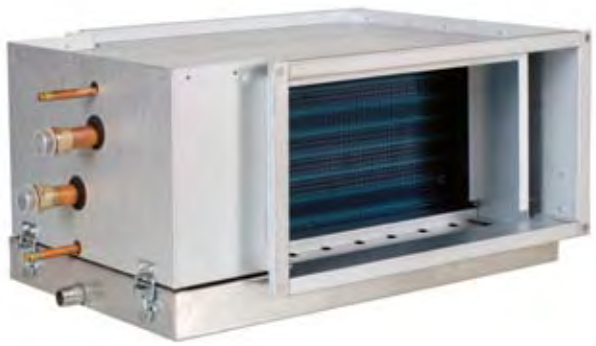
PGK

GB

FITTING INSTRUCTION

Duct cooler for cold water for mounting in rectangular ventilation ducts.

IMPORTANT: Please read this instruction before installation and connection of the product



Mech-Elec®

Art.nr 172355 utg.1

Installation

The PGK duct cooler is designed for using chilled water as the cooling medium. The duct cooler coil consists of copper tubes and aluminium fins. The cooling coil **must not** be used for direct-expansion refrigerant.
The air flow, water flow and other technical particulars are given in the capacity tables.
The cooler should not be installed close to a fan outlet or a duct bend, since the air flow across the coil would then be uneven and the cooling capacity would thus be impaired.
The cooler must be installed so that the finned coil, drip tray and condensate outlet are accessible for cleaning (see also under the heading Cleaning).
The duct cooler should be installed in a horizontal duct, but the air flow may be in either direction.
The duct cooler should be secured to the duct system by means of screws or slip joints.
The condensate outlet (C in Figure 1) should be connected across a water trap in order to avoid air leakage. N.B. The size of the outlet should be such that no water will remain in the drip tray. When the drip tray is to be removed, ensure that the condensate outlet is easy to disconnect.
An efficient filter is recommended in the system in order to reduce fouling and thus also cut down the need for maintenance (see also under the heading Cleaning).
The duct cooler should be installed downstream of the fan unit, although it can also be installed upstream, but care should then be taken to ensure that the fan motor and other components will not be harmed by the humid air downstream of the cooler.
The duct cooler must be insulated on the outside, so that no condensate will form. The ducts that carry the chilled air must normally also be insulated.

Water connections

Operating data: Max. operating temperature/operating pressure 100℃/1.0 MPa (10 bar)

The following must be taken into account when connecting the duct cooler to the pipe system.

1. The pipes connected to the cooler must not be subjected to twisting or bending loads. Use tools to restrain the pipes when tightening the coupling nuts.
2. Ensure that expansion forces in the system or the deadweight of the pipe system are not applied to the connections on the cooler.
3. The water inlet must be connected to the lower pipe (marked Inlet in Figure 1) and the outlet to the upper pipe (marked Outlet in Figure 1). The inlet is provided with a drain connection (A in Figure 1) and the outlet with an air purging connection (B in Figure 1).
4. After the system has been filled with water, check the duct cooler and its connections to ensure that there is no water leakage. Any leakage could cause water damage.
5. The cooling coil can be drained of water through the drain connection (marked A in Figure 1).

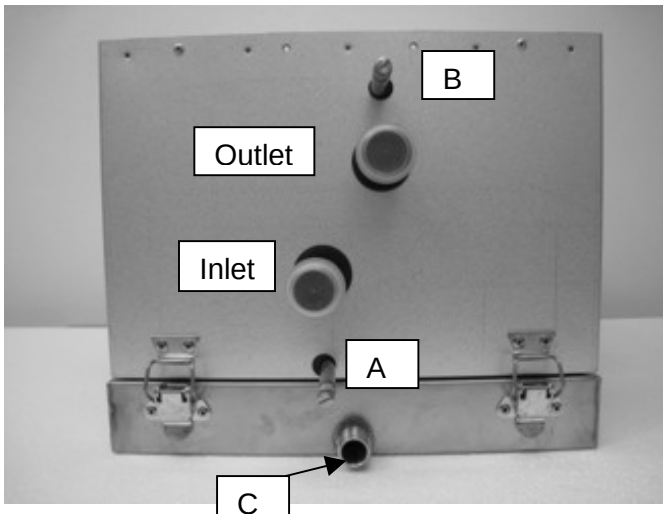


Figure 1

CAUTION. If the water in the coil should freeze, the coil may burst which would allow water to run out of the system, and this could cause water damage. When the duct cooler is not in service and there is risk of freezing, the cooler should be drained of water through the drain connection and blown with compressed air to ensure that all water has been drained.

