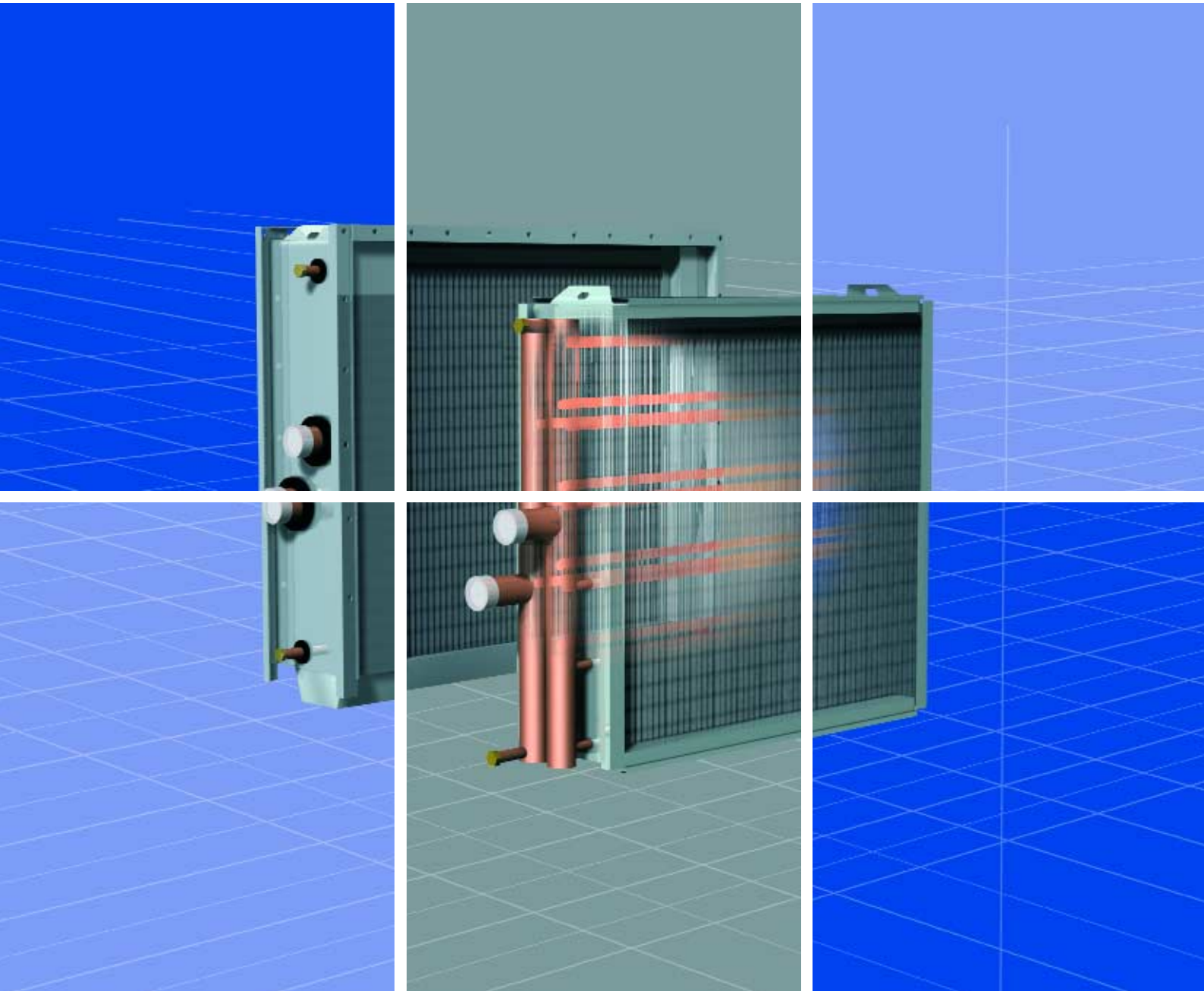


Heat Exchangers

COILTECH

This catalogue contains a selection of our most popular products.
Contact us if you need products that you cannot find in this catalogue.

Product Overview - Range of Application

Product Overview - Types of Coil

Heating Coils

Heating Coils for Warm and Hot Water

Heating Coils for Steam

Heating Coils (continue)

Cooling Coils

Heat Recovery Coils - ECOTERM

Coils for Every Purpose

Finned-tube heat exchangers are used for heating and cooling air in ventilation systems, for example. Since every product is custom-made to fill a special purpose, two coils seldom look alike. However the fundamental principle is always the same. The coils are constructed of a large number of thin sheet metal fins, with holes for the tubes. The tubes are fitted into the fins where they are mechanically expanded to fit snugly. This design enables the liquid flowing through the tubes to heat or cool the air passing through the coil in an extremely effective manner.
The fins are commonly made of aluminium and the tubes are of copper, however they can be made of other materials as well.

Coils of this type can be used for a variety of different applications. Besides heating, cooling and heat recovery in ventilation systems, the coils are used for:
- The cooling of generators and big electric motors
- The cooling of oil circulated in transformers and loco motives
- The recooling of chilled water, for example, in statio nary diesel motors
- Lumber and pulp drying
- The cooling of cold storage and freezing rooms
- Dumping waste condensation heat from cooling machines, etc.

This catalogue shows our standard range of finned heat exchangers.
Contact us whenever you need assistance with sizing. We offer solutions designed to meet all your requirements.

Product selection program Coils

Use Coils for Windows

Coils for Windows makes it easy to select the right heat exchanger product from our range:
Products for

- **Heating of air with hot water**
- **Cooling of air with chilled water**
- **Cooling of air with evaporative refrigerant**
- **Heating of air with steam or other condensing media**
- **Ecoterm liquid-coupled heat recovery system**
- **Fan-assisted air heaters**
- **Cooling agent coolers**
- **Transformer oil coolers**
- **Cleanable cooling coils**

The computerized program you have installed probably contains only some of these products.

When you start the program, you are given the option of either filling in particulars of your project – or accessing a project you have previously saved. If you need a new estimate, you will have to choose a product before you click on the OK button.
If you choose a heating or cooling coil, you'll come directly to the coil estimate window. Here you can enter your design data. The results will then appear in this window. At the top of the menu, there are four tabs: Water, Evaporative, Condensing and Steam. These headings enable you the select the appropriate medium to be circulated inside the heat exchanger. Move between the input fields by pressing the tab key or by using the mouse.

Perhaps you would like to specify the airflow in cubic metres per hour?
If so, click on the Settings button. Here, you'll find a variety of important settings that affect your calculation, such as the unit to be used for airflow, etc. You can also enter settings that will affect your print-out. Go to the File Menu and choose Printout Settings/printout format. There, you can decide how the printout heading is to appear and choose the language to be used in the printout. Would you like the settings to remain the same the next time you use the program? If so, choose Alternative/Save settings on the menu line.

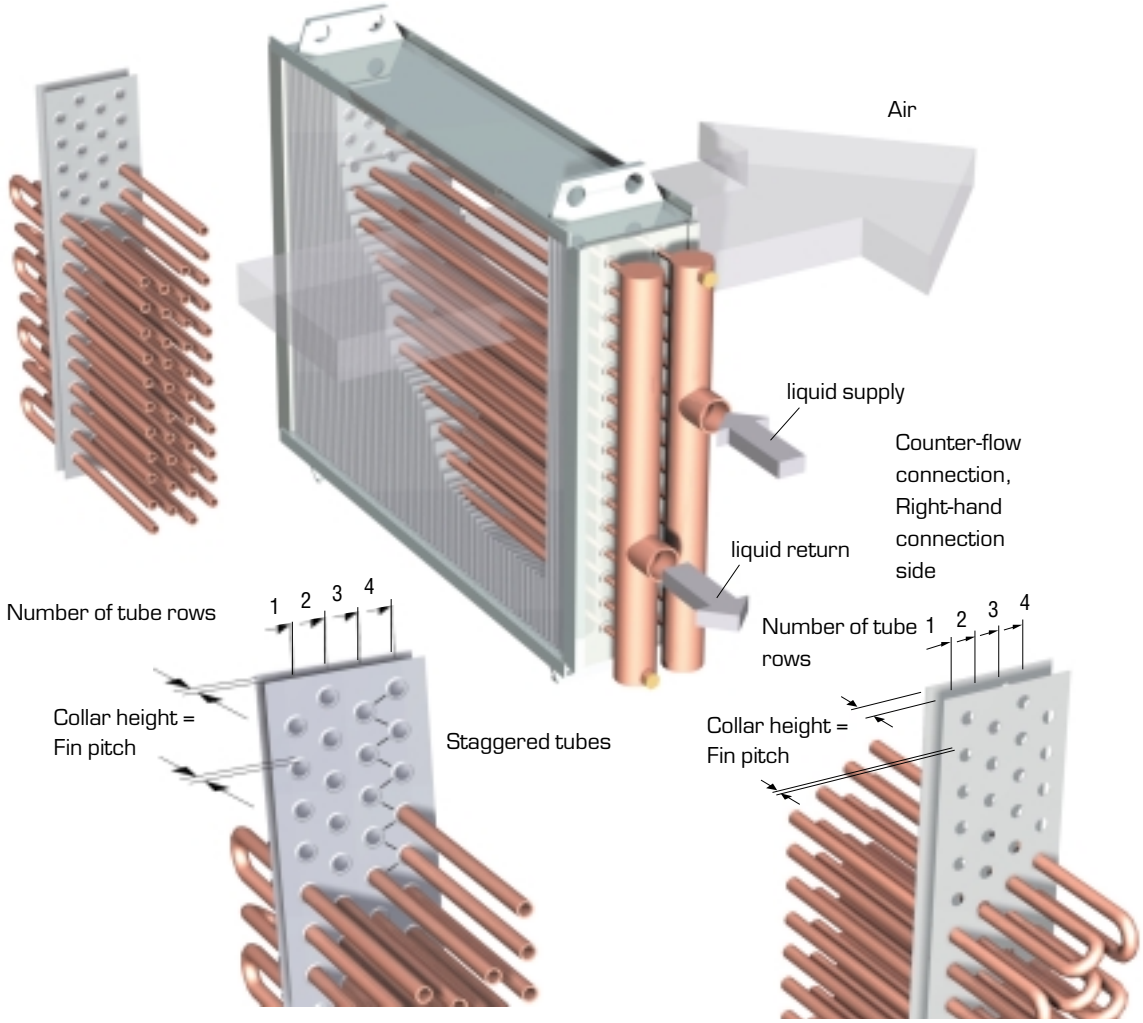
Go back to the Estimate Form. You will be first given the chance to choose the appropriate coil application, such as Air Handling Unit Coil. If you then would like to specify the coil type yourself, (the program can of course do this for you), click on the arrow to the right of the field for Type. There you will obtain information about the options available. You can choose coil dimensions in the same way – if you don't want the program to choose this for you. The relevant ordering code will then automatically appear a little further down in the menu. You can also enter the coil dimensions directly in the code if you like. Go to the field for ordering code and press <F1>. You'll then obtain a help window with an ordering key.

If you desire particulars of non-standard dimensions or materials, there is a button marked with an X. Click on this button to view a dialogue window for special coils.

The calculation will start when you click on the Calculate button in the Tool Bar. When you've read the results, you can, for example, change the number of tube rows and make a new calculation.

There are also buttons in the Tool Bar for saving, previewing and printing out the relevant estimate. You can also save, preview and printout from a roll-down menu under File. There are also menu options New, Open, Save and Exit that exits the application.

General



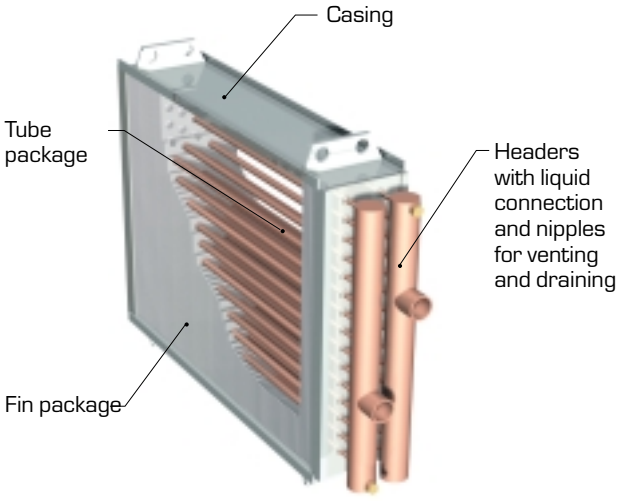
Heat exchangers (coils) are designed mainly for the heating and cooling of air or other gases.
Warm or hot water, oil, process liquid or steam, etc. are used as the heating medium. Chilled water, evaporative refrigerant, oil or other liquids are used as the cooling medium.
The coils are available in versions for e.g. installation in ducts, air handling units or plant rooms, various materials and fin pitches.
All the coils for ducts conform to Tightness Class B on the air side.
Precise production ensures coils of high quality and capacity.

We also maintain a documented quality management system in accordance with the provisions of SS-EN ISO 9001:1994 Standard. We have received environmental management certification in accordance with SS–EN ISO 14001:1996.
For sizing, dimension sketches and instructions, we refer to our calculation program, COILS. The calculation program is obtainable through your local Coiltech Company.
The heat exchangers are produced in sizes up to 10 x 2.4 m and for airflows up to 100 m^3/s.
They are designed for horizontal or vertical airflow.

Design – Materials

Design

The coils are designed mainly for the heating or cooling of air. Some types of coils are specially designed for recovering heat. A coil consists of a number of staggered tubes arranged in one or several rows, in the direction of the airflow.
The tubes are connected together to form loops with lengths suited for the various types of coils. The heating or cooling medium flows through the loops while the air flows around the external surfaces.
The tubes are fitted with profiled fins to provide a sufficiently large heating or cooling area and thus compensate for the low heat transfer coefficient on the air side.
The fins are fixed onto the tubes by means of expansion of each tube. This provides excellent heat transfer to the fins. The copper tubes are completely protected by the fins.
The tubes are brazed to the headers that have pipe connections with external thread. The headers have plugged connections for venting and drainage.
The connection for drainage can be fitted with a sensor for a freeze guard thermostat.
The coils are enclosed in a casing with slip-clamp or flanged connection or smooth panels on the air side.
The slip-clamp connected coils are designed for installation in ducts, whereas the flanged coils are designed for installation in a plant room.
The smooth panels are used for coil installation inside an air handling unit casing.



Material Variants

The standard coils are well suited for most ventilation and air handling unit installations, which involve more than 90 % of all the coils produced. If required, we can make available various methods for protection against corrosion, as described below.
If your application requires a special version that isn't described here, please contact us.

	Ventilation coils			
Material	Fins	Tubes	Headers	Casing
Aluminium	s			
Copper	x	s	x	
Copper, electro-tinned	x	x	x	
Copper/nickel		x	x	
Corropaint epoxy-coated aluminium	x			
Painted steel			s	
Galvanized steel				s
Stainless 304L/316L				x

s = Standard version
x = Special version on enquiry

Casing

The casing of the coils for ducts and air handling units are as standard made of galvanized or stainless sheet steel (AISI 304L) but are also available made of acid-proof sheet steel (AISI 316L).
The coils for industrial applications are produced like those for ventilation and air handling unit applications with casing made of galvanized or stainless sheet steel (AISI 304L) but are also available made of acid-proof sheet steel (AISI 316L).

Tubes

The tubes in the coils for ducts and air handling units are in the standard versions made of 0.35 mm thick copper; however they are also available with thicker walls: 0.65 mm or 0.85 mm.
The coils for industrial applications are available with electro-galvanized, hot-dipped-galvanized, stainless steel or titanium tubes.

Headers

The headers of the coils for ducts and air handling units are as standard made of steel or copper, however they are also available made of copper/nickel.
The coils for industrial applications are available with hot-dipped-galvanized headers; there are also headers made of stainless steel, plastic-coated, hot-dipped-galvanized steel or titanium.

Material – Corrosion Protection

Fins

The fins of the ventilation and air handling unit coils are as standard made of aluminium. Copper fins, epoxy coated aluminium fins and electrotinned copper fins are also available as options. The fins are normally pleated to provide maximum efficiency; however a version with smooth fin surfaces is also available – advisable for use if the flow of air contains dust.
For particulars of Corrodip, see separate description under Corrosion Protection.
Coils for industrial applications are available with hot-dipped-galvanized sheet steel fins and sheet steel fins plated with zinc and aluminium.

Solder

All joints are brazed with brazing (hard) solder. Copper against copper joints are brazed with silver solder having silver content 2 %. Copper against steel joints are brazed with silver solder having high silver content. Coils for steam and copper/nickel coils are always brazed with silver solder. Coils having joints brazed with 55% silver solder can be selected if they are to withstand aggressive media. Contact us for particulars.

Corrosion Protection
Corropaint

Epoxy pre-coated aluminium fins. Coating thickness: 5 µm.
Range of application: Moderately corrosive environments in which aluminium corrosion is likely to occur.
Examples: Fouled air in metropolitan areas, laboratories, public baths and similar.
Limitations: Droplet eliminators are required on cooling and extract air coils if the air velocity through the coil exceeds 1.5 m/s. Max. permissible temperature: 120° C. Impairs coil heat transfer performance by max. 10%.

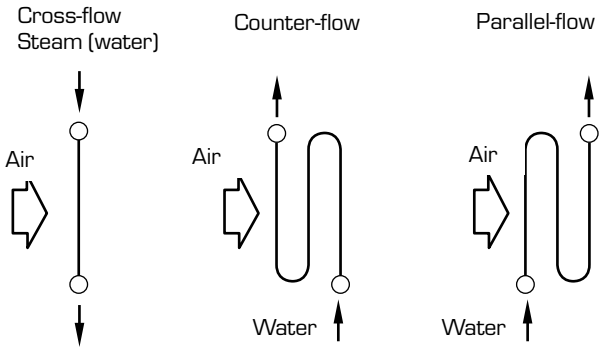
Corrodip (epoxy-painted coil)

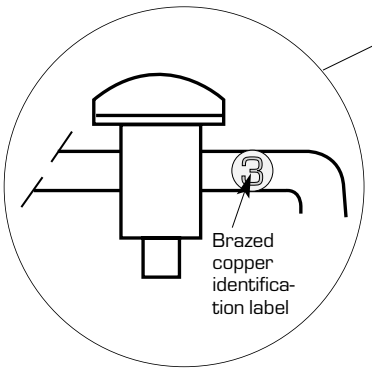
Finished coil bodies are completely epoxypainted to provide all fin surfaces and headers with a protective coating.
Surfaces are painted with 20 µm thick primer and an 80 µm thick top coat. The colour is black.
Range of application: Extremely corrosive environments.
Examples: Wastewater treatment plants, paper mills, acidiferous environments, dairies (food preparation environment).
Limitations: The smallest permissible fin pitch is 4 mm; the max. permissible temperature is 60 °C.
Impairs coil heat transfer performance by approx. 20%.

Various Modes of Connection – Coils for Evaporative Refrigerant – Output Stages, Velocities

Various modes of connection

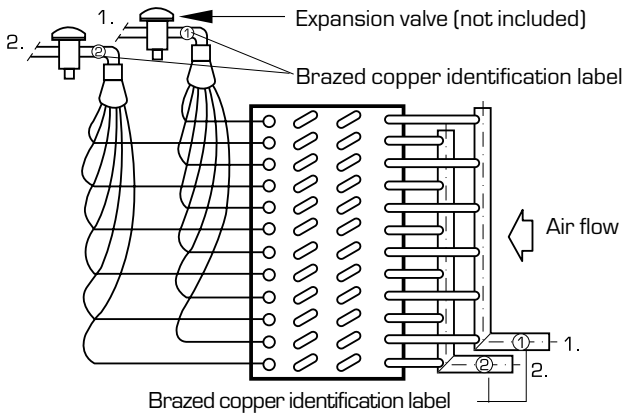
Various modes of connecting the tubes/loops may be adapted to vary the flow relationship between the heating or cooling medium and the air flow as seen in the figures below.
CROSS-FLOW CONNECTION is used for condensing steam and on heating coils with minor capacity drain.
COUNTER-FLOW CONNECTION is most common and is used for cooling coils, heating coils, heat recovery coils and heat exchange with high output. The mode of connection provides the highest capacity.
PARALLEL-FLOW CONNECTION is sometimes used for heating coils in applications in which priority is assigned to the option of fitting the coil with a sensor for a freeze guard thermostat. If cooling coils have been incorrectly installed and this mode of connection has been used, this may reduce their capacity by 10% – 20%.
In such cases in which the flow direction of the heating/cooling medium is decisive for coil performance, the direction of airflow is marked on the coil.



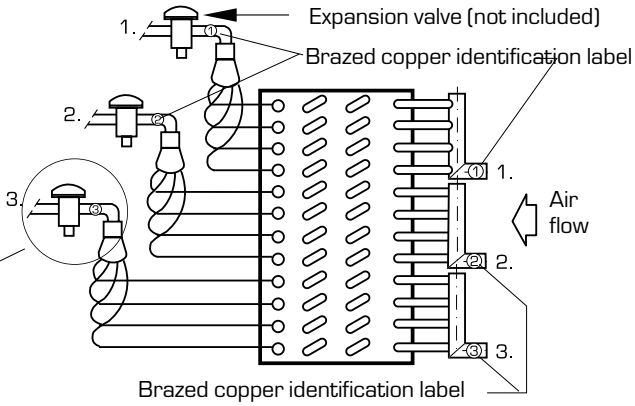


Coils for Evaporative Refrigerants – Output Stages

Coils used for evaporative refrigerants can be supplied with the total output broken down into two or more output stages (depending on the height of the coil).
Coils with two output stages are normally connected so that every other loop belongs to output stage 1 and the intervening loops belong to stage 2. This is known as interlace connection.
The liquid connections and pipes are labelled to identify which output stage they belong to.



Stage divisions, labelling



Three or more output stages are normally split up vertically.

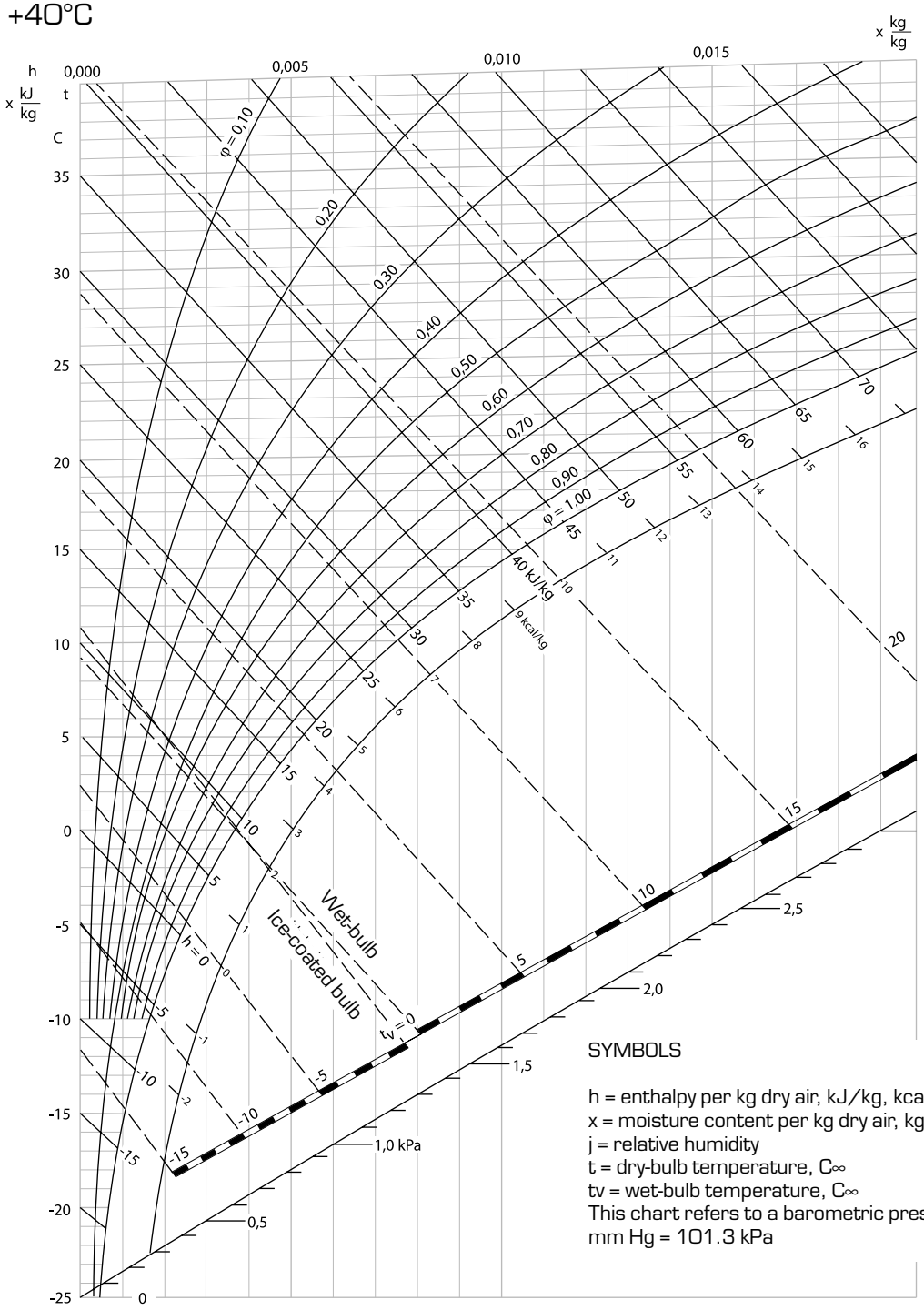
Normal Velocities for Coils

	Cooling coil, m/s	Heating coil, m/s
Air velocity	2 – 3 1)	2 – 5
Liquid velocity	0,2 2) – 2 3)	0,2 2) – 1,5 3)

1) A droplet eliminator should be fitted if the air velocity exceeds 3 m/s.
2) Min. permissible velocity depending on the temperature of the liquid.
3) Max. permissible velocity for copper tubes due to the risk of erosion.
The water velocity in coils with steel tube loops should not exceed 3 m/s.

