet (K) should be connected across a water trap in order to prevent air leakage.
N.B. The size of the outlet should be determined so that no stagnant water will remain in the drip tray.

An efficient air filter is recommended for the system. The filter must not be installed immediately downstream of the cooling coil.

The outside of the duct cooler must be insulated so that no condensate will form on the outside. The ducts carrying cooled air must also be insulated.

Make sure that the cooler connections are not subjected to expansion forces in the system or to the deadweight of the pipe system.

Before the pipes are connected to the system, place the pipe gaskets (supplied) on the connections. Make sure that the gaskets are not subjected to excessive heat during brazing. An expansion valve with external pressure equalization is recommended in order to optimise the evaporation and reduce the risk of liquid refrigerant being admitted into the compressor. See the capacity tables for details of airflow and other technical particulars.

Design data

Max. operating pressure: 3,2MPa (32 bar).
Max. test pressure: 4,8 MPa (48 bar).

All coils are pressure tested and tested for leakage.

On delivery, the coil is pressurised with dry air at a pressure of 2 bar. Check the pressure before installation.

To change the direction of air flow

In order to achieve maximum cooling capacity and reliable operation, the finned element must be turned to suit the direction of air flow. See Figure 1 and Figure 2.
If the direction of airflow is changed, proceed as follows (see Figure 3):

1. Remove the drip tray.
2. Remove the screws retaining the finned element on the front.
3. Withdraw the finned element, turn it through 180° and push it back in.
4. Ensure that the sealing strip is tight against the front before the front is bolted back into place.

RIGHT-HAND connection (as delivered)

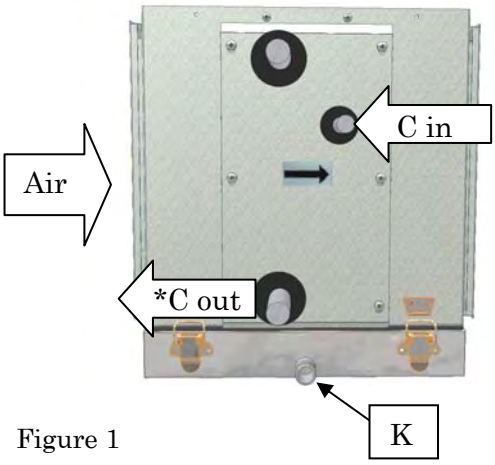

Figure 1

LEFT-HAND connection

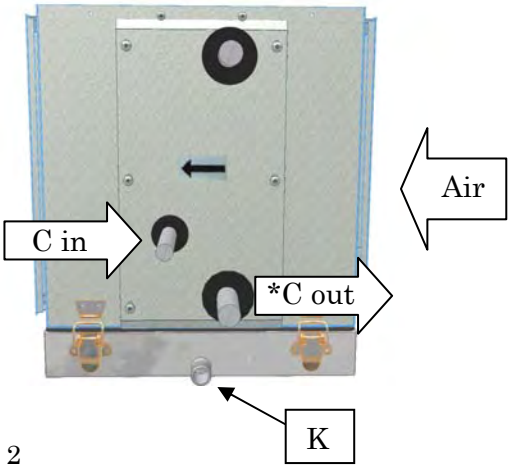

Figure 2

*The smaller models have only one outlet.