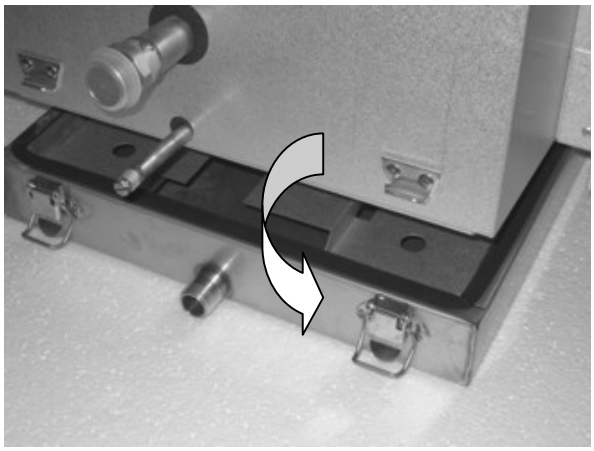


Figure 2

Figure 3

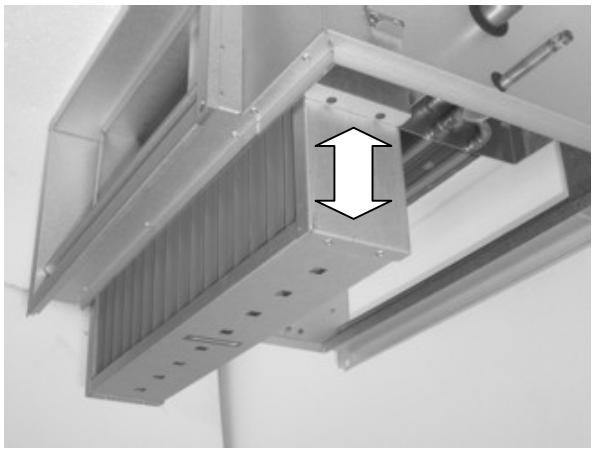


Figure 4

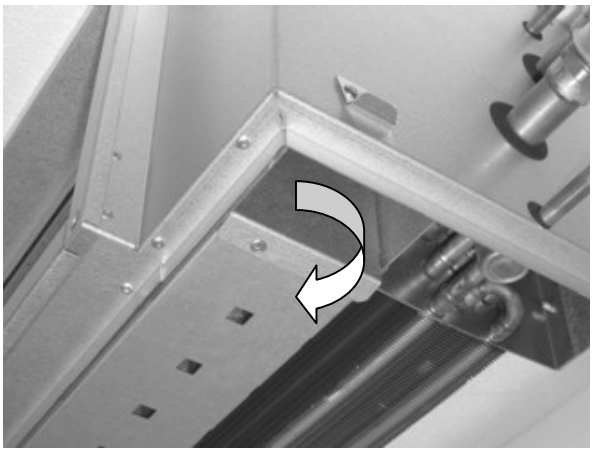


Figure 5

Droplet eliminator

Droplet eliminator DE must be installed downstream of the cooling coil in the duct cooler, viewed in the direction of air flow.

Remove the drip tray from underneath. Push the droplet eliminator up until the holder secures it in position (see Figure 5). Carefully check that the air flow is in the direction of the arrow on the droplet eliminator and that the drain holes face downwards towards the drip tray (see Figure 3).

Cleaning

In order to ensure full cooling capacity of the duct cooler, the finned coil and the droplet eliminator, if any, must be regularly cleaned. The intervals between cleaning are entirely dependent on the cleanliness of the air and on how well filters and the system in general are maintained.