Mollier Chart for Moist Air

Air –25 to +40°C



Equations:

Dry air $P = r \cdot c_p \cdot \Delta t \cdot q$
Moist air $P = r \cdot \Delta h \cdot q$

where P = output in kW
r = 1,2 kg/m³ at 20°C
c_p = 1,0 kJ/kg, °C

Δt = temperature difference in °C
Δh = enthalpy difference in kJ/kg
q = air flow in m³/s

Formulas

AIR

Heating coils

Output: $P = q\,(m^3/s) \cdot \Delta t\,(°C) \cdot 1{,}2$ kW

Airflow: $q = \dfrac{P\,(kW)}{\Delta t\,(°C) \cdot 1{,}2}$ m^3/s

Temp. difference: $\Delta t = \dfrac{P\,(kW)}{q\,(m^3/s) \cdot 1{,}2}$ °C

Efficiency: $\eta = \dfrac{t_u - t_i}{t_{ri} - t_i}$

Cooling coils

Output: $P = q\,(m^3/s) \cdot \Delta i\,(kJ/kg) \cdot 1{,}2$ kW

Airflow: $q = \dfrac{P\,(kW)}{\Delta i\,(kJ/kg) \cdot 1{,}2}$ m^3/s

Enthalpy diff: $\Delta i = \dfrac{P\,(kW)}{q\,(m^3/s) \cdot 1{,}2}$ kJ/kg

Power demand, fan: $P = \dfrac{q\,(m^3/s) \cdot \Delta p\,(Pa)}{\sim 0{,}65\,(\eta) \cdot 1000}$ kW

Mixing of air

Mixing temperature:

$$t = \frac{q_1\,(m^3/s) \cdot t_1\,(°C) + q_2\,(m^3/s) \cdot t_2\,(°C)}{q_{tot}}$$ °C

WATER

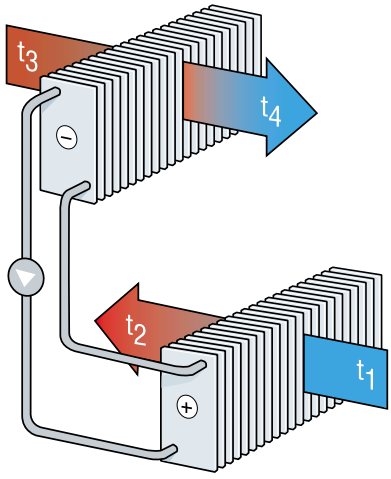
Output: $P = q_r\,(l/s) \cdot \Delta t_r\,(°C) \cdot 4{,}2$ kW

Water flow: $qr = \dfrac{P\,(kW)}{\Delta t_r\,(°C) \cdot 4{,}2}$ l/s

Temp. difference: $\Delta t_r = \dfrac{P\,(kW)}{q_r\,(l/s) \cdot 4{,}2}$ °C

Power demand, pump: $P = \dfrac{q_r\,(l/s) \cdot \Delta p_r\,(kPa)}{\sim 0{,}75\,(\eta) \cdot 1000}$ kW

HEAT RECOVERY



Temperature efficiency: $\eta_t = \dfrac{t_2 - t_1}{t_3 - t_1}$

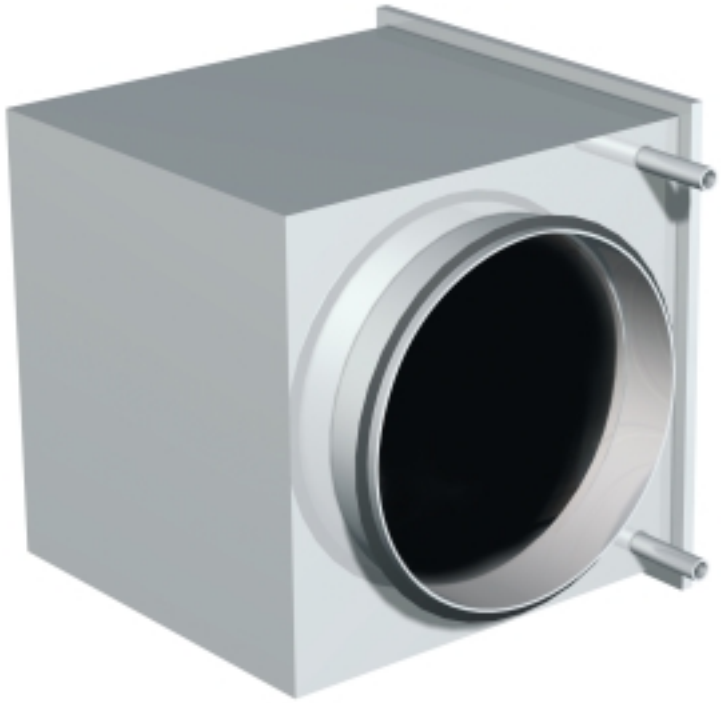
Optimal brine flow $q_r \approx \dfrac{q_1\,(m^3/s) + q_2\,(m^3/s)}{6}$ l/s

Notes

Ventilation Coils for Installation in Ducts and Plant Room Walls

Notes

Heating Coils for Hot Water for Connection to Circular Ducts



For heating air with warm or hot water

Design

Coils with enclosed headers and circular duct connections: **QJHD**
Available in 8 sizes.
Normal air velocity 3– 4 m/s.
Easy to size using our computerized product selection program called Coils that you'll find under the heading: Heating and Cooling Coils, or using the appropriate sizing page in this catalogue.

Features

– Conform to AMA Code QFC.1.
– Designed for air flows up to 1400 l/s
– Conform to Tightness Class B to Swedish Standard VVS AMA 98
– Enclosed headers
– Adapted to meet Standards for Circular Ducts
– Simple to install
– Removable cover panel for cleaning.

Heating Coils for Hot Water for Connection to Circular Ducts

Design
The arrangement of the tubes mounted in the coil is staggered for the effective transfer of heat from the circulating medium to the air.
The coil casing conforms to the provisions of Tightness Class B to VVS AMA 98 Standard.
The casing is equipped with a circular connection that fits against ducts that conform to Swedish Circular Duct Standard SIS 82 72 06.
The connection spigot is fitted with a gasket. A removable cover panel is secured to the connection side of the coil for cleaning and inspection.

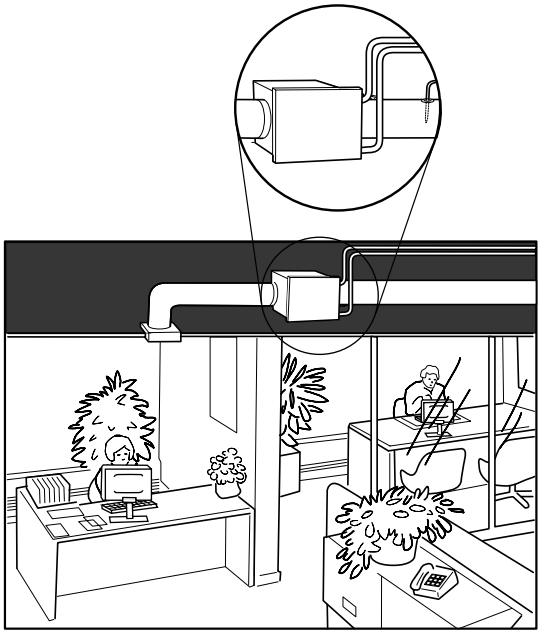
Materials and Surface Treatment
The coil consists of copper tubes and aluminium fins.
The casing is made of hot galvanized sheet steel.
The pipe connections on the water side are made of copper.

Sizing
Use our product selection program called Coils for sizing, or the appropriate sizing page in this catalogue.
The program specifies the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material codes, coil data and product code.

Installation
Clamp ring couplings (not included) are used for connecting the pipes on the liquid side to the pipework. The lower pipe is normally the inlet to facilitate venting. On the air side, the heater can be mounted either horizontally or vertically with optional venting.



Maintenance
Operating and maintenance instructions can be downloaded from our product selection program called Coils or via our website on the Internet.

Environment
An Environmental and Building Product Declaration can be downloaded from our product selection program called Coils or via our website on the Internet.

Technical data
Sizes:	100, 125, 160, 200, 250, 315, 400, 500.
Number of tube rows:	2.
Fin pitch:	2,5 mm.
Max. liquid velocity:	1,5 m/s.

Heating Coils for Hot Water for Connection to Circular Ducts

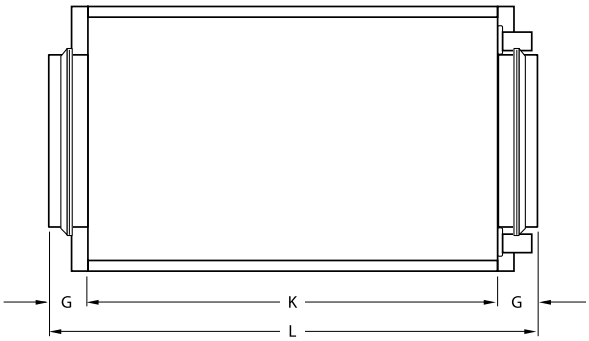
Design Data

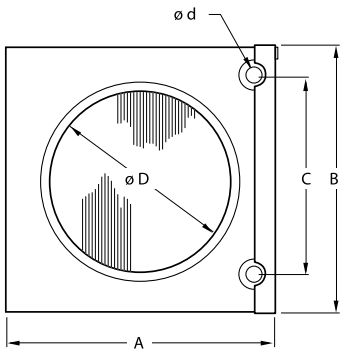
Max. operating temperature: 150 °C.
Max. operating pressure: 1.6 MPa.
All coils are pressure tested and leakage tested with dry air under water. They are designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Product Code

Coil QJHD-aaa

Size **(aaa)**
Circular duct, mm)
100, 125, 160,
200, 250, 315,
400, 500





Size	D	d	A	B	C	G	L	K	Weight, kg
QJHD-100	100	10	225	183	140	40	380	300	3,4
-125	125	10	225	183	140	40	380	300	3,4
-160	160	10	305	258	215	40	380	300	5,1
-200	200	10	305	258	215	40	380	300	5,1
-250	250	22	385	333	290	40	380	300	7,7
-315	315	22	460	408	365	40	380	300	10,0
-400	400	22	540	483	420	70	440	300	13,5
-500	500	22	690	533	425	70	475	335	17,0

Heating Coils for Hot Water for Connection to Circular Ducts

Sizing

Use the tables below, which enable the appropriate size of coil to be determined quickly with sufficient accuracy for practical purposes. If the capacity of one size of coil isn't sufficient for your application, select the next larger size.

If your application calls for air volumes other than those specified in the tables, you can interpolate. Get in touch with your nearest Coiltech sales office if you need further assistance.

Symbols

Δp_t = total pressure drop on the air side .....Pa
Δp_r = pressure drop on the water side .....kPa
q = air flow .....l/s
q_r =water flow .....l/s
P =output .....kW
t_i = inlet air temperature .....°C
t_u = outlet air temperature .....°C
t_{ri} = inlet water temperature .....°C
t_{ru} = outlet water temperature .....°C

Size Code suffix aaa	Airflow q l/s	Pressure drop, air Δp_t Pa	Inlet air temperature t_i °C	Water temperature, tri / tru															
				80 / 60				80 / 40				60 / 40				55 / 35			
				P kW	t_u °C	q_r l/s	Δp_r kPa	P kW	t_u °C	q_r l/s	Δp_r kPa	P kW	t_u °C	q_r l/s	Δp_r kPa	P kW	t_u °C	q_r l/s	Δp_r kPa
100	16	5	0	0,9	46,1	0,01	<1	0,6	32	<0,01	<1	0,6	28,5	<0,01	<1	0,5	25,3	<0,01	<1
			5	0,8	46,9	<0,01	<1	0,6	34,1	<0,01	<1	0,5	30,4	<0,01	<1	0,4	27,0	<0,01	<1
			10	0,7	47,4	<0,01	<1	0,5	36,2	<0,01	<1	0,4	32,3	<0,01	<1	0,4	29,0	<0,01	<1
			15	0,6	48,1	<0,01	<1	0,4	38,0	<0,01	<1	0,4	34,1	<0,01	<1	0,3	31,0	<0,01	<1
	31	16	0	1,4	36,2	0,02	<1	0,8	21,4	<0,01	<1	0,8	19,8	0,01	<1	0,7	17,3	<0,01	<1
			5	1,3	38,1	0,02	<1	0,7	24,3	<0,01	<1	0,7	22,4	<0,01	<1	0,6	20,2	<0,01	<1
			10	1,1	39,8	0,01	<1	0,7	27,2	<0,01	<1	0,6	25,3	<0,01	<1	0,5	23,0	<0,01	<1
			15	1,0	41,6	0,01	<1	0,6	30,1	<0,01	<1	0,5	28,1	<0,01	<1	0,4	25,8	<0,01	<1
	47	33	0	1,8	30,9	0,02	<1	1,0	16,5	<0,01	<1	1,0	17	0,01	<1	0,8	13,5	0,01	<1
			5	1,6	33,3	0,02	<1	0,9	19,9	<0,01	<1	0,8	19	0,01	<1	0,7	16,8	<0,01	<1
			10	1,5	35,6	0,02	<1	0,8	23,2	<0,01	<1	0,7	21,9	<0,01	<1	0,6	20,1	<0,01	<1
			15	1,3	37,9	0,02	<1	0,7	26,5	<0,01	<1	0,6	25,2	<0,01	<1	0,5	23,4	<0,01	<1
125	24	10	0	1,2	40	0,01	<1	0,7	25,2	<0,01	<1	0,7	22,9	<0,01	<1	0,6	20,3	<0,01	<1
			5	1,1	41,5	0,01	<1	0,7	27,8	<0,01	<1	0,6	25,5	<0,01	<1	0,5	22,8	<0,01	<1
			10	1,0	42,9	0,01	<1	0,6	30,4	<0,01	<1	0,5	27,9	<0,01	<1	0,4	25,3	<0,01	<1
			15	0,9	44,2	0,01	<1	0,5	32,8	<0,01	<1	0,4	30,4	<0,01	<1	0,4	27,8	<0,01	<1
	49	35	0	1,8	30,5	0,02	1	1,0	16,2	<0,01	<1	1,0	16,8	0,01	<1	0,8	13,3	0,01	<1
			5	1,7	32,9	0,02	<1	0,9	19,5	<0,01	<1	0,8	18,7	0,01	<1	0,7	16,6	<0,01	<1
			10	1,5	35,2	0,02	<1	0,8	22,9	<0,01	<1	0,7	21,6	<0,01	<1	0,6	19,9	<0,01	<1
			15	1,4	37,6	0,02	<1	0,7	26,3	<0,01	<1	0,6	25,0	<0,01	<1	0,5	23,2	<0,01	<1
	74	72	0	2,3	25,8	0,03	1,5	1,1	12,3	<0,01	<1	1,3	14,6	0,02	<1	1,0	10,9	0,01	<1
			5	2,1	28,5	0,03	1,2	1,0	16,1	<0,01	<1	1,1	17,1	0,01	<1	0,8	13,9	0,01	<1
			10	1,9	31,3	0,02	1	0,9	19,8	<0,01	<1	0,8	19,3	0,01	<1	0,7	17,6	<0,01	<1
			15	1,7	34,1	0,02	<1	0,8	23,5	<0,01	<1	0,7	22,6	0,01	<1	0,6	21,3	<0,01	<1
160	40	5	0	2,5	51,8	0,03	3	1,8	37,3	0,01	<1	1,7	34,7	0,02	1,5	1,5	30,1	0,02	1,1
			5	2,3	53,0	0,03	2,6	1,6	37,7	0,01	<1	1,5	35,7	0,02	1,2	1,3	30,9	0,02	1
			10	2,2	54,2	0,03	2,2	1,4	38,1	<0,01	<1	1,3	36,6	0,02	1	1,0	31,5	0,01	<1
			15	2,0	55,3	0,02	1,9	1,2	39,1	<0,01	<1	1,1	37,3	0,01	<1	0,8	31,8	0,01	<1
	81	18	0	4,0	40,3	0,05	7	2,9	29,2	0,02	1,1	2,6	26,9	0,03	3,4	2,3	23,4	0,03	2,7
			5	3,7	42,3	0,04	6	2,5	30,9	0,02	1	2,3	28,8	0,03	2,7	2,0	25,3	0,02	2,0
			10	3,4	44,3	0,04	5	2,2	32,5	0,01	<1	2,0	30,7	0,02	2,1	1,7	27,2	0,02	1,5
			15	3,1	46,2	0,04	4,4	1,9	34,0	0,01	<1	1,7	32,6	0,02	1,6	1,4	28,8	0,02	1,0
	121	37	0	5,1	34,3	0,06	11	3,7	24,8	0,02	1,7	3,4	22,9	0,04	5	2,9	20,0	0,04	4,2
			5	4,7	36,8	0,06	10	3,3	27,1	0,02	1,4	3,0	25,3	0,04	4,3	2,5	22,4	0,03	3,3
			10	4,3	39,2	0,05	8	2,8	29,2	0,02	1,1	2,6	27,7	0,03	3,4	2,2	24,6	0,03	2,4
			15	3,9	41,6	0,05	7	2,4	31,3	0,01	<1	2,2	30,0	0,03	2,5	1,7	26,9	0,02	1,6
200	63	11	0	3,4	44,4	0,04	5	2,4	32,1	0,01	<1	2,3	29,6	0,03	2,5	2,0	25,8	0,02	2,0
			5	3,1	46,1	0,04	4,5	2,2	33,6	0,01	<1	2,0	31,2	0,02	2,0	1,7	27,3	0,02	1,5
			10	2,9	47,8	0,03	3,9	1,9	34,7	0,01	<1	1,7	32,8	0,02	1,6	1,4	28,7	0,02	1,1
			15	2,6	49,4	0,03	3,3	1,6	35,5	<0,01	<1	1,5	34,3	0,02	1,1	1,1	30,2	0,01	<1
	126	40	0	5,2	33,8	0,06	12	3,7	24,4	0,02	1,8	3,5	22,6	0,04	6	3,0	19,7	0,04	4,4
			5	4,8	36,3	0,06	10	3,3	26,7	0,02	1,4	3,1	25,0	0,04	4,5	2,6	22,0	0,03	3,4
			10	4,4	38,7	0,05	9	2,9	28,9	0,02	1	2,7	27,4	0,03	3,5	2,2	24,4	0,03	2,5
			15	4,0	41,2	0,05	7	2,5	31,1	0,01	<1	2,3	29,7	0,03	2,6	1,8	26,7	0,02	1,7
	189	81	0	6,6	28,6	0,08	18	4,7	20,5	0,03	2,7	4,4	19,1	0,05	9	3,8	16,6	0,05	7
			5	6,1	31,5	0,07	16	4,2	23,3	0,03	2,2	3,9	21,9	0,05	7	3,3	19,4	0,04	5
			10	5,6	34,3	0,07	14	3,7	26,0	0,02	1,7	3,4	24,7	0,04	5	2,8	22,2	0,03	3,9
			15	5,1	37,1	0,06	11	3,1	28,6	0,02	1,3	2,8	27,4	0,03	4	2,3	24,9	0,03	2,6

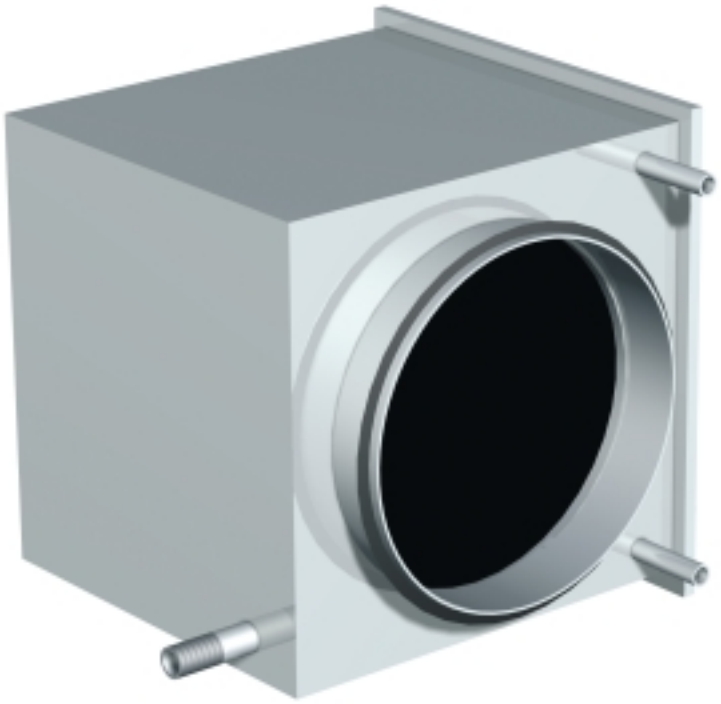
Heating Coils for Hot Water for Connection to Circular Ducts

Sizing (contd.)