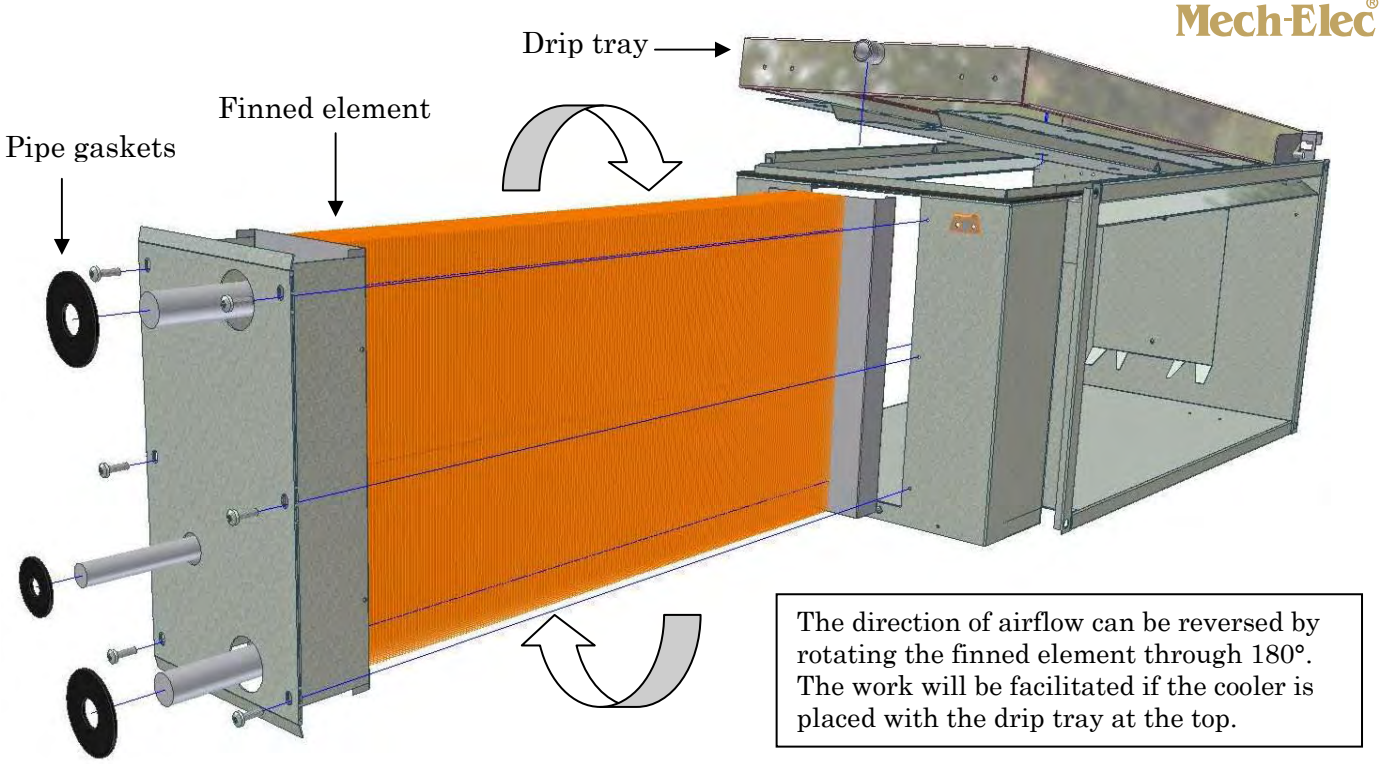

Figure 3

To fit the droplet eliminator

Droplet eliminator DE must be installed downstream of the cooling coil in the duct cooler. Remove the drip tray on the underside. Push the droplet eliminator up until the holder secures it in place (see Figure 5). Carefully check that the arrow on the droplet eliminator corresponds to the direction of airflow and that the drain holes (B) face downwards towards the drip tray (see Figure 4).

Cleaning

In order to ensure full capacity of the duct cooler, the finned coil and droplet eliminator, if fitted, must be regularly cleaned. The intervals between cleaning are entirely dependent on the cleanliness of the air and on how well the filter and the remainder of the system are maintained.
CAUTION. Make sure there is no one below the drip tray when it is being removed.
Remove the condensate outlet and blank off the connector so that any remaining condensate will not run out. Remove the drip tray by releasing the excentric lock on the front. Lower the drip tray about 2 – 3 cm and then move it towards the back so that the locking mechanism at the back will be released. The drip tray is held captive by hinges the rear, but it can easily be released to enable it to be removed from the cooler. If a droplet eliminator is fitted, push the holder to the side (see Figure 4), and remove the droplet eliminator for cleaning with compressed air or warm water. Use a soft brush to clean the inlet side of the coil, and the entire coil can then be cleaned with compressed air or by vacuum cleaning. Blow the dirt away in a direction away from the air outlet side and towards the inlet side. Take care not to deform the edges of the fins. Clean the bottom of the drip tray, and check that no dirt is lodged in the condensate outlet.

Then refit the droplet eliminator, drip tray and anti-condensation insulation.

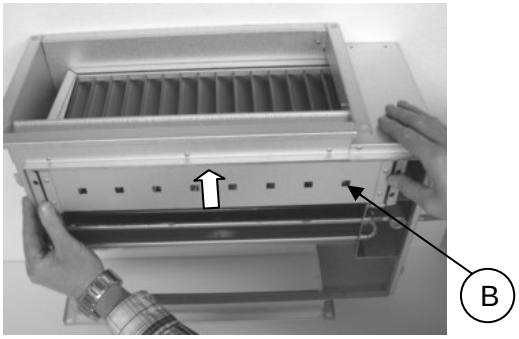

Figure 4

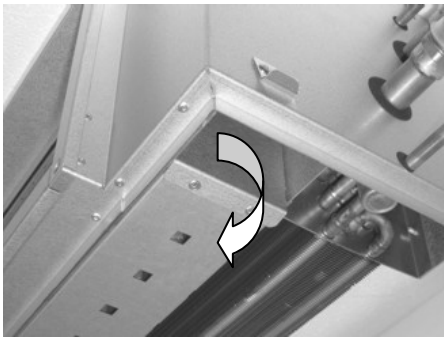

Figure 5