CAUTION. Make sure that there is no one underneath the drip tray when it is being removed.

Disconnect the condensate outlet, and blank off the connection so that any remaining condensate will not run out.

Remove the drip tray by releasing the four fasteners at the front and rear (see Figure 2).

If a droplet eliminator is fitted, push the holders to the side (see Figure 3), and remove the droplet eliminator for cleaning with compressed air or warm water.

Then clean the inlet side of the coil with a soft brush, and the entire coil can then be cleaned by means of compressed air or by vacuum cleaning. Blow away the dirt in a direction from the outlet side of the air towards the inlet. Take care not to deform the thin fin edges.

Clean the bottom of the drip tray and check with your finger that the condensate outlet is not clogged with dirt. Then fit the droplet eliminator, if any (see under Droplet eliminator), the drip tray and the anti-condensation insulation.

Unit capacity tables

Capacity PGK 400x200-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
576	31	25	50	17,0	1,53	0,06	1
576	36	30	45	19,0	2,50	0,10	3
864	66	25	50	18,4	1,89	0,08	2
864	72	30	45	20,2	3,26	0,13	5
1152	113	25	50	19,2	2,20	0,09	2
1152	119	30	45	20,8	4,15	0,17	7

Capacity PGK 500x250-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
900	31	25	50	17,0	2,38	0,09	2
900	36	30	45	18,6	4,27	0,17	5
1350	66	25	50	18,2	3,02	0,12	3
1350	72	30	45	19,4	6,16	0,25	9
1800	113	25	50	18,9	3,61	0,14	4
1800	119	30	45	19,8	8,34	0,33	15

Capacity PGK 500x300-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
1080	31	25	50	17,1	2,83	0,11	1
1080	36	30	45	18,8	4,93	0,20	4
1620	66	25	50	18,4	3,56	0,14	2
1620	72	30	45	19,7	6,94	0,28	7
2160	113	25	50	19,1	4,22	0,17	3
2160	119	30	45	20,1	9,40	0,37	12

Capacity PGK 600x300-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
1296	31	25	50	17,3	3,3	0,13	1
1296	36	30	45	19,0	5,69	0,23	3
1944	66	25	50	18,6	4,13	0,16	2
1944	72	30	45	19,8	8,12	0,32	6
2592	113	25	50	19,3	4,90	0,20	3
2592	119	30	45	20,1	11,18	0,45	11

Capacity PGK 600x350-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
1512	31	25	50	17,3	3,86	0,15	1
1512	36	30	45	19,0	6,64	0,26	3
2268	66	25	50	18,6	4,82	0,19	2
2268	72	30	45	19,8	9,48	0,38	6
3024	113	25	50	19,3	5,72	0,23	3
3024	119	30	45	20,1	13,05	0,52	11

Capacity PGK 700x400-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
1920	47	25	50	17,1	5,02	0,20	1
1920	55	30	45	18,1	8,66	0,35	2
2880	91	25	50	18,5	6,20	0,25	1
2880	100	30	45	18,8	12,94	0,52	4
3840	142	25	50	19,3	7,26	0,29	2
3840	151	30	45	19,0	18,41	0,73	8

Capacity PGK 800x500-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
2743	47	25	50	17,1	7,20	0,29	1
2743	55	30	45	17,6	13,59	0,54	3
4115	91	25	50	18,4	9,04	0,36	1
4115	100	30	45	18,0	21,61	0,86	6
5486	142	25	50	19,0	10,82	0,43	2
5486	119	30	45	18,6	28,41	1,13	10

Capacity PGK 1000x500-3-2,0 — Water temperature 6 / 12°C

Airflow	Pressure drop	Air in	Air in	Air out	Output	Water flow	Pressure drop water
m³/h	Pa	°C	% RH	°C	kW	l/s	kPa
3429	47	25	50	17,5	8,56	0,34	1
3429	55	30	45	17,9	16,13	0,64	2
5144	91	25	50	18,7	10,72	0,43	1
5144	100	30	45	18,0	26,77	1,07	6
6858	142	25	50	19,3	12,85	0,51	2
6858	151	30	45	18,6	35,52	1,41	10