Size Code suffix aaa	Airflow q l/s	Pressure drop, air Δp_t Pa	Inlet air temperature t_i °C	Water temperature, tri / tru															
				80 / 60				80 / 40				60 / 40				55 / 35			
				P kW	t_u °C	q_r l/s	Δp_r kPa	P kW	t_u °C	q_r l/s	Δp_r kPa	P kW	t_u °C	q_r l/s	Δp_r kPa	P kW	t_u °C	q_r l/s	Δp_r kPa
250	98	9	0	5,6	46,6	0,07	3,0	3,9	32,8	0,02	<1	3,7	30,9	0,04	1,4	3,2	26,7	0,04	1,1
			5	5,2	48,1	0,06	2,6	3,4	33,7	0,02	<1	3,3	32,3	0,04	1,1	2,7	28,0	0,03	<1
			10	4,7	49,6	0,06	2,2	2,9	34,1	0,02	<1	2,8	33,6	0,03	1	2,3	29,0	0,03	<1
			15	4,3	51	0,05	1,8	2,3	34,6	0,01	<1	2,4	34,7	0,03	<1	1,7	29,4	0,02	<1
	196	30	0	8,6	35,7	0,10	7	6,1	25,3	0,04	1,0	5,7	23,7	0,07	3,2	4,9	20,6	0,06	2,5
			5	7,9	38,1	0,09	6	5,4	27,4	0,03	<1	5,0	26,0	0,06	2,6	4,3	22,8	0,05	1,9
			10	7,3	40,4	0,09	5	4,6	29,4	0,03	<1	4,3	28,2	0,05	2,0	3,6	24,9	0,04	1,4
			15	6,6	42,6	0,08	4	3,9	31,1	0,02	<1	3,7	30,3	0,04	1,4	2,9	26,9	0,03	1
	294	61	0	10,9	30,3	0,13	10	7,7	21,4	0,05	1,5	7,2	20,1	0,09	5,0	6,2	17,4	0,07	3,9
			5	10,1	33,1	0,12	9	6,8	24,0	0,04	1,2	6,3	22,7	0,08	3,9	5,4	20,1	0,06	3,0
			10	9,2	35,8	0,11	8	5,9	26,5	0,04	1	5,5	25,4	0,07	3,0	4,5	22,7	0,05	2,1
			15	8,4	38,4	0,10	6	5	28,9	0,03	<1	4,7	28,0	0,06	2,2	3,7	25,2	0,04	1,4
315	156	9	0	8,9	47,2	0,11	3	6,4	33,9	0,04	<1	6,0	31,5	0,07	1,6	5,2	27,3	0,06	1,3
			5	8,3	48,7	0,10	2,8	5,7	35,0	0,03	<1	5,3	32,9	0,06	1,3	4,5	28,6	0,05	1,0
			10	7,6	50,1	0,09	2,4	4,8	35,5	0,03	<1	4,6	34,2	0,05	1,0	3,8	29,8	0,04	<1
			15	6,9	51,6	0,08	2,1	4,0	36,1	0,02	<1	3,9	35,4	0,05	<1	3,0	30,6	0,04	<1
	312	29	0	13,8	36,2	0,16	7	9,9	26,1	0,06	1,1	9,1	24,1	0,11	3,6	8,0	21,1	0,10	2,8
			5	12,7	38,5	0,15	6	8,8	28,2	0,05	1	8,1	26,4	0,10	2,9	6,9	23,3	0,08	2,2
			10	11,7	40,8	0,14	5	7,7	30,2	0,05	<1	7,1	28,6	0,08	2,2	5,8	25,4	0,07	1,6
			15	10,7	43,1	0,13	4,5	6,5	32,0	0,04	<1	6,0	30,8	0,07	1,6	4,7	27,4	0,06	1,1
	468	60	0	17,5	30,7	0,21	11	12,5	22,0	0,08	1,8	11,6	20,5	0,14	6	10,1	17,8	0,12	4,4
			5	16,2	33,5	0,19	10	11,2	24,6	0,07	1,4	10,3	23,1	0,12	4,5	8,8	20,5	0,11	3,4
			10	14,9	36,2	0,18	8	9,7	27,1	0,06	1,1	9,0	25,7	0,11	3,5	7,4	23,0	0,09	2,5
			15	13,6	38,8	0,16	7	8,3	29,5	0,05	<1	7,6	28,4	0,09	2,6	6,0	25,6	0,07	1,7
400	251	10	0	13,9	45,5	0,17	4	10,2	33,3	0,06	<1	9,3	30,5	0,11	2	8,2	26,6	0,10	1,6
			5	12,9	47,1	0,15	3,5	9,1	34,8	0,05	<1	8,3	32,1	0,10	1,6	7,1	28,1	0,08	1,2
			10	11,9	48,8	0,14	3	7,9	35,9	0,05	<1	7,2	33,6	0,09	1,3	6,0	29,5	0,07	1
			15	10,8	50,4	0,13	2,5	6,6	36,4	0,04	<1	6,1	35	0,07	1	4,8	30,8	0,06	<1
	503	36	0	21,3	34,8	0,25	9	15,6	25,4	0,09	1,4	14,3	23,3	0,17	4,4	12,5	20,4	0,15	3,5
			5	19,7	37,3	0,24	8	13,9	27,7	0,08	1,1	12,7	25,7	0,15	3,5	10,9	22,7	0,13	2,7
			10	18,1	39,7	0,22	6	12,2	29,9	0,07	1	11,1	28,1	0,13	2,7	9,2	25,0	0,11	2,0
			15	16,5	42,0	0,20	5	10,4	31,9	0,06	<1	9,4	30,3	0,11	2,0	7,5	27,2	0,09	1,4
	754	73	0	27,1	29,5	0,32	14	19,6	21,4	0,12	2,2	18,1	19,7	0,22	7	15,8	17,2	0,19	5
			5	25,1	32,3	0,30	12	17,5	24,1	0,11	1,8	16,1	22,5	0,19	5	13,8	20,0	0,17	4,1
			10	23,1	35,1	0,28	10	15,4	26,7	0,09	1,4	14	25,2	0,17	4,2	11,6	22,7	0,14	3,1
			15	21	37,9	0,25	9	13,1	29,3	0,08	1,0	11,9	27,9	0,14	3,1	9,5	25,4	0,11	2,1
500	389	12	0	20,8	44,2	0,25	3,7	15,1	32,1	0,09	0,6	13,9	29,6	0,17	1,9	12,1	25,7	0,15	1,5
			5	19,3	46	0,23	3,2	13,4	33,5	0,08	0,5	12,3	31,2	0,15	1,5	10,5	27,3	0,13	1,1
			10	17,7	47,7	0,21	2,8	11,6	34,7	0,07	0,4	10,7	32,8	0,13	1,2	8,8	28,8	0,11	0,8
			15	16,2	49,4	0,19	2,3	9,7	35,6	0,06	0,3	9,1	34,3	0,11	0,9	7,1	30,1	0,09	0,6
	680	32	0	29,3	35,6	0,35	7	21,2	25,8	0,13	1,1	19,6	23,8	0,24	3,5	17,1	20,7	0,2	2,8
			5	27,2	38	0,33	6	18,9	27,9	0,11	0,9	17,4	26,1	0,21	2,8	14,8	23	0,18	2,1
			10	25	40,3	0,3	5	16,5	30	0,1	0,7	15,1	28,3	0,18	2,2	12,5	25,2	0,15	1,6
			15	22,8	42,6	0,27	4,4	14	31,9	0,08	0,5	12,8	30,6	0,15	1,6	10,1	27,3	0,12	1,1
	970	62	0	36,3	30,8	0,43	10	26,1	22,2	0,16	1,6	24,2	20,5	0,29	5	21,1	17,9	0,25	4
			5	33,6	33,5	0,4	9	23,2	24,7	0,14	1,3	21,4	23,2	0,26	4,1	18,3	20,5	0,22	3,1
			10	30,8	36,2	0,37	8	20,3	27,3	0,12	1	18,6	25,8	0,22	3,2	15,5	23,1	0,19	2,3
			15	28,1	38,9	0,34	6	17,3	29,7	0,1	0,8	15,8	28,4	0,19	2,4	12,5	25,7	0,15	1,6

Notes

Cooling Coils for Chilled Water for Connection to Circular Ducts



For cooling air with chilled water

Design

Coils with enclosed headers and circular duct connections: **QJCD.**

Available in 7 sizes.

Normal air velocity 2–3.0 m/s.

Easy to size using our computerized product selection program called Coils that you'll find under the heading: Heating and Cooling Coils, or using the appropriate sizing page in this catalogue.

Features

– Conform to AMA Code QFC.1.
– Designed for air flows up to 780 l/s.
– Conform to Tightness Class B to Swedish Standard VVS AMA 98
– Enclosed headers
– Adapted to meet Standards for Circular Ducts
– Simple to install
– Removable cover panel for cleaning
– Stainless drip tray with drain.
– Insulated to prevent condensation.

Cooling Coils for Chilled Water for Connection to Circular Ducts

Design

The arrangement of the tubes mounted in the coil is staggered for the effective transfer of cooling energy from the circulating medium to the air.
The coil casing conforms to the provisions of Tightness Class B to VVS AMA 98 Standard.
The casing is equipped with a circular connection that fits against ducts that conform to Swedish Circular Duct Standard SIS 82 72 06.The connection spigot is fitted with a gasket. A removable cover panel is secured to the connection side of the coil for cleaning and inspection. The casing is fitted with condensation insulation with 9 mm thick INSUL cellular rubber and equipped with an interior tray with R1/2" drain connection.

Materials and Surface Treatment

The coil consists of copper tubes and aluminium fins.
The casing is made of hot galvanized sheet steel with a tray made of stainless steel, 304L.
The pipe connections on the water side are made of copper.

Sizing

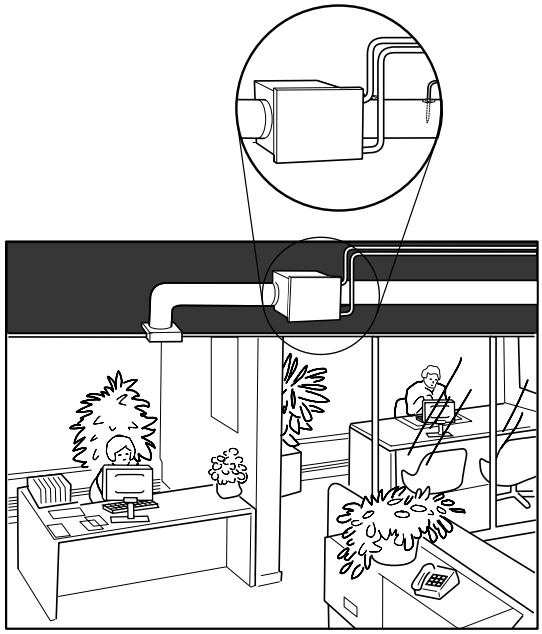
Use our product selection program called Coils for sizing, or the appropriate sizing page in this catalogue. The program specifies the following data:

Air side:	Outlet air temperature	°C
	Output, kW	kW
	Air velocity	m/s
	Pressure dropl	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material codes, coil data and product code.

Installation

Clamp ring couplings (not included) are used for connecting the pipes on the liquid side to the pipework. The lower pipe is normally the inlet to facilitate venting. On the air side, the cooler is to be mounted horizontally in the direction of air flow indicated by the arrow label fitted.



Maintenance

Operating and maintenance instructions can be downloaded from our product selection program called Coils or via our website on the Internet.

Environment

An Environmental and Building Product Declaration can be downloaded from our product selection program called Coils or via our website on the Internet.

Technical data

Sizes:	100, 125, 160, 200, 250, 315, 400
Number of tube rows:	3
Fin pitch:	2,5 mm
Max. liquid velocity:	2,0 m/s

Cooling Coils for Chilled Water for Connection to Circular Ducts

Design Data

Max. operating temperature: 150 °C
All coils are pressure tested with dry air under water. They are designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

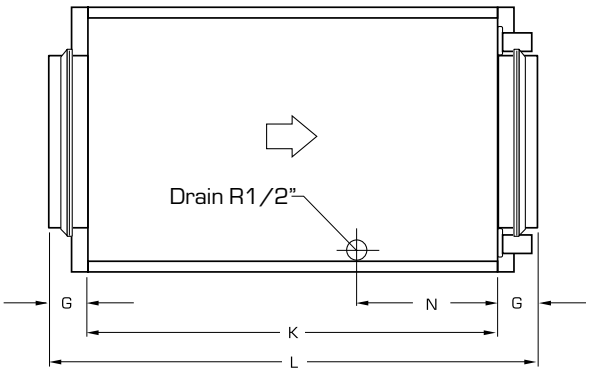
Product Code

Coil QJCD-aaa

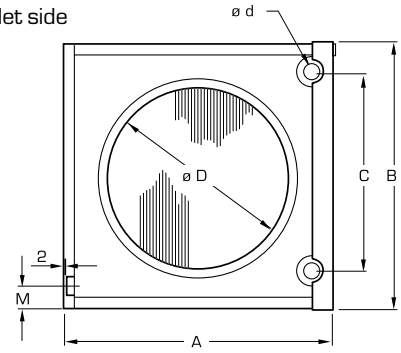
Size **(aaa)**
(Circular duct, mm)
100, 125, 160,
200, 250, 315,
400

Dimensions and Weights

Backside



Outlet side



Size QJCD	D	d	A	B	C	G	L	K	M	N	Weight kg
-100	100	10	225	186	140	40	380	300	27	97	4,4
-125	125	10	305	261	215	40	380	300	27	97	6,8
-160	160	10	305	261	215	40	380	300	27	97	6,7
-200	200	22	385	336	290	40	380	300	27	97	9,7
-250	250	22	460	411	365	40	380	300	27	97	13
-315	315	22	540	486	420	70	440	300	27	97	16
-400	400	22	690	536	425	70	475	335	39	114	21,4

Cooling Coils for Chilled Water for Connection to Circular Ducts

Sizing

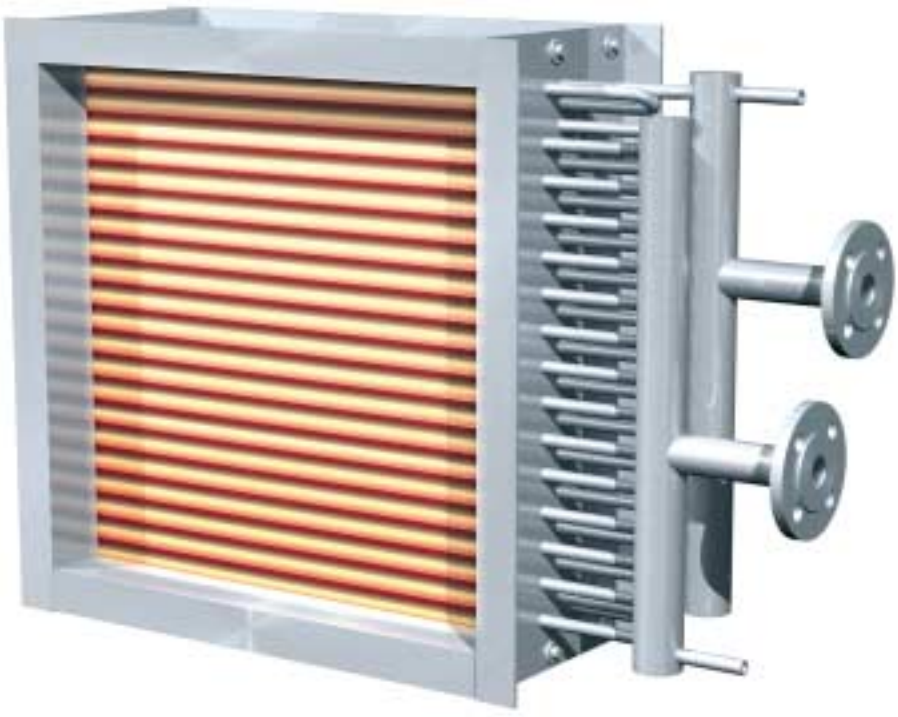
Use the tables below, which enable the appropriate size of coil to be determined quickly with sufficient accuracy for practical purposes.
If your application calls for air volumes other than those specified in the tables, you can interpolate. Get in touch with your nearest Coiltech sales office if you need further assistance.

Symbols

Δp_t = total pressure drop on the air side .....Pa
Δp_r = pressure drop on the water side .....kPa
q = air flow .....l/s
q_r = water flow .....l/s
P = output .....kW
t_i = inlet air temperature .....°C
t_u = outlet air temperature .....°C
t_{ri} = inlet water temperature .....°C
t_{ru} = outlet water temperature .....°C
r_h = relative humidity of the air .....%

Water temperature: 6/12 °C Humidity: 50% Size	Airflow, q l/s	Pressure drop, air Δp_t Pa	Inlet air temperature t_i °C	Outlet air temperature t_u °C	Output P kW	Water flow q_r l/s	Pressure drop, water Δp_r kPa
QJCD-100	16	8	25	13,7	0,28	0,01	0,4
		9	28	14,8	0,36	0,01	0,6
	31	27	25	16,4	0,38	0,02	0,7
		29	28	17,9	0,49	0,02	1,2
	47	55	25	17,9	0,44	0,02	1
		59	28	19,7	0,56	0,02	1,6
QJCD-125	24	3,6	25	11,6	0,53	0,02	1,7
		3,9	28	12,3	0,68	0,03	2,7
	49	14	25	12,8	0,96	0,04	8
		15	28	13,2	1,29	0,05	13
	74	29	25	14,1	1,26	0,05	13
		32	28	14,9	1,69	0,07	22
QJCD-160	40	9	25	12,2	0,82	0,03	6
		11	28	12,3	1,14	0,05	10
	81	34	25	14,4	1,33	0,05	14
		38	28	15,2	1,79	0,07	24
	121	70	25	15,8	1,7	0,07	22
		78	28	16,9	2,2	0,09	37
QJCD-200	63	7	25	13	1,19	0,05	2,3
		7	28	13,8	1,3	0,05	2,8
	126	25	25	14,1	2,1	0,09	8
		28	28	14,8	2,9	0,11	14
	189	52	25	15,4	2,8	0,11	13
		58	28	16,4	3,7	0,15	21
QJCD-250	98	7	25	12,9	1,87	0,07	2,3
		8	28	11,9	2,9	0,12	6
	196	24	25	13,9	3,4	0,14	8
		27	28	14,5	4,6	0,18	14
	294	50	25	15,2	4,4	0,18	13
		56	28	16,1	5,9	0,23	22
QJCD-315	156	8	25	11,7	3,4	0,13	5
		9	28	11,9	4,6	0,18	9
	312	28	25	14	5,4	0,22	13
		31	28	14,7	7,3	0,29	22
	468	59	25	15,3	6,9	0,28	20
		65	28	16,4	9,3	0,37	34
QJCD-400	251	10	25	12,2	5,2	0,21	5
		11	28	12,3	7,1	0,28	9
	503	35	25	14,5	8,3	0,33	12
		39	28	15,3	11,1	0,44	20
	754	72	25	15,8	10,5	0,42	18
		81	28	16,9	13,9	0,55	30

QDIH – Coil for Liquids, Titanium, for heating air



The QDIH coil is designed for aggressive water and sea water in ventilation units and coils installed in ducts.

Design

The coil casing is made of stainless or acid-proof steel. The parts of the coil that come in contact with liquid are made of titanium and the fins are available in the following materials:
- aluminium
- epoxy-coated aluminium
- copper
- electro-tinned copper.

The coil is equipped with welded flanges on the pipe connections and has stainless or acid-proof steel lifting lugs.
Plugged connections are provided for venting and drainage.
On request, 15 x 24 mm mounting holes can be drilled in the connection flanges of the casing.

The **QDIH** is designed for heating air. The coil is produced in sizes from 500 x 400 mm to 3500 x 2400 mm.

For an estimate and price quotation, contact Coiltech AB.

Facts

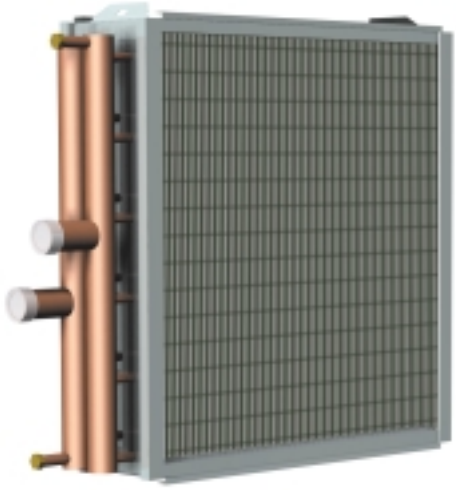
- Fin pitches: 1.8, 2.0, 2.5, 3.0 and 4.0 mm.
- Number of tubes deep: 1 to 12 tube rows.

Design data

Max. operating pressure 1.6 MPa at max. operating temperature: 100 °C.
Pressure tested at 2.1 MPa.
Designed and manufactured in accordance with the Pressure Equipment Directive PED 97/23EC.

Notes

Duct and Plant Room Coils for Hot Water



For heating air with warm or hot water

Design

Coils for slip-clamp connection with exposed headers: **QLHG**
Coils for flanged connection with exposed headers: **QLHF**
Coils for slip-clamp connection with enclosed headers: **QLHB**
Coils for flanged connection with enclosed headers: **QLHH**

The standard size range is from 200 x 200 mm to 3500 x 2400 mm; larger sizes are available to special order.

Normal air velocity: 3 – 4 m/s.

Easy to size using the computerized product selection program called Coils that you'll find under the heading Heating and Cooling Coils.

Features

– Conform to AMA Code QFC.1.
– Designed for air flows up to 40 m^3/s
– All conform to Tightness Class B to Swedish Standard VVS AMA 98.
– Enclosed or exposed headers
– Slip-clamp or flanged connection
– Available in a variety of material combinations
– Number of tube rows: from 1 to 12
– Fin pitches: from 1.8 to 6.0 mm.

Duct and Plant Room Coils for Hot Water

Design

The coils are produced in three parts: finned body, headers and casing.
The staggered tubes are assembled in the finned body in falling loops to enable the coil to be drained of liquid.
The headers are equipped with plugged nipples for venting and drainage. The plug is designed as a manual purging valve. At least one of the nipples can be fitted with a sensor for an anti-freeze thermostat.
All the connections are externally threaded (BSP).

The connection restricts the liquid flow as follows:

DN 15	max	0,7 l/sec
DN 25	″	1,6
DN 32	″	2,8
DN 50	″	7,0
DN 80	″	14,0
DN 2x80	″	28,0

The coil casing conforms to Tightness Class B to Swedish VVS AMA 98 Standard and is available with PG connections or drilled flanges with hole pitch matching the RFHF and the RVGL.
The coils weighing more than 25 kilos are equipped with lifting beams.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins.
The casing is made of hot galvanized sheet steel.
The standard headers are made of steel except those to DN 15 and DN 25 that are made of copper with brass connections.
Materials capable of withstanding aggressive environments are available, see the list of materials on the next page.

Accessories

A variety of different accessories are available, See the separate section on accessories. .

Sizing

Use our product selection program called Coils for sizing. The product selection program also provides dimension sketches.
Choose under the heading: Heating and Cooling Coils.
The program specifies the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coils are normally labelled to indicate how the inlet and return piping is to be connected. If these labels are missing, connect the coil to obtain a counter-flow configuration.

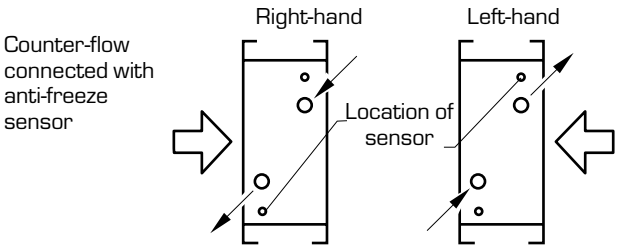


Fig. 1

If the coil is ordered without specifying right-hand or left-hand version, it will be supplied labelled for a right-hand flow configuration. Heating coils can be reversed.
The system must be adequately vented to provide correct performance

Anti-freeze Protection

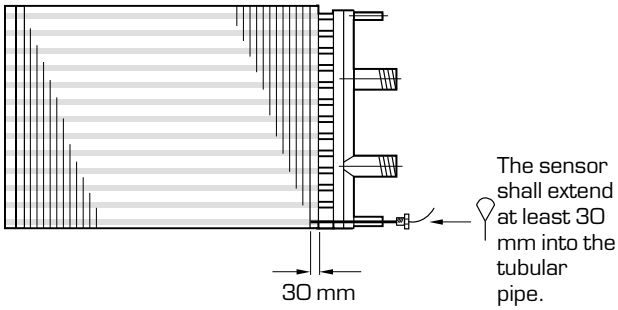


Fig. 2

At least one of the nipples can be fitted with a sensor for an anti-freeze thermostat.

If freezing is likely to occur in the coil after it has been drained of liquid, it should be blown with compressed air to ensure that all water is gone.
More information can be obtained from our product selection program called Coils or downloaded from our website on the Internet.

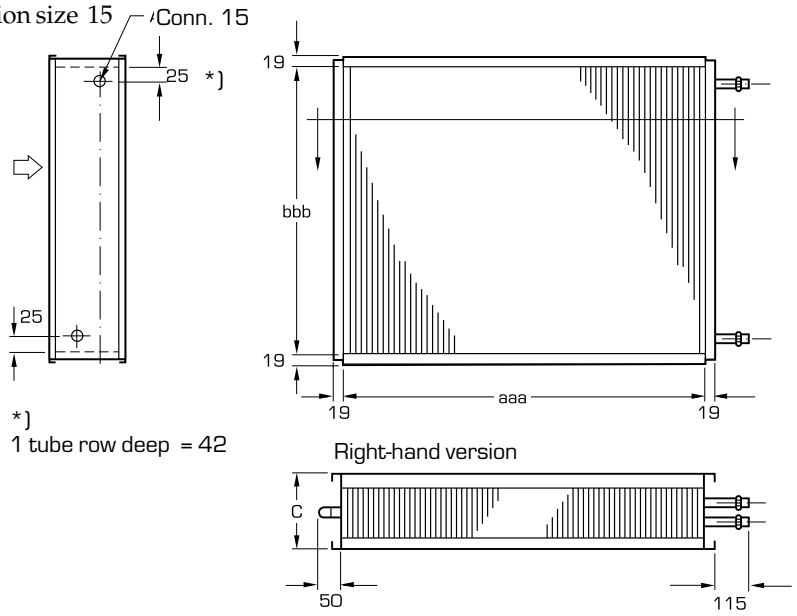
Maintenance

Operating and maintenance instructions can be obtained from our product selection program called Coils or from our website on the Internet.

Duct and Plant Room Coils for Hot Water

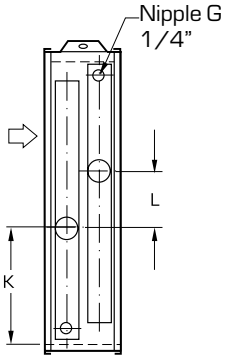
Dimensions, Coil for Slip-clamp Connection with Exposed Headers – QLHG

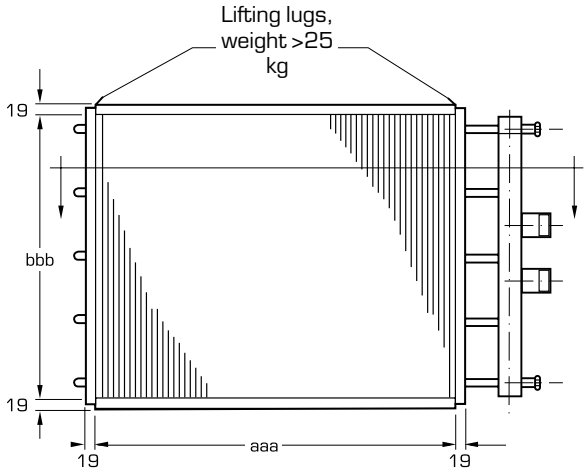
Pipe connection size 15



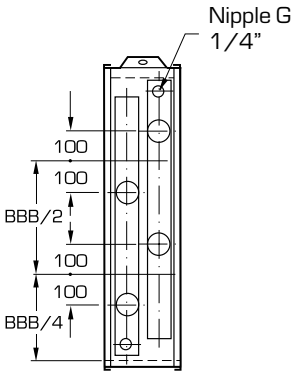
Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Conn. size 25, 32, 50, 80





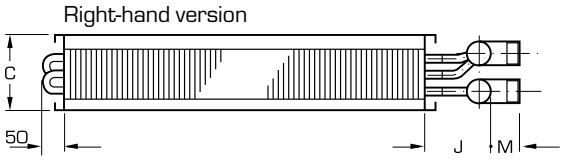
Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$



bbb cm	L
<040	120
≥040	200

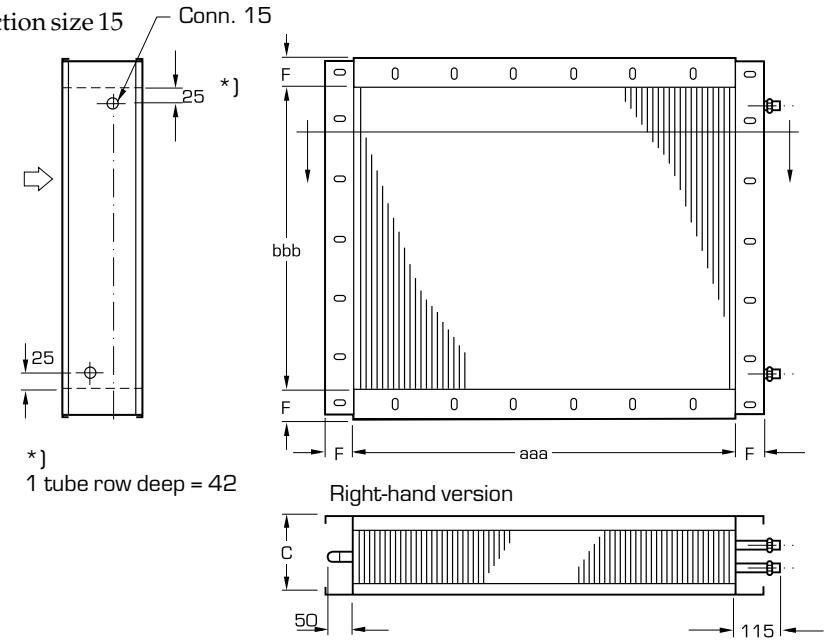
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	150	06	350
02	150	08	400
03	150	10	460
04	300	12	520

Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Hot Water

Dimensions, Coil for Flanged Connection with Exposed Headers – QLHF

Pipe connection size 15

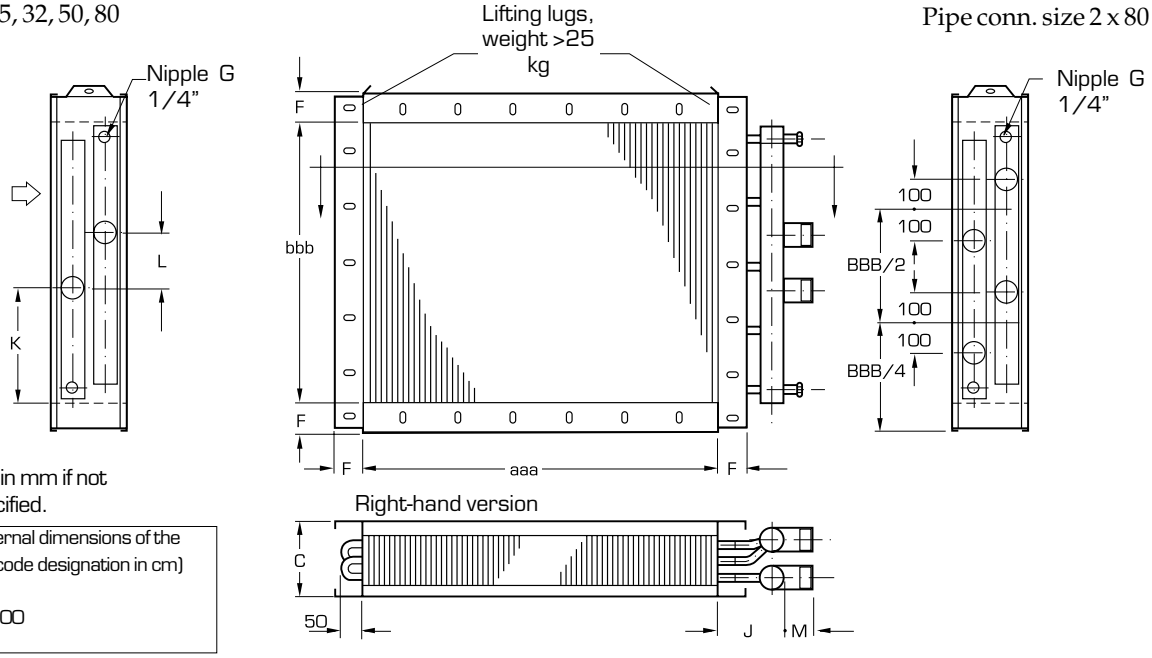


For particulars of hole pitches, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Conn. size 25, 32, 50, 80

Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

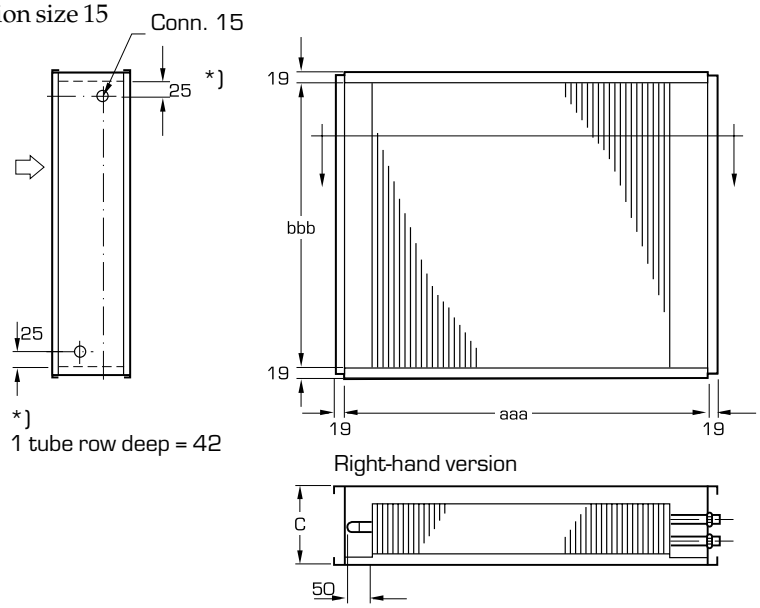
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	150	06	350
02	150	08	400
03	150	10	460
04	300	12	520

Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Hot Water

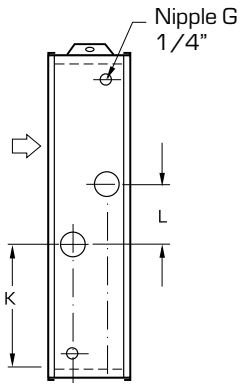
Dimensions, Coil for Slip-clamp Connection with Enclosed Headers – QLHB

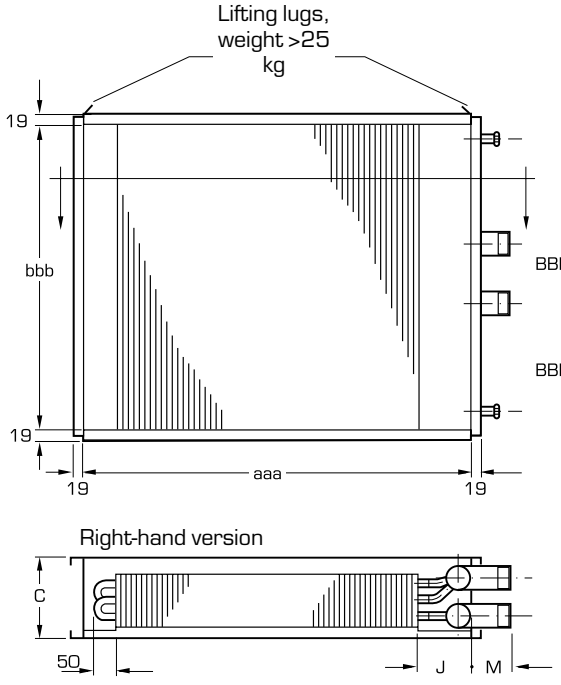
Pipe connection size 15



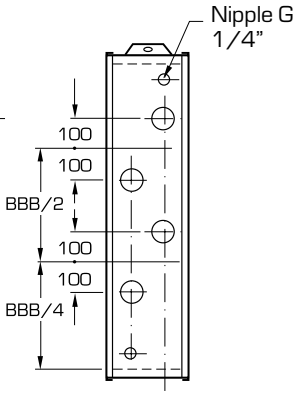
Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Conn. size 25, 32, 50, 80





Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

bbb cm	L
<040	120
≥040	200

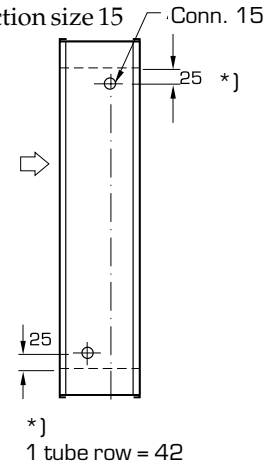
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

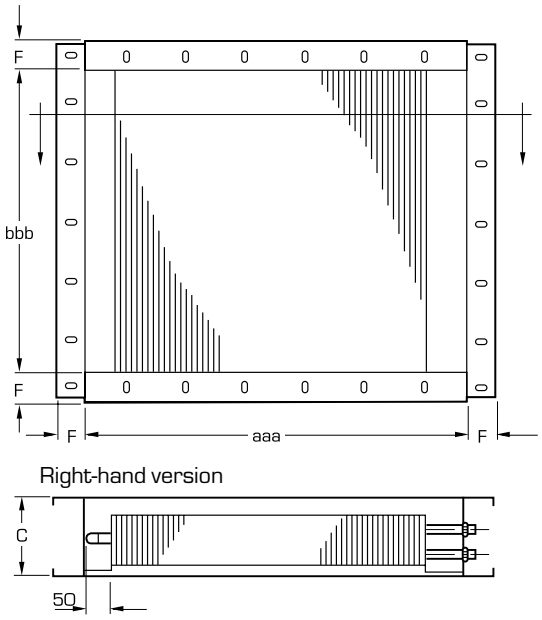
Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Hot Water

Dimensions, Coil for Flanged Connection with Enclosed Headers – QLHH

Pipe connection size 15



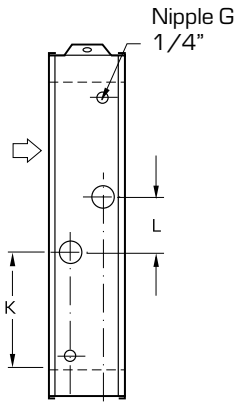


Right-hand version

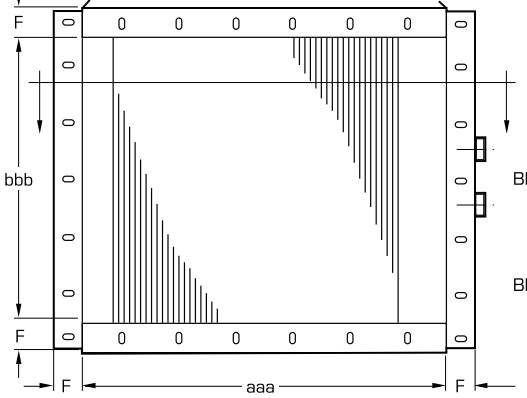
For particulars of hole pitches, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

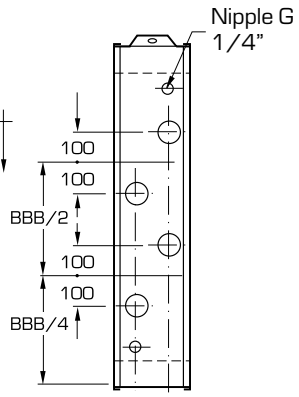
Conn. size 25, 32, 50, 80



Lifting lugs, weight >25 kg



Pipe conn. size 2 x 80

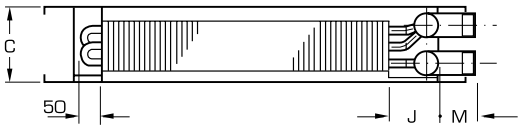


All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Right-hand version



aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Hot Water

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called Coils or from our website on the Internet.

Technical Data

Sizes are available from 200 x 200 mm to 3500 x 2400 mm. Larger sizes can be produced to special order.

Number of tube rows:	1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch:	1,8, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0 mm.
Max. permissible liquid velocity:	1,5 m/s.
Max. air velocity:	5 m/sec.

Design Data

- Max. permissible operating pressure: 1.6 MPa at a max. permissible operating temperature of 100 °C or
- Max. permissible operating pressure: 1.0 MPa at a max. permissible operating temperature of 150 °C.

If your application calls for higher pressure, contact us.

All the coils are pressure tested and leakage tested with dry air under water.

Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED)

Material code = item g in the product code

Material	Casing	Headers	Fins
A	Fzv	Steel (conn. 25, Cu)	Al (standard)
B	Fzv	Cu	Cu
D	Fzv	Cu	Al
E	Fzv	Steel (conn. 25, Cu)	Corropaint
F	Fzv	Cu	Cu tinned
K	Fzv	Cu	Corropaint
L	AISI 304L	Steel (conn. 25, Cu)	Al
M	AISI 304L	Cu	Cu
N	AISI 304L	Cu	Al
O	AISI 304L	Steel (conn. 25, Cu)	Corropaint
P	AISI 304L	Cu	Cu tinned
Q	AISI 304L	Steel (conn. 25, Cu)	Al Corrodip
R	AISI 304L	Cu	Corropaint

Fzv = galvanized sheet steel

AISI = stainless sheet steel

Cu = copper

Al = aluminium

Which material shall I choose?

See section: Heat Exchangers, General

Duct and plant room coils for hot water **QLH(G,F,B,H)-aaa-bbb-cc-dd-ee-f-g**

Type of connection
(G) = Slip-clamp connection Exposed headers
(F) = Flanged connection exposed headers
(B) = Slip-clamp connection enclosed headers
(H) = Flanged connection enclosed headers

Width, cm **(aaa)**
020-800

Height, cm **(bbb)**
020-240

Number of tube rows **(cc)**
01, 02, 03, 04,
06, 08, 10, 12

Fin pitch, mm **(dd)**
18, 20, 25, 30
40, 50, 60

Number of liquid passes **(ee)**
02-98

Connection side **(f)**
1 = right-hand
2 = left-hand

Material **(g)**
See the List of Materials in the left-hand column.

Notes

QDIC – Coil for Liquids, Titanium, for cooling air

The QDIC coil is designed for aggressive water and sea water in ventilation units and coils installed in ducts.

Design

The coil casing is made of stainless or acid-proof steel. The parts of the coil that come in contact with liquid are made of titanium and the fins are available in the following materials:
- aluminium
- epoxy-coated aluminium
- copper
- electro-tinned copper.

The coil is equipped with welded flanges on the pipe connections and has stainless or acid-proof steel lifting lugs.
Plugged connections are provided for venting and drainage.
On request, 15 x 24 mm mounting holes can be drilled in the connection flanges of the casing.

The **QDIC** is designed for cooling air and is equipped with a drop tray. The coil is produced in sizes from 500 x 400 mm to 3500 x 2400 mm.

For an estimate and price quotation, contact Coiltech AB.

Facts

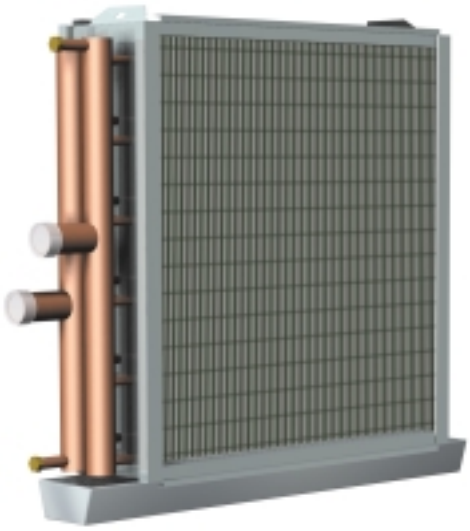
- Fin pitches: 1.8, 2.0, 2.5, 3.0 and 4.0 mm.
- Number of tubes deep: 1 to 12 tube rows.

Design data

Max. operating pressure 1.6 MPa at max. operating temperature: 100 °C.
Pressure tested at 2.1 MPa.
Designed and manufactured in accordance with the Pressure Equipment Directive PED 97/23EC.

Notes

Duct and Plant Room Coils for Chilled Water



For cooling air with chilled water

Design

Coils for slip-clamp connection with exposed headers: **QLCG**
Coils for flanged connection with exposed headers: **QLCF**
Coils for slip-clamp connection with enclosed headers: **QLCB**
Coils for flanged connection with enclosed headers: **QLCH**

Our standard ranges from 200 x 200 mm to 3500 x 2400 mm, larger sizes are available to special order.

The normal air velocity should be: 2 – 3 m/s.

Easy to size using the computerized product selection program called Coils that you'll find under the heading Heating and Cooling Coils.

Features

– Conform to AMA Code QFC.21.
– Designed for air flows up to 40 m^3/s
– All conform to Tightness Class B to Swedish Standard VVS AMA 98
– Enclosed or exposed headers
– Slip-clamp or flanged connection
– Available in several material combinations
– From 1 to 12 tube rows
– From 2.0 to 6.0 mm fin pitches.

Duct and Plant Room Coils for Chilled Water

Design

The coils are produced in three parts: finned body, headers and casing.

The staggered tubes are assembled in the finned body in falling loops to enable the coil to be drained of liquid.

The headers are equipped with plugged nipples for venting and drainage. The plug is designed as a manual purging valve. At least one of the nipples can be fitted with a sensor for an anti-freeze thermostat.

All the connections are externally threaded (BSP).

The connection restricts the liquid flow as follows:

DN 15	max	0,7 l/sec
DN 25	″	1,6
DN 32	″	2,8
DN 50	″	7,0
DN 80	″	14,0
DN 2x80	″	28,0

The coil casing conforms to Tightness Class B to Swedish VVS AMA 98 Standard and is available with PG connections or drilled flanges with hole pitch matching the RFHF and the RVGL.
The coils weighing more than 25 kilos are equipped with lifting beams.
The standard drain tray is supplied for vertical draining. Horizontal draining is available as an option. See under "Accessories".

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins.
The casing is made of hot galvanized sheet steel.
The standard headers are made of steel except those to DN 15 and DN 25 that are made of copper with brass connections. Materials capable of withstanding aggressive environments are available, see the list of materials on the next page.

Accessories

A variety of different accessories, such as droplet eliminators, etc. are available. See the separate section on accessories.

Sizing

Use our product selection program called **Coils** for sizing.

The program specifies the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. Connect the coil to obtain a counter-flow configuration as shown in Fig. 1.

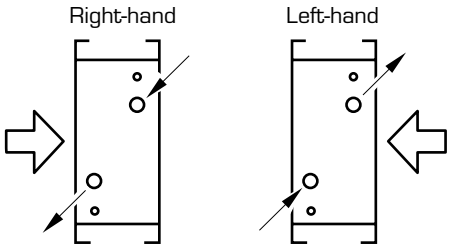


Fig. 1

Cooling coils must be ordered in right-hand or left-hand version.

The system must be adequately vented to provide correct performance.

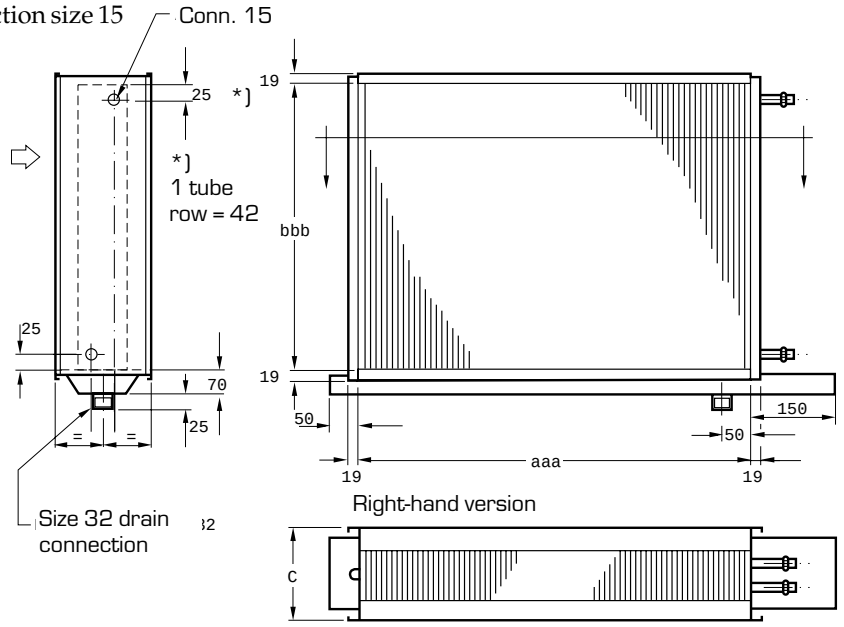
Maintenance

Operating and maintenance instructions can be obtained from our product selection program called Coils or from our website on the Internet.

Duct and Plant Room Coils for Chilled Water

Dimensions, Coil for Slip-clamp Connection with Exposed Headers – QLCG

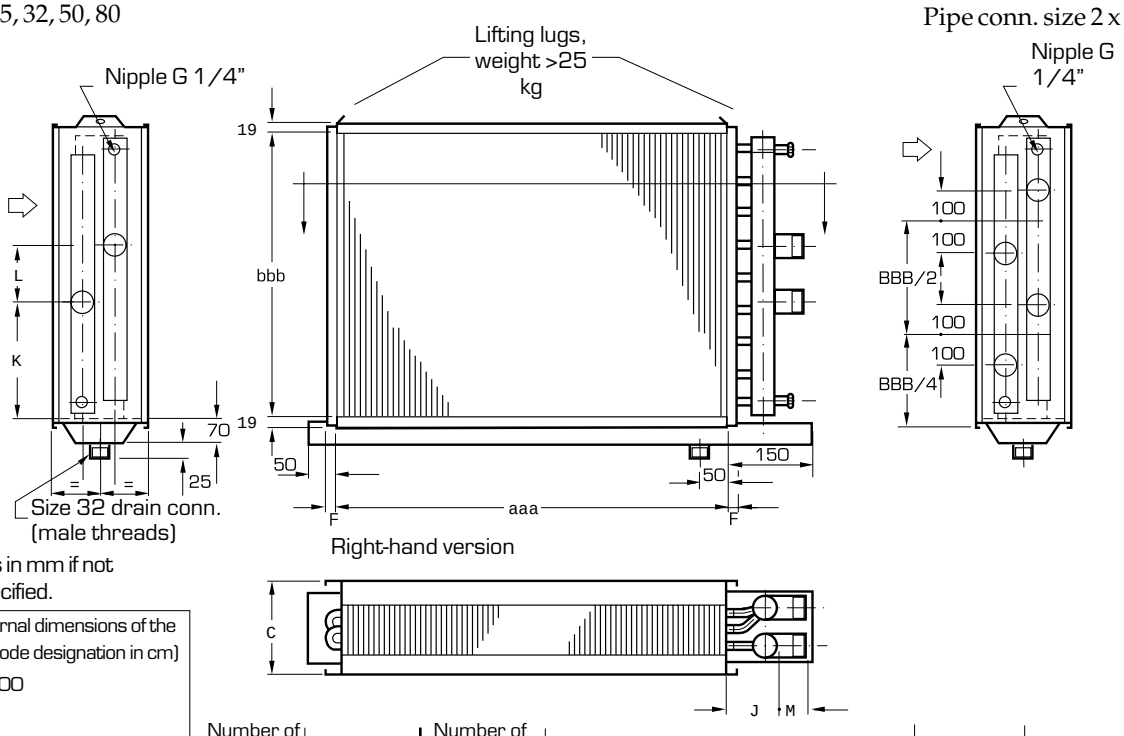
Pipe connection size 15



Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Conn. size 25, 32, 50, 80

Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

bbb cm	L
<040	120
≥040	200

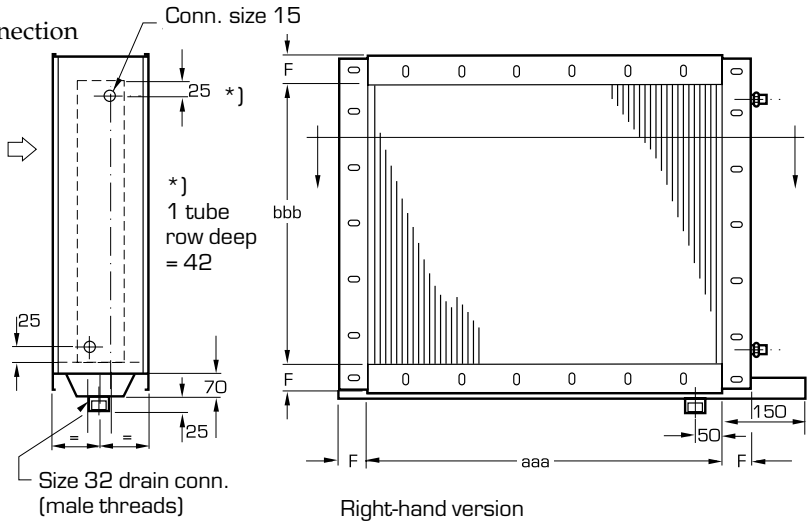
Number of tube rows (code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Chilled Water

Dimensions, Coil for Flanged Connection with Exposed Headers – QLCF

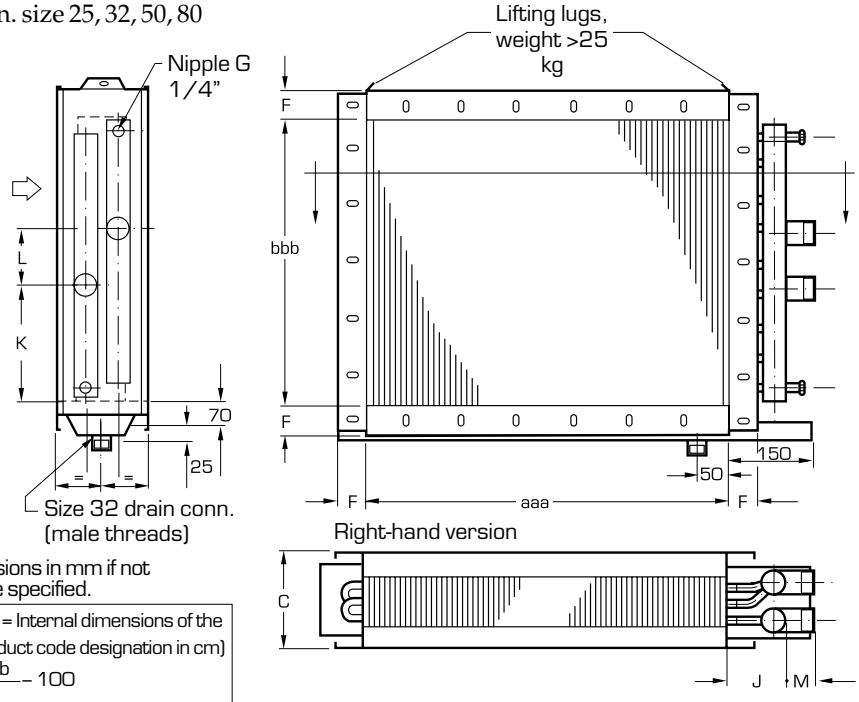
Pipe connection size 15



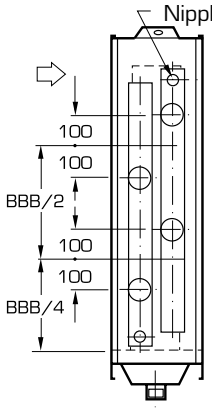
For particulars of hole pitches matching the RFHF, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

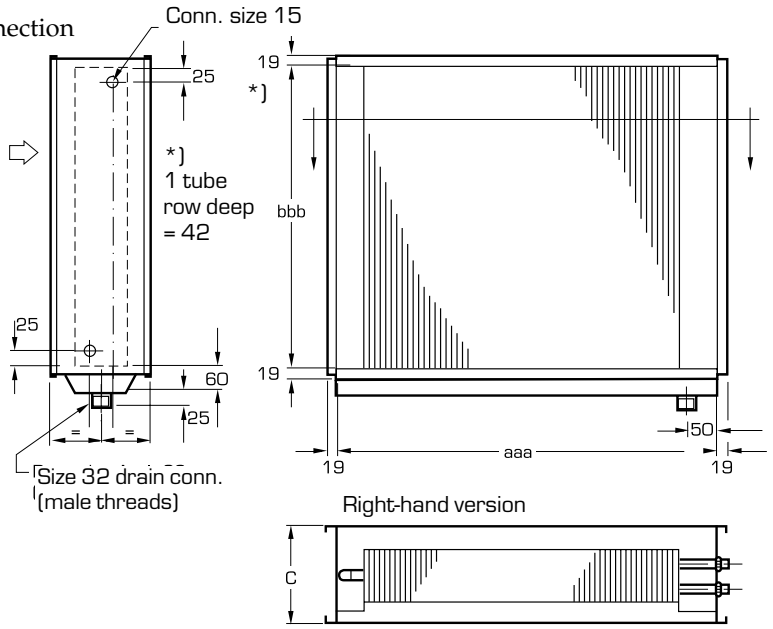
Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Chilled Water

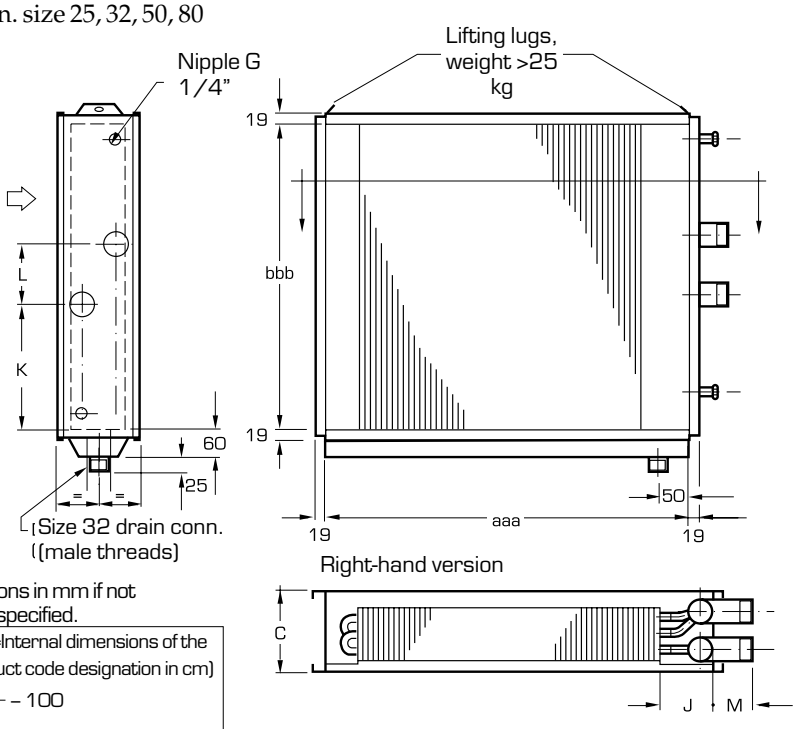
Dimensions, Coil for Slip-clamp Connection with Enclosed Headers – QLCB

Pipe connection size 15

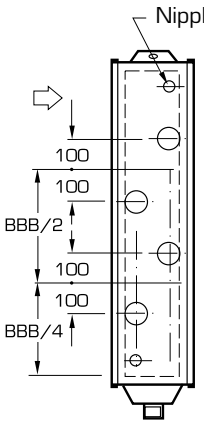


Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb =Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

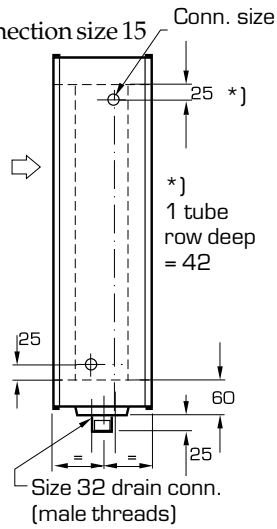
Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

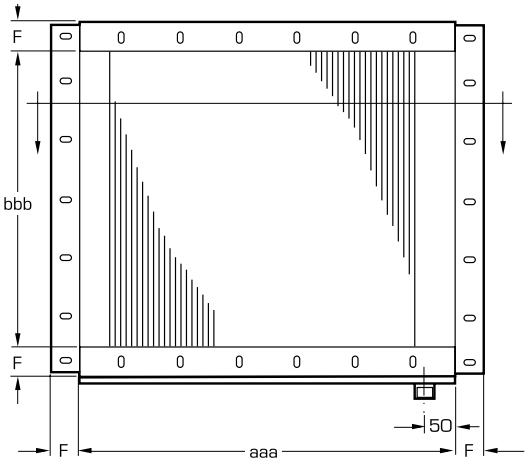
Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Chilled Water

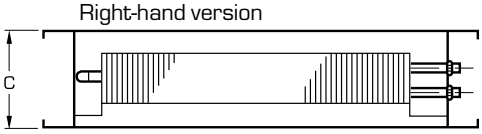
Dimensions, Coil for Flanged Connection with Enclosed Headers – QLCH

Pipe connection size 15





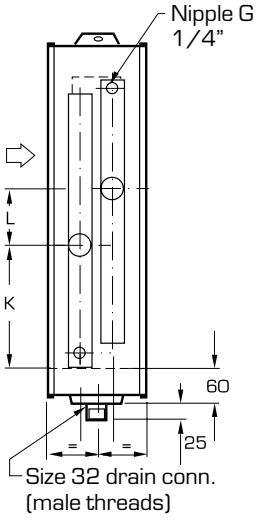
Right-hand version

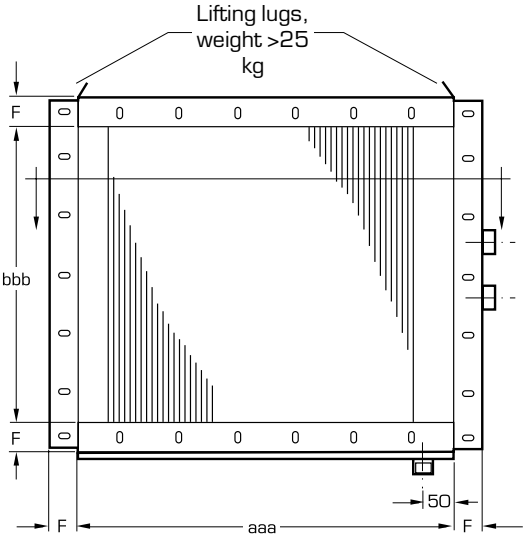


For particulars of hole pitches matching the RFHF, see section: Accessories.

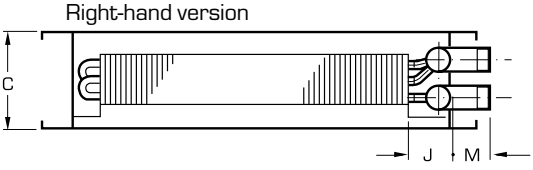
Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80

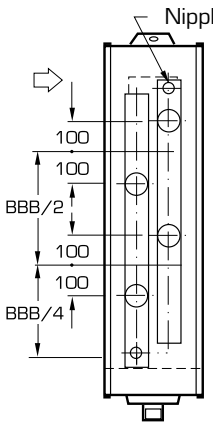




Right-hand version



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for Chilled Water

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data

Standard sizes from 200 x 200 mm to 3500 x 2400 mm.
Sizes up to 8000 x 2400 mm can be produced to special order.

Number of tube rows: 1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch: 2,0, 2,5, 3,0, 4,0, 5,0, 6,0 mm.
Max. permissible liquid velocity: 2,0 m/s.
Max. permissible air velocity without droplet eliminators: 2,9 m/sek.
Max. permissible air velocity with droplet eliminators: 5,0 m/sek.
Conforms to Tightness Class B to Swedish Standard VVS-AMA 98.
If the pressure in the ducting exceeds 300 Pa, coils with enclosed headers are recommended.

Design Data

- Max. permissible operating pressure: 1,6 MPa at a max. permissible operating temperature of 100 °C or
- Max. permissible operating pressure: 1,0 MPa at a max. permissible operating temperature of 150 °C.

If your application calls for higher pressure, contact us.
All the coils are pressure tested and leakage tested with dry air under water.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Material code = item g in the product code

Material	Casing	Headers	Fins
A	Fzv	Steel (conn. 25, Cu)	Al (standard)
B	Fzv	Cu	Cu
D	Fzv	Cu	Al
E	Fzv	Steel (conn. 25, Cu)	Corropaint
F	Fzv	Cu	Cu tinned
K	Fzv	Cu	Corropaint
L	AISI 304L	Steel (conn. 25, Cu)	Al
M	AISI 304L	Cu	Cu
N	AISI 304L	Cu	Al
O	AISI 304L	Steel (conn. 25, Cu)	Corropaint
P	AISI 304L	Cu	Cu tinned
Q	AISI 304L	Steel (conn. 25, Cu)	Al Corrodip
R	AISI 304L	Cu	Corropaint

Fzv = galvanized sheet steel
AISI = stainless sheet steel
Cu = copper
Al = aluminium

Which material shall I choose?
See section: Heat Exchangers, General

Duct and Plant Room Coils for Chilled Water **QLC(G,F,B,H)-aaa-bbb-cc-dd-ee-f-g**

Type of connection
(G) = Slip-clamp connection Exposed headers
(F) = Flanged connection exposed headers
(B) = Slip-clamp connection enclosed headers
(H) = Flanged connection enclosed headers

Width, cm **(aaa)**
020-800

Height, cm **(bbb)**
020-240

Number of tube rows **(cc)**
01, 02, 03, 04,
06, 08, 10, 12

Fin pitch, mm **(dd)**
20, 25, 30
40, 50, 60

Number of liquid passes **(ee)**
02-98

Connection side **(f)**
1 = right
2 = left

Material **(g)**
See the List of Materials in the left-hand column.

Notes

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Supply air coil

Extract air coil

The ECOTERM System consists of one or several supply air and extract air coils in which a brine solution is circulated to recover heat energy from the extract air.

Design

QL = 1/2″ tubes with pleated fins
QF = 1/2″ tubes with smooth fins

Supply air coil = Q(L,F)T
Extract air coil = Q(L,F)F

Coils for slip-clamp connection with exposed headers:
Q(L,F)(T,F)G
Coils for flanged connection with exposed headers:
Q(L,F)(T,F)F
Coils for slip-clamp connection with enclosed headers:
Q(L,F)(T,F)B
Coils for flanged connection with enclosed headers:
Q(L,F)(T,F)H

Standard range from 200 x 200 mm to 3500 x 2400 mm.
Larger sizes are available to special order.
Normal air velocity: 2 - 3 m/ s.
Easy to size using the computerized product selection program called Coils. See under the heading: ECOTERM® Heat recovery system.

Features

– Conforms to AMA Code QFC
– For air flows up to 40 m^3/s
– All the coils conform to the provisions of Tightness Class B to VVS AMA 98 Standard
– Enclosed or exposed headers
– Slip-clamp or flanged connection
– Available in several material combinations
– From 1 to 12 tube rows.
– From 1.8 to 6.0 mm fin pitches.

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Design

The coils are produced in three parts: finned body, headers and casing.

The staggered tubes together with the effective fins are assembled in the finned body to achieve maximum efficiency.

The headers are equipped with plugged nipples for venting and drainage. The plug is designed as a manual purging valve.

All the connections are externally threaded (BSP). The connection restricts the liquid flow as follows:

DN 15	max	0,7 l/sec
DN 25	″	1,6
DN 32	″	2,8
DN 50	″	7,0
DN 80	″	14,0
DN 2x80	″	28,0

The coil casing conforms to Tightness Class B to Swedish VVS AMA 98 Standard and is available with

PG connections or drilled flanges with hole pitch matching the RFHF and the RVGL.

The coils weighing more than 25 kilos are equipped with lifting beams. The extract air coil is equipped with a drip tray that in the standard version is designed for vertical draining.
Horizontal draining is available as an accessory, see under Accessories.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins.

The casing is made of hot galvanized sheet steel. The drip tray of the extract air coil is made of 304L stainless steel.

The headers are made of steel except those to DN 15 and DN 25 that are made of copper with brass connections.

Materials capable of withstanding aggressive environments are available, see the list of materials on the next page.

Accessories

A variety of different accessories are available, such as a by-pass pipework package, water trap, droplet eliminators, etc. See the section on accessories.

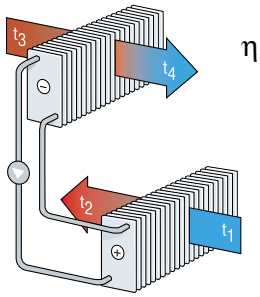
Sizing

Use our product selection program called **Coils** for sizing. See under the heading: ECOTERM Heat Recovery System. The temperature efficiency is defined in Figure 1. The computer program enables you to size systems consisting of a number of coils. It also enables you to obtain a complete energy savings estimate and a layout showing the components included in the system.
The program provides the following data:

Temperature efficiency:		%
Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material data, coil data and product codes.

Temperature efficiency according to Eurovent



$$\eta_t = \frac{t_2 - t_1}{t_3 - t_1}$$

Fig. 1

Installation

The coils are labelled to indicate how the inlet and return piping is to be connected. The coils shall be connected to obtain a counter-flow mode, see Fig 2. The coils can be ordered in the right-hand or the left-hand version. The system must be adequately vented to provide correct performance. More information can be obtained from our product selection program called **Coils** or downloaded from our website on the Internet..

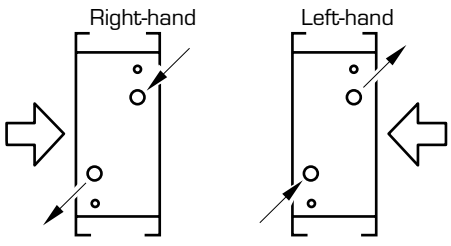
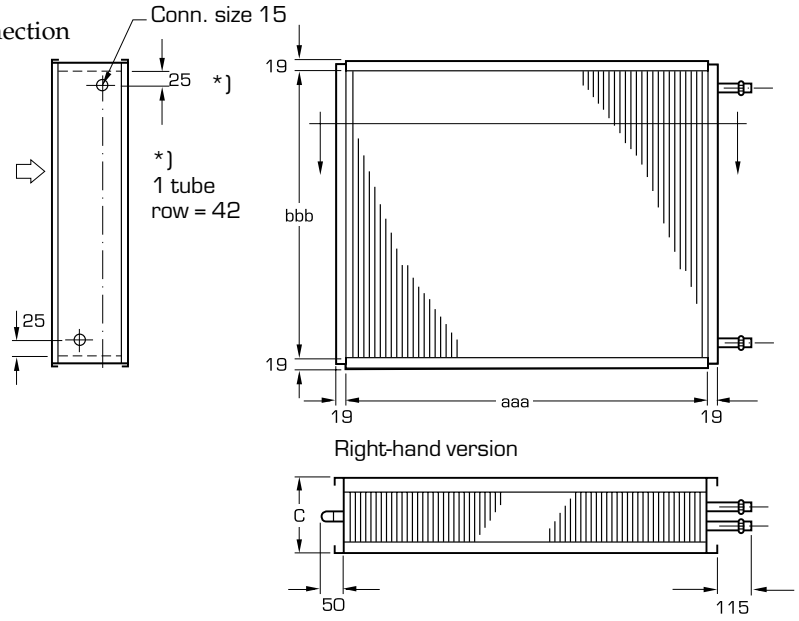


Fig. 2

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

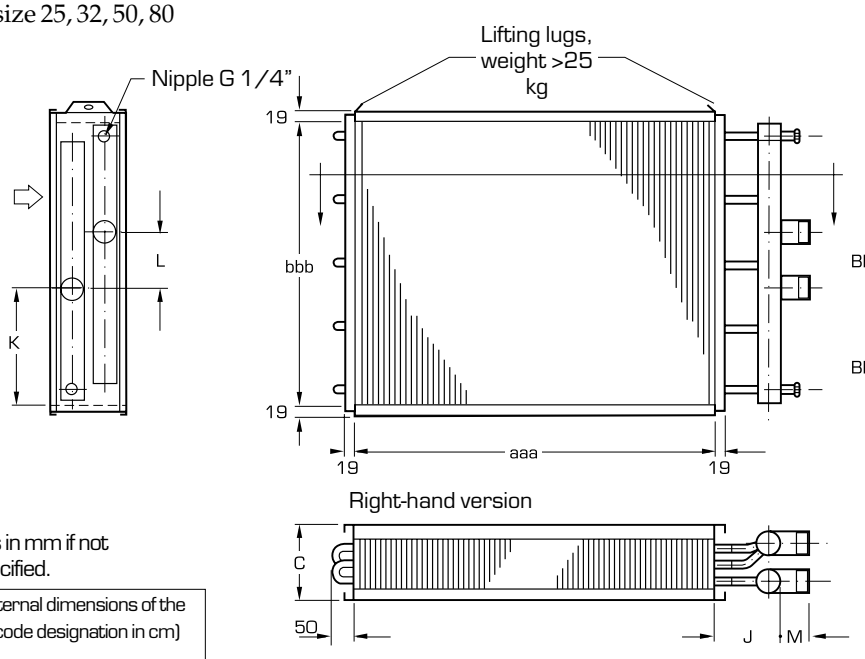
Dimensions, Coil for Slip-clamp Connection with Exposed Headers – Q(L,F)TG

Pipe connection size 15

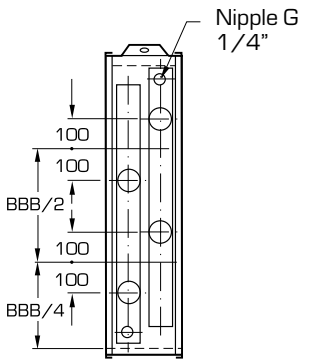


Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

bbb cm	L
<040	120
≥040	200

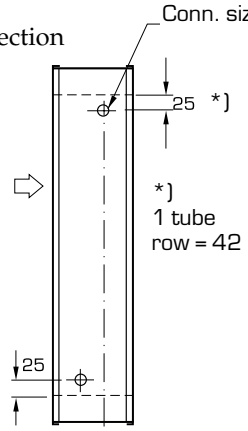
Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

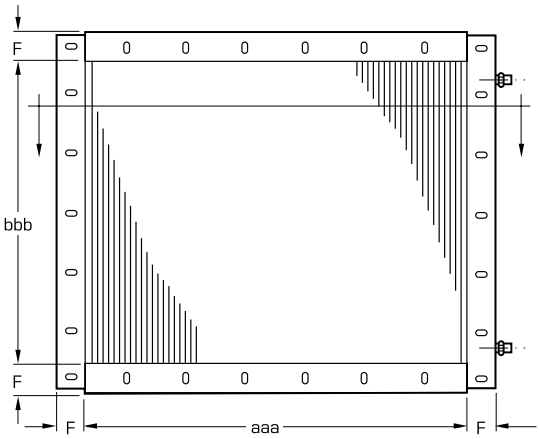
Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

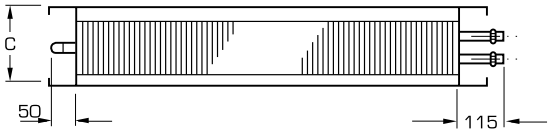
Dimensions, Coil for Flanged Connection with Exposed Headers – Q(L,F)TF

Pipe connection size 15





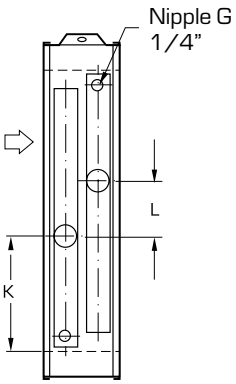
Right-hand version

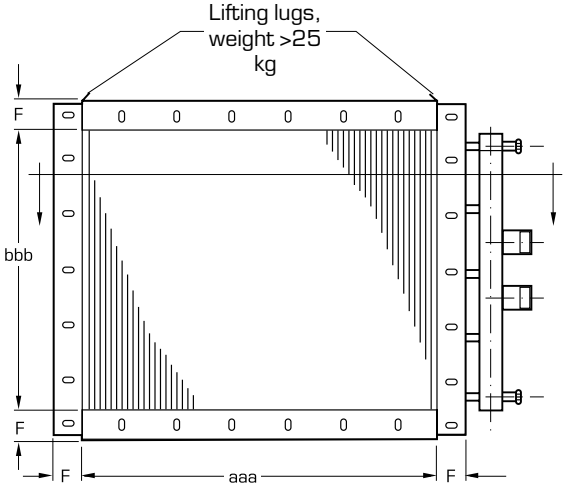


For particulars of hole pitches, see section: Accessories.

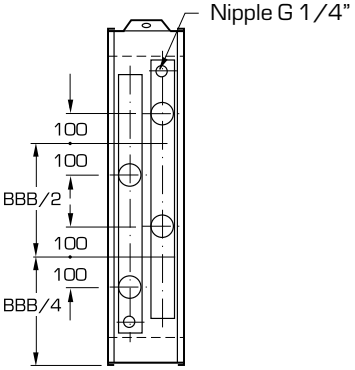
Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80

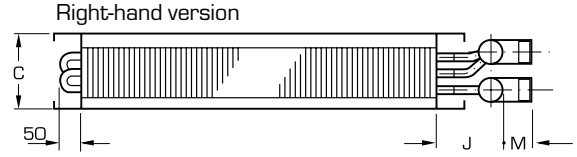




Pipe conn. size 2 x 80



Right-hand version



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

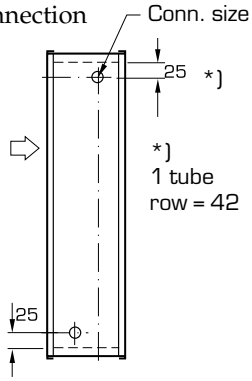
Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

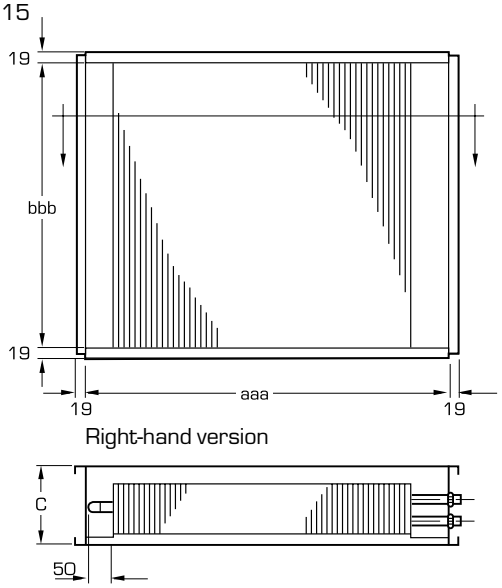
Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Dimensions, Coil for Slip-clamp Connection with Enclosed Headers – Q(L,F)TB

Pipe connection size 15

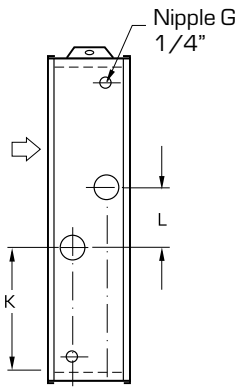


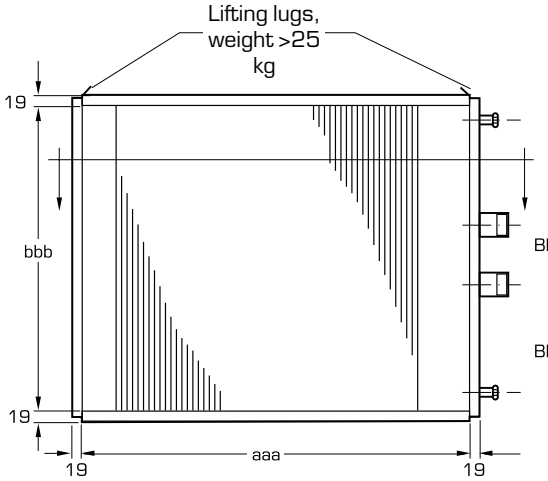


Right-hand version

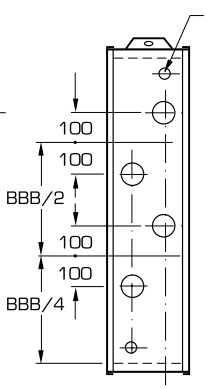
Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80

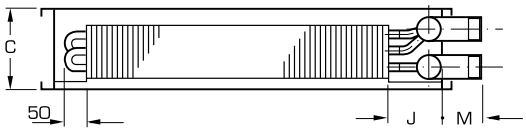




Pipe conn. size 2 x 80



Right-hand version



All dimensions in mm if not otherwise specified.

aa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

bbb cm	L
<040	120
≥040	200

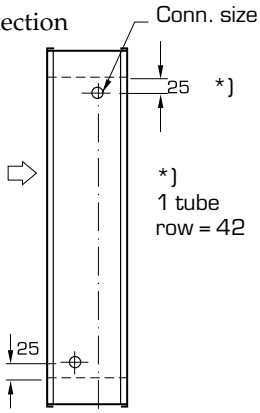
Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

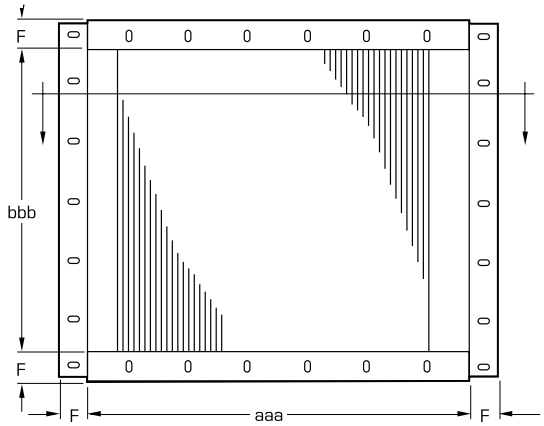
Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

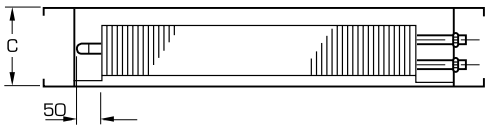
Dimensions, Coil for Flanged Connection with Enclosed Headers – Q(L,F)TH

Pipe connection size 15





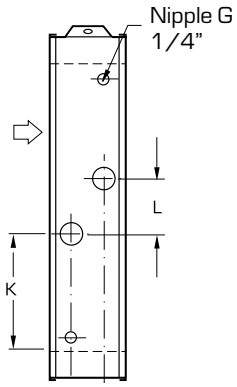
Right-hand version



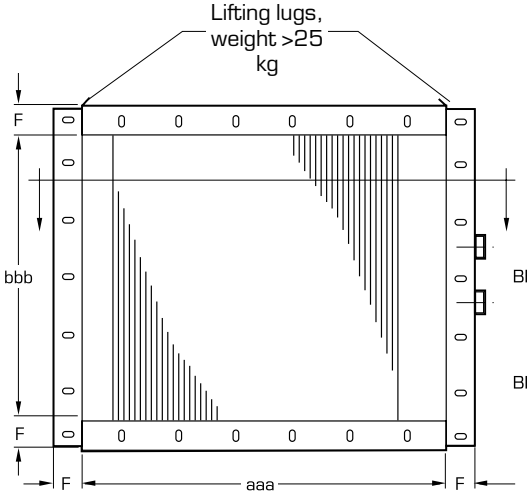
For particulars of hole pitches, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

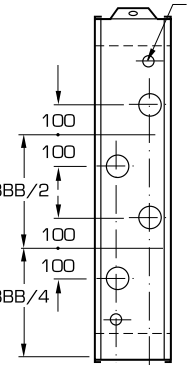
Pipe conn. size 25, 32, 50, 80



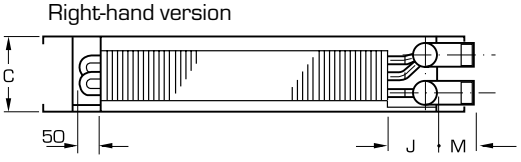
Lifting lugs, weight >25 kg



Pipe conn. size 2 x 80



Right-hand version



All dimensions in mm if not otherwise specified.

aaa x bbb =Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

aaa cm	F
≤240	40
>240	50

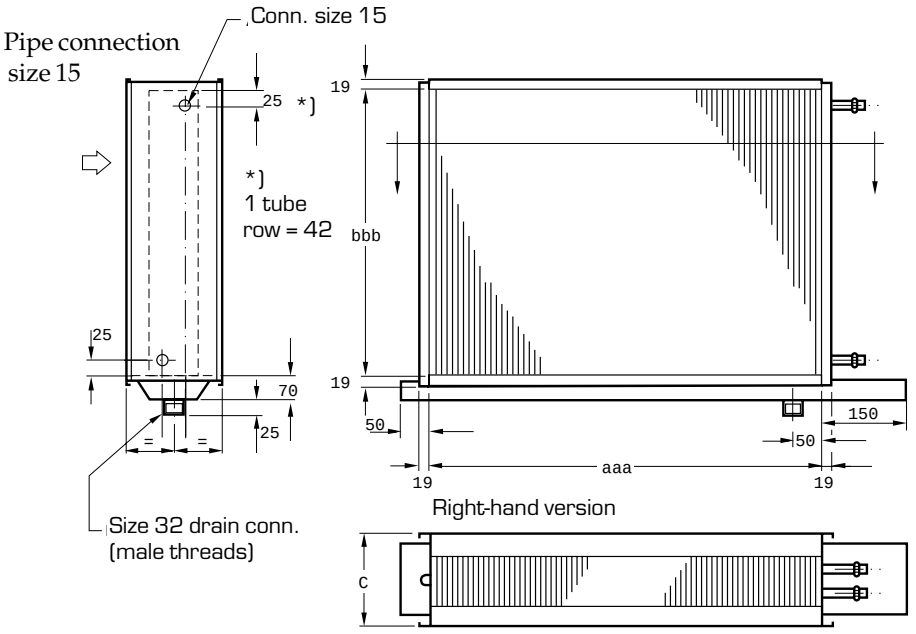
bbb cm	L
<040	120
≥040	200

Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

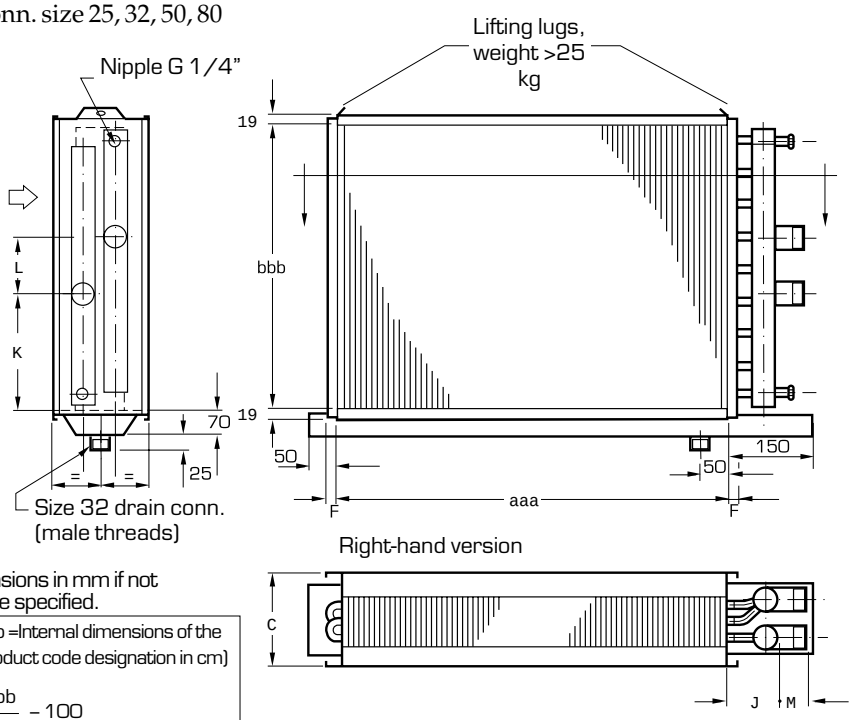
Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Dimensions, Coil for Slip-clamp Connection with Exposed Headers – Q(L,F)FG

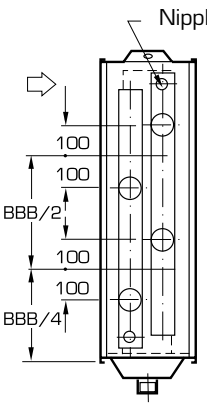


Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb =Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

bbb cm	L
<040	120
≥040	200

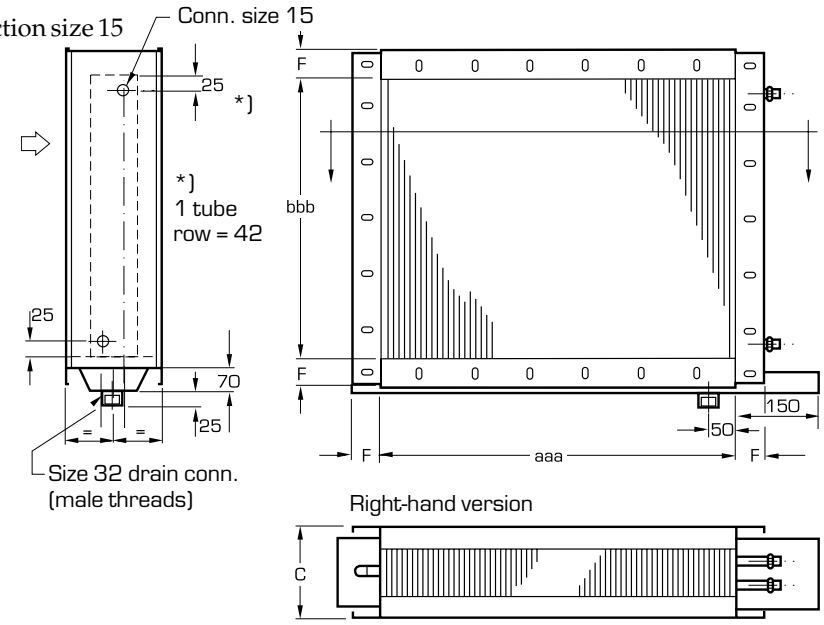
Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe connec-tion	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Dimensions, Coil for Flanged Connection with Exposed Headers – Q(L,F)FF

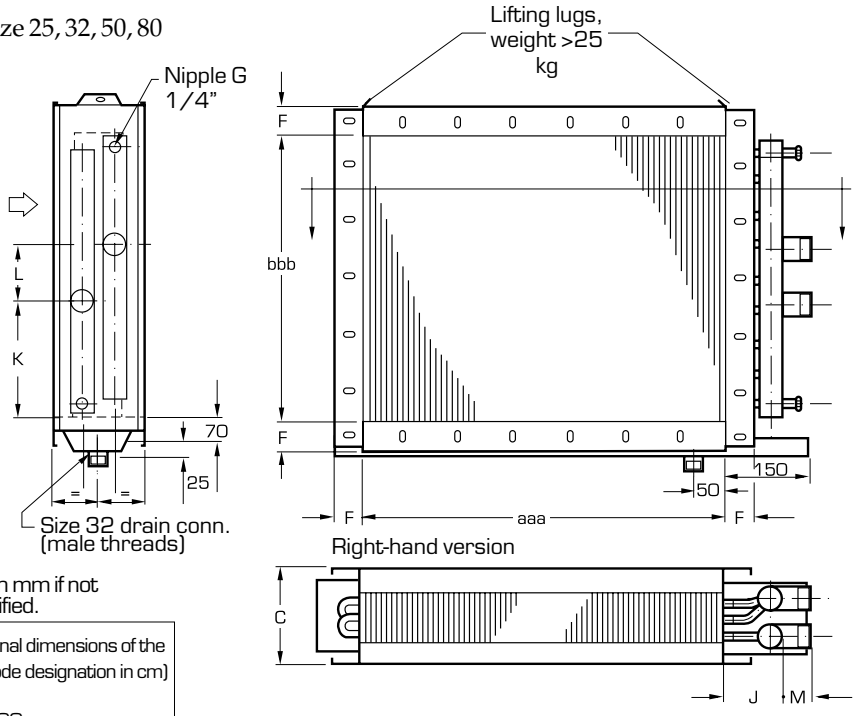
Pipe connection size 15



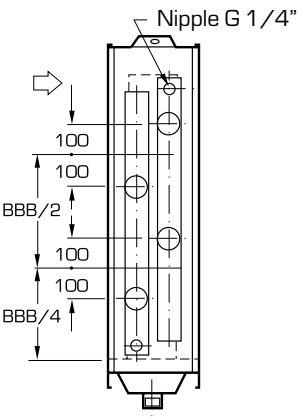
For particulars of hole pitches, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

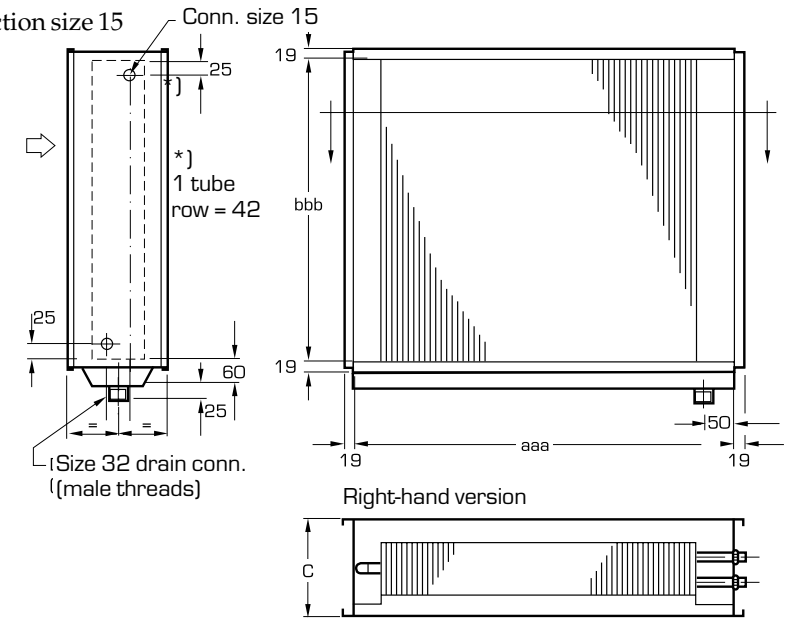
Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

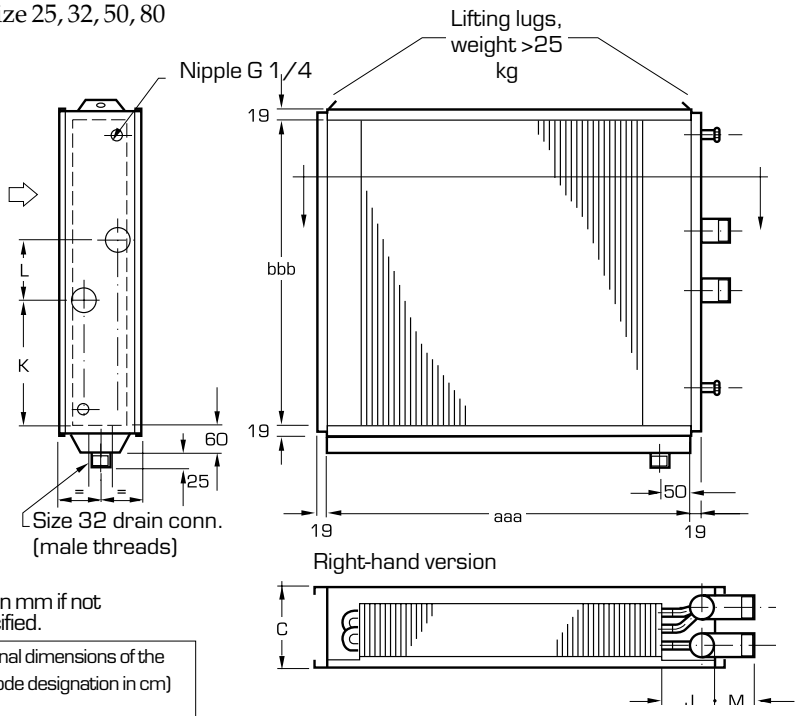
Dimensions, Coil for Slip-clamp Connection with Enclosed Headers – Q(L,F)FB

Pipe connection size 15

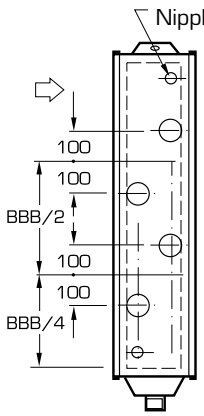


Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb =Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

bbb cm	L
<040	120
≥040	200

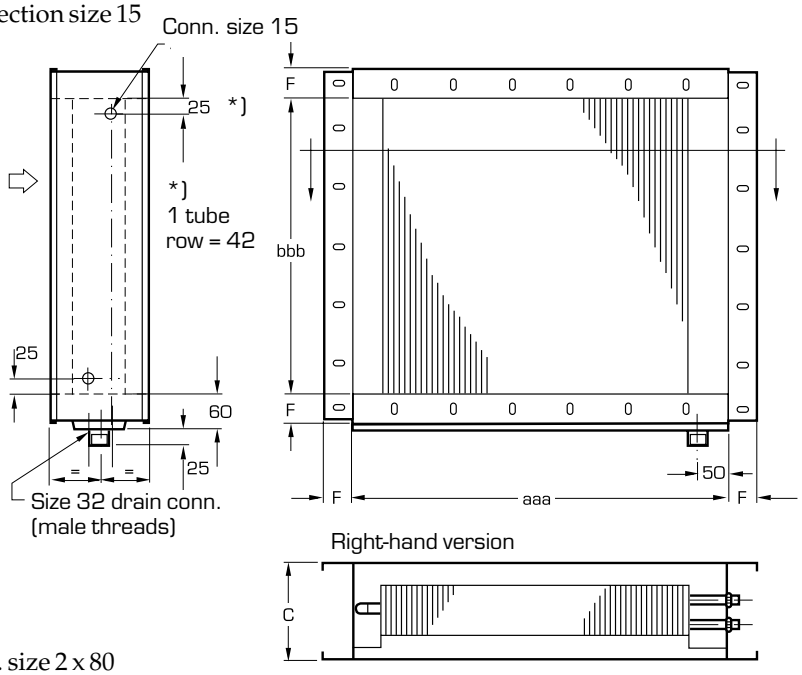
Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C, mm Droplet eliminator without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe Connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Dimensions, Coil for Flanged Connection with Enclosed Headers – Q(L,F)FH

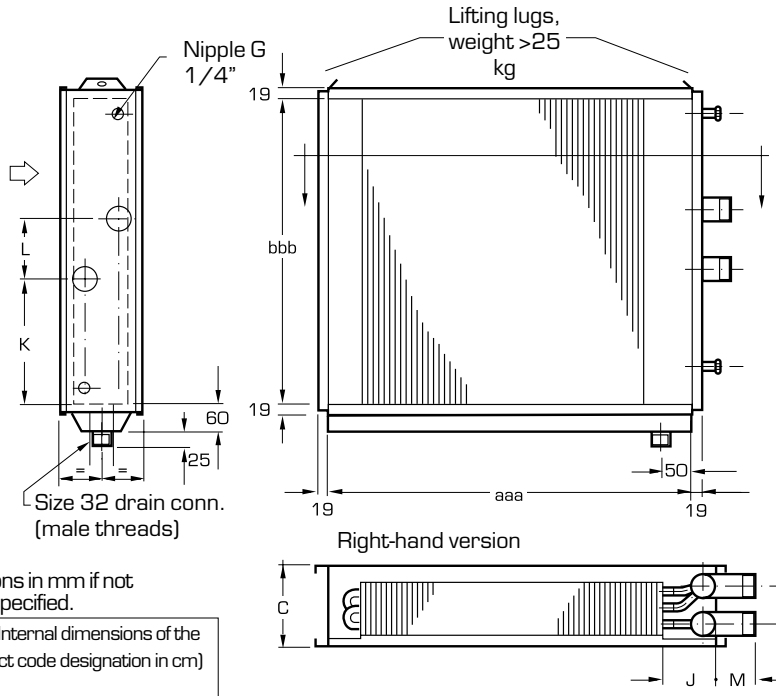
Pipe connection size 15



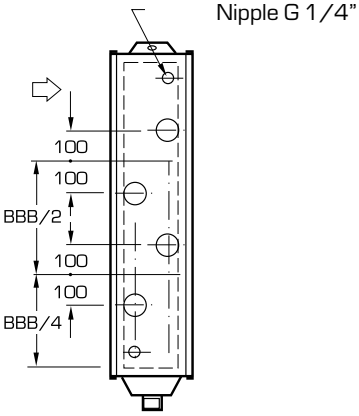
For particulars of hole pitches, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 2 x 80



Pipe conn. size 2 x 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

aaa cm	F
≤240	40
>240	50

bbb cm	L
<040	120
≥040	200

Number of tube rows (Code suffix cc)	C, mm Droplet eliminator		Number of tube rows (Code suffix cc)	C, mm Droplet eliminator	
	without	with		without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Pipe Connection	J mm	M mm
15	(J + M) 115	
25	89	90
32	98	90
50	115	100
80	144	110
82 (2x80)	144	110

Duct and Plant Room Coils for the ECOTERM® Heat Recovery System

Maintenance
Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

Environment
An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data
Standard sizes from 200 x 200 mm to 3500 x 2400 mm.
Sizes up to 8000 x 2400 mm can be produced to special order.

Number of tube rows:	1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch:	1,8, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0 mm.
Max. permissible liquid velocity:	1,5 m/sek.

Conforms to Tightness Class B to Swedish Standard VVS-AMA 98.

Extract air coil:	Max. permissible air velocity without droplet eliminator 2.9 m/s. Max. permissible air velocity with droplet eliminator 5.0 m/s.
Supply air coil:	Max. permissible air velocity 5.0 m/s.

If the pressure in the ducting exceeds 300 Pa, coils with enclosed headers are recommended.

Anti-freezing Solutions (brines)
Glycols, ethanol, saline solutions, oils, etc. To ensure correct performance, it is important to fill the system with the same brine solution and concentration that it is sized to use. Various types of brine are dealt with in the calculation program and the program computes the correct pressure drop depending on the type of brine and its concentration.

Typical percentages of anti-freezing solution normally mixed with water are 20-35% ethylene glycol and 25-35% propylene glycol depending on the temperatures at which the system operates. A concentration of 20% eliminates frost tension in the coil.

Design Data
Max permissible operating pressure: 1.6 MPa at a max. permissible operating temperature of 150° C.

All the coils are pressure tested with dry air under water.

Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Which materials shall I choose?
See section: Heat exchangers, General.

Produktkod

Duct and plant room coils for heat recovery — **Q(L,F)(T,F)G,F,B,H-aaa-bbb-cc-dd-ee-f-g**

Pleated fins **(L)**
Smooth fins **(F)**
Supply air coil **(T)**
Extract air coil **(F)**

Type of connection
(G) = Slip-clamp connection exposed headers
(F) = Flanged connection exposed headers
(B) = Slip-clamp connection enclosed headers
(H) = Flanged connection enclosed headers

Width, cm **(aaa)**
020-800

Height, cm **(bbb)**
020-240

Number of tube rows **(cc)**
01, 02, 03, 04, 06, 08, 10, 12

Fin pitch, mm **(dd)**
18, 20, 25, 30, 40, 50, 60

Number of liquid passes **(ee)**
02-98

Connection side **(f)**
1 = right
2 = left

Materials **(g)**
See separate material list

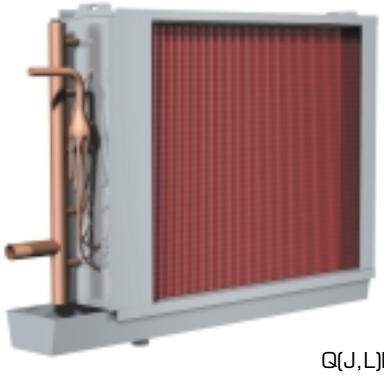
Material code = item g in the product code

Material	Casing	Headers	Fins
A	Fzv	Steel (conn. 25, Cu)	Al (standard)
B	Fzv	Cu	Cu
D	Fzv	Cu	Al
E	Fzv	Steel (conn. 25, Cu)	Corropaint
F	Fzv	Cu	Cu tinned
K	Fzv	Cu	Corropaint
L	AISI 304L	Steel	(conn. 25, Cu) Al
M	AISI 304L	Cu	Cu
N	AISI 304L	Cu	Al
O	AISI 304L	Steel (conn. 25, Cu)	Corropaint
P	AISI 304L	Cu	Cu tinned
Q	AISI 304L	Steel (conn. 25, Cu)	Al Corrodip
R	AISI 304L	Cu	Corropaint

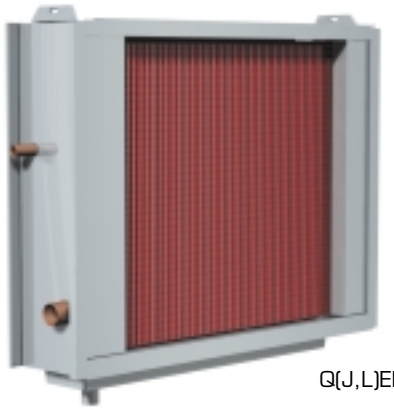
Fzv = galvanized sheet steel
AISI = stainless sheet steel
Cu = copper
Al = aluminium

Notes

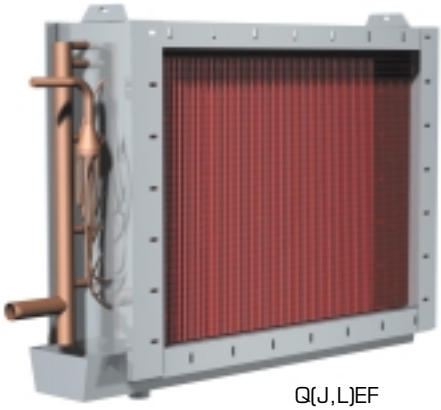
Duct and Plant Room Coils for Evaporative Refrigerant



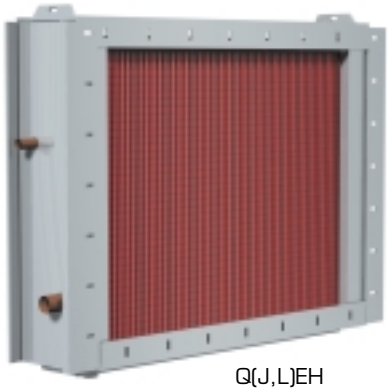
Q(J,L)EG



Q(J,L)EB



Q(J,L)EF



Q(J,L)EH

For cooling air with evaporative refrigerant

Design

QJ=3/8″ tubes
QL=1/2″ tubes
Coils for slip-clamp connection with exposed headers:
Q(J,L)EG
Coils for flanged connection with exposed headers:
Q(J,L)EF
Coils for slip-clamp connection with enclosed headers:
Q(J,L)EB
Coils for flanged connection with enclosed headers:
Q(J,L)EH

3/8″ tubes
Sizes from 200 x 200 mm to 2000 x 1600 mm.

1/2″ tubes
Sizes from 200 x 200 mm to 3500 x 2400 mm.

Normal air velocity should be 2 - 3 m/s.

Easy to size using the product selection program called **Coils** that you'll find under the heading "Heating and Cooling Coils".

Features

– Conform to AMA Code QFC.22.
– Designed for air flows up to 40 m^3/s
– All the coils conform to Tightness Class B to Swedish Standard VVS AMA 98.
– Enclosed or exposed headers.
– Slip-clamp or flanged connection.
– Available in several material combinations.
– From 1 to 12 tube rows.
– From 2.0 to 6.0 mm fin pitches.
– Available with several output stages.

Duct and Plant Room Coils for Evaporative Refrigerant

Design

The coils are designed for horizontal airflow and are produced in three parts: headers/distributing pipes, finned body and casing. The tubes in the finned body are staggered and together with the pleated fins achieve maximum output. The coils are available with 3/8" or 1/2" dia. tubes. The coils are produced with distributing pipes for the inflowing and headers for outflowing refrigerant.

The coils can be supplied for one, two or several output stages depending on the height of the coil.
The coils with two output stages are normally connected so that every other loop belongs to output stage 1 and the intervening loops belong to stage 2. (interlace connection) see Fig 1. Coils with three or more output stages are normally split up vertically. See Fig 2.

The coil casing conforms to Tightness Class B to Swedish Standard VVS AMA 98 and is available with PG connection or drilled flanges matching the RFHF, RVGL. Coils weighing more than 25 kilos are equipped with lifting beams. The drain tray is supplied in a version for vertical draining. Horizontal draining is available as an option.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins. The casing is made of hot galvanized sheet steel with drain tray made of 304L stainless steel. The header and the distributing pipes are made of copper whereas the distributor is made of brass. Materials capable of withstanding aggressive environments are available, see the list of materials.

Accessories

A variety of different accessories, such as expansion valves, flanges, droplet eliminators, etc. are available. See the section on accessories.

Sizing

Use our product selection program called Coils for sizing. See under the heading Heating and Cooling Coils. The product selection program also provides dimensional drawings.
The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop, humid and dry	Pa
	Leaving humidity	%
	Kondensat	g/s
Refrigerant side:	Refrigerant pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. If the coil is supplied with several output stages, it has a copper identification label brazed that indicates the output stage. The coil can be ordered in the right-hand or left-hand version. More information can be obtained from our product selection program called Coils or downloaded from our website on the Internet.

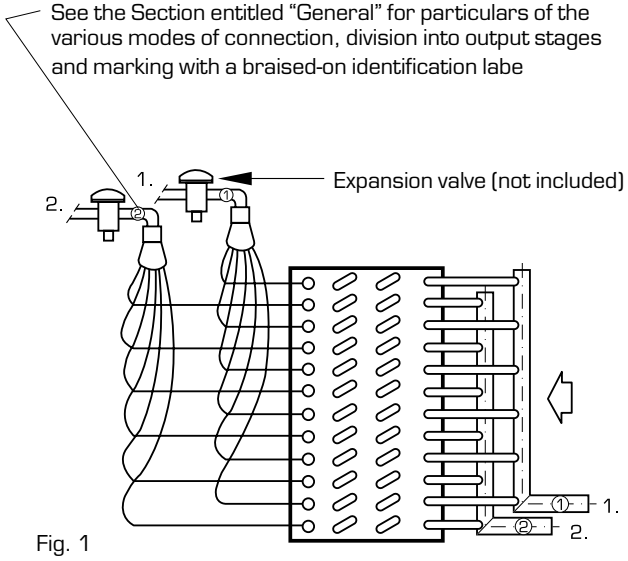


Fig. 1

Three or more output stages are normally split up vertically.

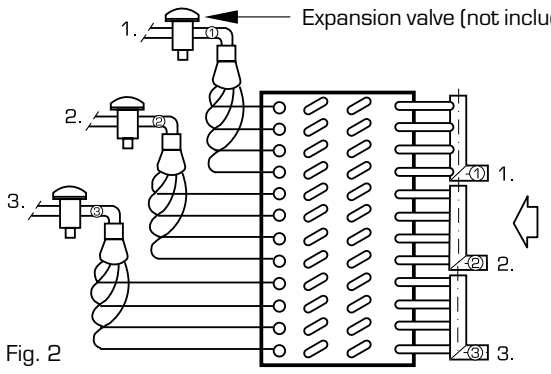


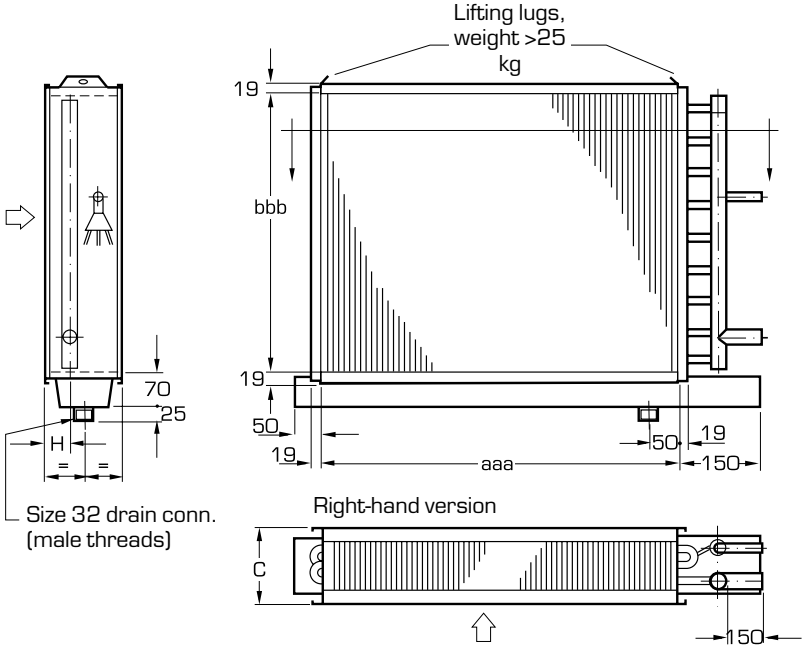
Fig. 2

Maintenance

Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

Duct and Plant Room Coils for Evaporative Refrigerant

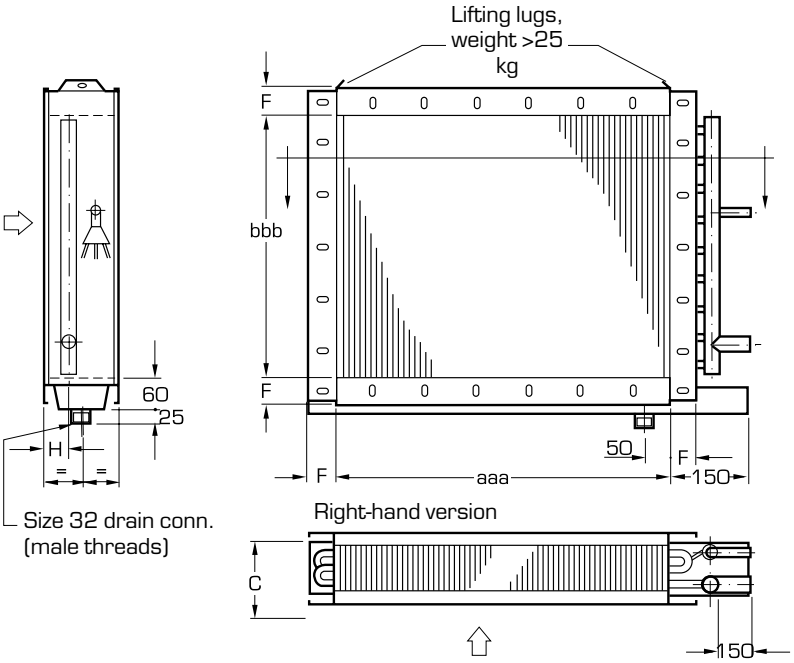
Dimensions, Coils for Slip-clamp Connection with Exposed Headers – Q(J,L)EG



Detailed dimensional drawings, weights and volumes can be obtained from the product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

Dimensions, Coils for Flanged Connection with Exposed Headers – Q(J,L)EF



For particulars of hole pitches, see section: Accessories.

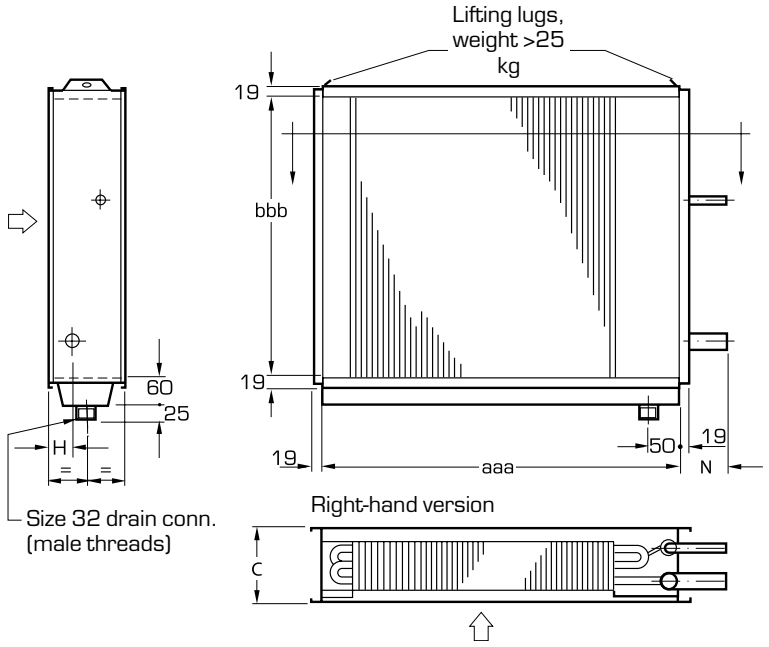
aaa cm	F
≤240	40
>240	50

Number of tube rows (code suffix cc)	C, mm Droplet eliminator		Number of tube rows (code suffix cc)	C, mm Droplet eliminator	
	without	with		without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Number of tube rows (code suffix cc)	H mm	- mm	Number of tube rows (code suffix cc)	H mm	- mm
01	-	-	06	-	-
02	-	-	08	-	-
03	-	-	10	-	-
04	-	-	12	-	-

Duct and Plant Room Coils for Evaporative Refrigerant

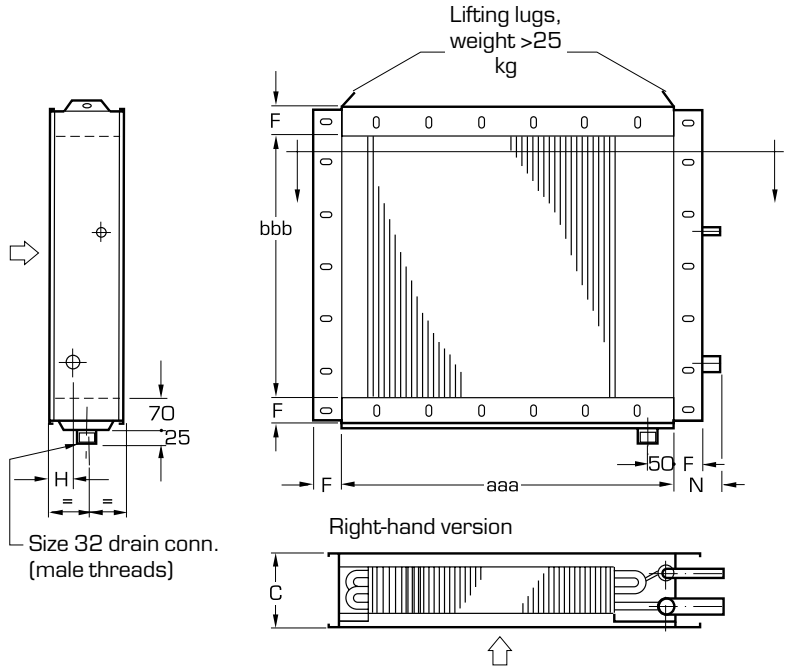
Dimensions, Coils for Slip-clamp Connection with Enclosed Headers – Q(J,L)EB



Detailed dimensional drawings, weights and volumes can be obtained from the product selection program called **Coils**

All dimensions in mm if not otherwise specified.

Dimensions, Coils for Flanged Connection with Enclosed Headers – Q(J,L)EH



For particulars of hole pitches matching the RFHF, see section: Accessories.

aaa cm	F
≤240	40
>240	50

Number of tube rows (code suffix cc)	C, mm Droplet eliminator		Number of tube rows (code suffix cc)	C, mm Droplet eliminator	
	without	with		without	with
01	300	350	06	350	400
02	300	350	08	400	460
03	300	350	10	460	520
04	300	350	12	520	580

Number of tube rows (code suffix cc)	H mm	- mm	Number of tube rows (code suffix cc)	H mm	- mm
01	-	-	06	-	-
02	-	-	08	-	-
03	-	-	10	-	-
04	-	-	12	-	-

Pipe connection	N mm
1 1/8"	134
1 3/8"	140
1 5/8"	147
2 1/8"	134

Duct and Plant Room Coils for Evaporative Refrigerant

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data

Sizes are available from 200 x 200 mm to 2000 x 1600 mm in 3/8" (QJ) and 200 x 200 till 3500m x 2400 in 1/2" (QL).

Number of tube rows: 1, 2, 3, 4, 6, 8, 10, 12.

Fin pitch: 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 mm.

Max. permissible air velocity without droplet eliminator: 2.9 m/sec.

Max. permissible air velocity with droplet eliminator: 5.0 m/sec.

Conforms to Tightness Class B to Swedish Standard VVS-AMA 98.

If the pressure in the ducting exceeds 300 Pa, coils with enclosed headers are recommended.

Design Data

Max permissible operating pressure: 2.2 MPa at a max. permissible operating temperature of 100° C.

All the coils are pressure tested and leakage tested with dry air under water.

For utmost cleanness, the coils are inert-gas soldered and filled with nitrogen prior to delivery.

Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED)

Material code = item g in the product code

Tubes	Material	Casing	Headers	Fins
QL 1/2"	A	Fzv	Cu	Al (standard)
	B	Fzv	Cu	Cu
	E	Fzv	Cu	Corropaint
	F	Fzv	Cu	Cu tinned
	L	AISI 304L	Cu	Al
	M	AISI 304L	Cu	Cu
	O	AISI 304L	Cu	Corropaint
	P	AISI 304L	Cu	Cu tinned
	Q	AISI 304L	Cu	Al Corrodip
QJ 3/8"	A	Fzv	Cu	Al (standard)
	L	AISI 304L	Cu	Al
	Q	AISI 304L	Cu	Al Corrodip

Fzv = galvanized sheet steel
AISI = stainless sheet steel
Cu = copper
Al = aluminium

Which material shall I choose?

See section: Heat Exchangers, General.

Product Code

Duct and Plant Room Coils for Evaporative Refrigerant **Q(J,L)E(G,F,G,H)-aaa-bbb-cc-dd-ee-f-g**

Diameter of tubes
3/8" dia. tubes **(J)**
1/2" dia. tubes **(L)**

Type of Connection
(G) = Slip-clamp connection exposed headers
(F) = Flanged connection exposed headers
(B) = Slip-clamp connection enclosed headers
(H) = Flanged connection enclosed headers

Width, cm **(aaa)**
020-800

Height, cm **(bbb)**
020-240

Number of tube rows **(cc)**
01, 02, 03, 04,06, 08, 10, 12

Fin pitch, mm **(dd)**
20, 25, 30, 40, 50, 60

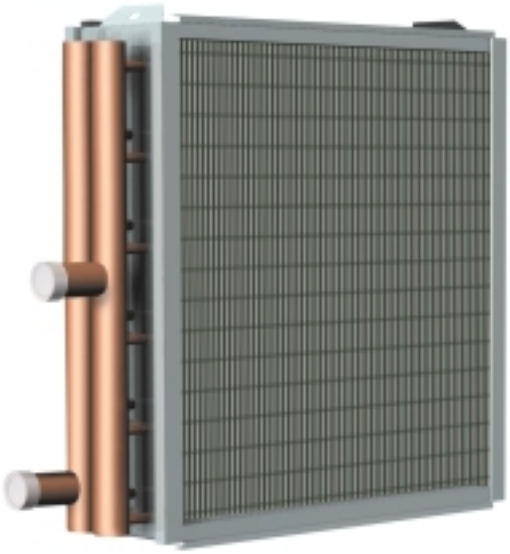
Number of liquid passes **(ee)**
02-98

Connection side **(f)**
1 = right-hand
2 = left-hand
3 = right-hand, split circuit 1/2+1/2
4 = left-hand, split cir cuit 1/2+1/2
5 = right-hand, split circuit 1/3+2/3
6 = left-hand, split cir-cuit 1/3+2/3
7 = right-hand, 3 equal stages
8 = left-hand, 3 equal stages

Material **(g)**
See the List of Materials in the left-hand column

Notes

Duct and Plant Room Coils for Condensing Refrigerant



For heating air with condensing medium

Design

Coils for slip-clamp connection with exposed headers: **QLOG**
Coils for flanged connection with exposed headers: **QLOF**
Coils for slip-clamp connection with enclosed headers: **QLOB**
Coils for flanged connection with enclosed headers: **QLOH**

Standard range from 200 x 200 mm to 3500 x 2400 mm. Larger sizes are available to special order.

Normal air velocity: 3 - 4 m / s.

Easy to size using the computerized product selection program called **Coils**. See under the heading: Heating and Cooling Coils.

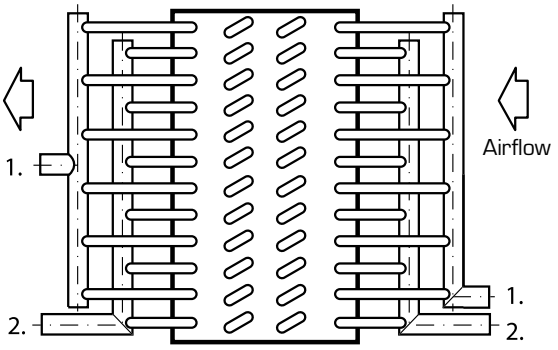
Features

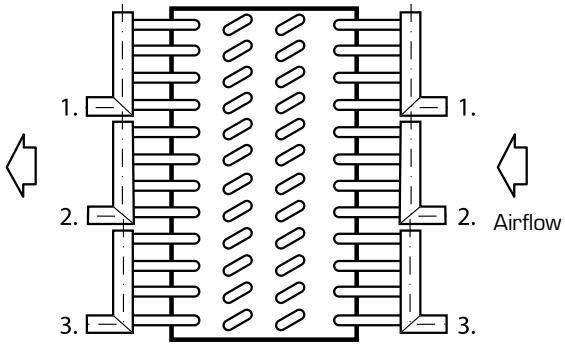
– Conforms to AMA Code QFC.1
– For air flows up to 40 m^3/s
– All the coils conform to the provisions of Tightness Class B to Swedish Standard VVS AMA 98
– Enclosed or exposed headers
– Slip-clamp or flanged connection
– Available in several material combinations.
– Number of tube rows: from 1 to 12
– Fin pitches from 1.8 to 6.0 mm.
– Available in several output stages.

Duct and Plant Room Coils for Condensing Refrigerant

Design

The coils are produced in three parts: finned body, headers and casing. The tubes in the finned body are staggered and together with the pleated fins achieve maximum output. The coils can be supplied for one, two or several output stages depending on the height of the coil. The coils with two output stages are normally connected so that every other loop belongs to output stage 1 and the intervening loops belong to stage 2. (interlace connection).





The coils with three or more output stages are normally split up vertically.
The coil casing conforms to Tightness Class B to Swedish Standard VVS AMA 98.

The coils are available with PG connection or drilled flanges matching the RFHF, RVGL. Coils weighing more than 25 kilos are equipped with lifting beams.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins. The casing is made of hot galvanized sheet steel. The headers are made of copper.
Materials capable of withstanding aggressive environments are available, see the list of materials.

Accessories

A variety of different accessories are available, see the separate section on accessories.

Sizing

Use our product selection program called Coils for sizing. The product selection program also provides dimensional sketches.

Select QLO(G,F,B,H) under the heading: Heating and Cooling Coils.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Medium side:	Return temperature	°C
	Medium flow	l/s
	Medium pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. The coil should be connected to obtain a counter-flow mode, see Fig. 1. The coil can be ordered in the right-hand or left-hand version

Connected for counter-flow

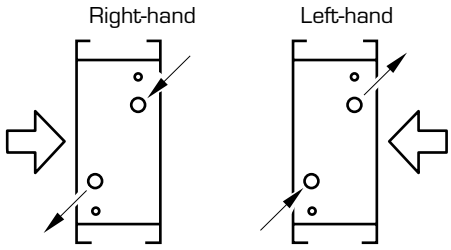


Fig. 1

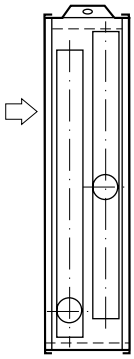
Maintenance

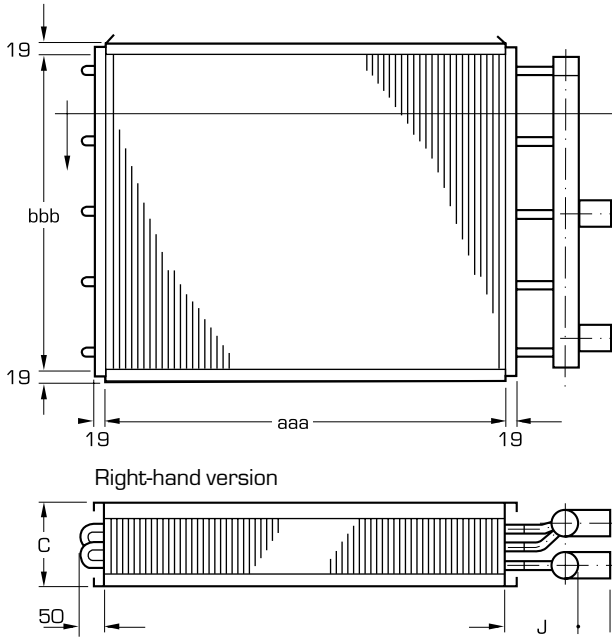
Operating and maintenance instructions can be obtained from our product selection program called Coils or from our website on the Internet.

Duct and Plant Room Coils for Condensing Refrigerant

Dimensions, Coils for Slip-clamp Connection with Exposed Headers – QLOG

Pipe conn. size 12

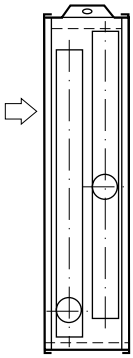


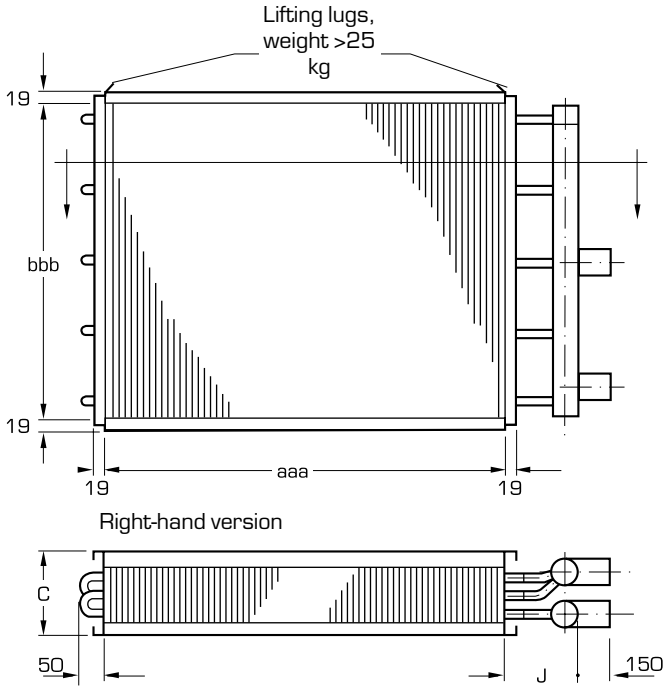


Detailed dimensional drawings, weights and volumes can be obtained via the product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

Pipe conn. size 28.6, 34.9, 41.3, 54.0





aaa cm	F
≤240	40
>240	50

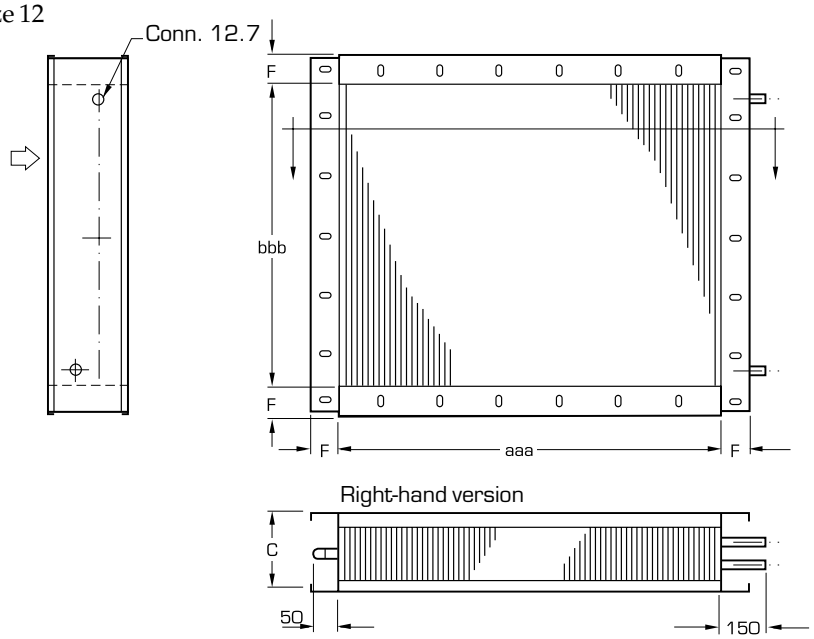
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	150	06	350
02	150	08	400
03	150	10	460
04	300	12	520

Pipe connection	J mm
28,6	84
34,9	90
41,3	97
54,0	109

Duct and Plant Room Coils for Condensing Refrigerant

Dimensions, Coils for Flanged Connection with Exposed Headers – QLOF

Pipe conn. size 12

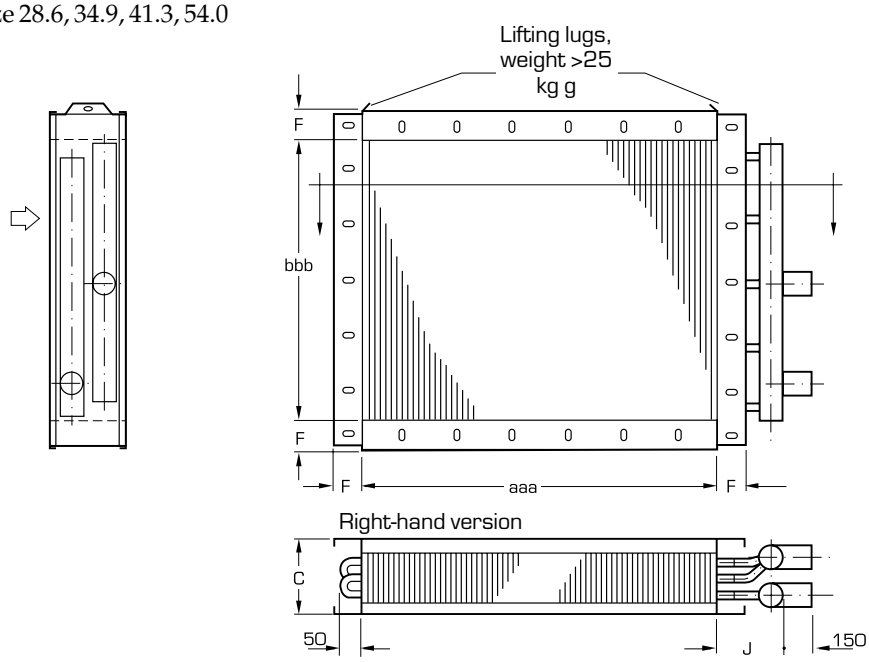


For particulars of hole pitches, see section: Accessories.

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils**.

All dimensions in mm if not otherwise specified.

Pipe conn. size 28.6, 34.9, 41.3, 54.0



aaa cm	F
≤240	40
>240	50

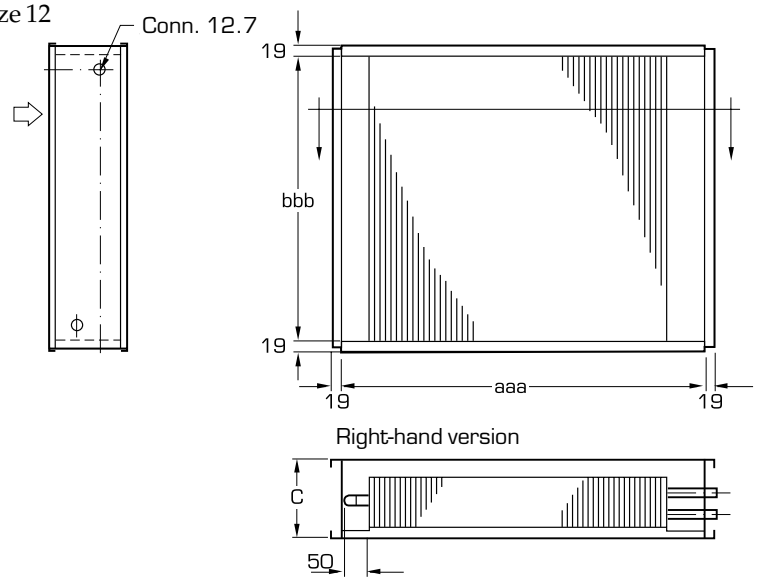
Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	150	06	350
02	150	08	400
03	150	10	460
04	300	12	520

Pipe connec-tion	J mm
28,6	84
34,9	90
41,3	97
54,0	109

Duct and Plant Room Coils for Condensing Refrigerant

Dimensions, Coils for Slip-clamp Connection with Enclosed Headers – QLOB

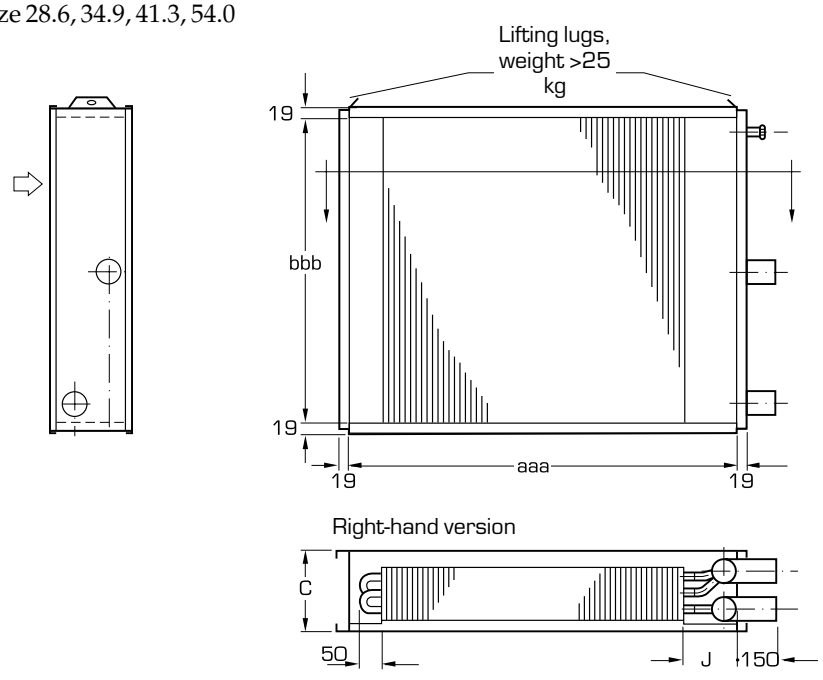
Pipe conn. size 12



Detailed dimensional drawings, weights and volumes can be obtained via the product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

Pipe conn. size 28.6, 34.9, 41.3, 54.0



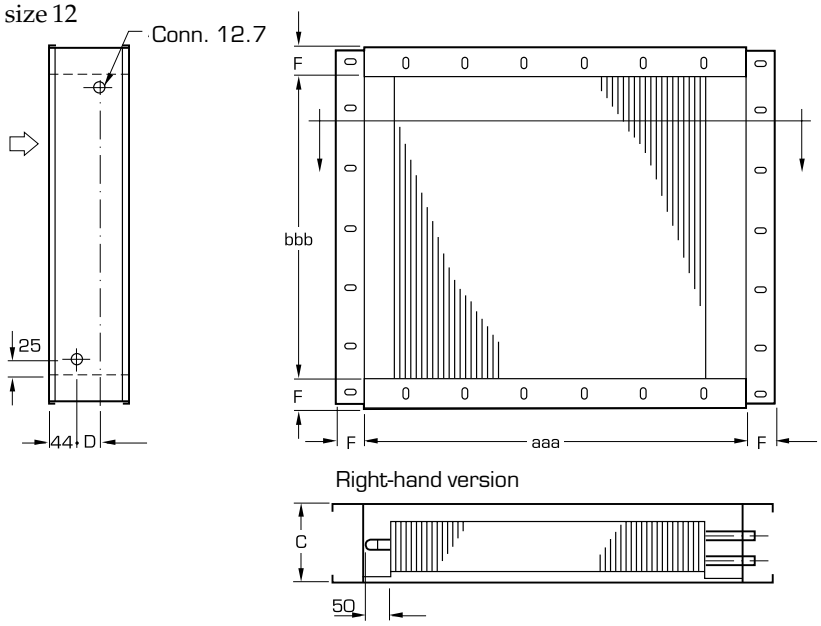
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

Pipe connection	J mm
28,6	84
34,9	90
41,3	97
54,0	109

Duct and Plant Room Coils for Condensing Refrigerant

Dimensions, Coils for Flanged Connection with Enclosed Headers – QLOH

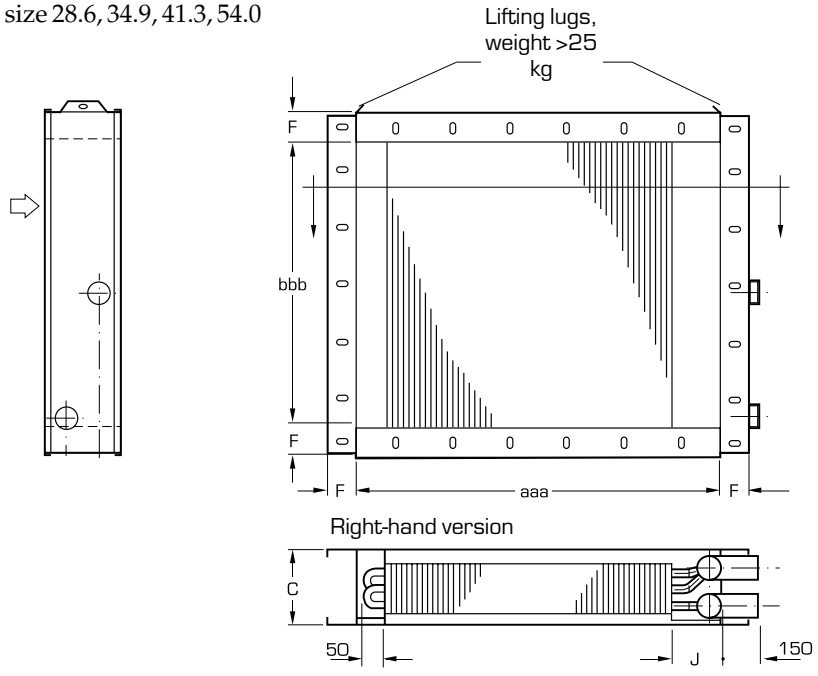
Pipe conn. size 12



Detailed dimensional drawings, weights and volumes can be obtained via the product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

Pipe conn. size 28.6, 34.9, 41.3, 54.0



aaa cm	F
≤240	40
>240	50

Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	300	06	350
02	300	08	400
03	300	10	460
04	300	12	520

Pipe connection	J mm
28,6	84
34,9	90
41,3	97
54,0	109

Duct and Plant Room Coils for Condensing Refrigerant

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called Coils or from our website on the Internet.

Technical Data

Sizes from 200 x 200 mm to 3500 x 2400 mm.

Number of tube rows:	1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch:	1.8, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 mm.
Max. permissible air velocity:	5 m/sec.

Design Data

Max. permissible air pressure 2.2 MPa at a max. operating temperature of 100 °C.
For particulars about operation at higher pressures, contact us. All coils are pressure tested and leakage tested under water. For utmost cleanness, the coils are inert-gas soldered and filled with nitrogen prior to delivery.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Material Code = position g in the product code

Material	Casing	Headers	Fins
A	Fzv	Cu	Al (standard)
B	Fzv	Cu	Cu
E	Fzv	Cu	Corropaint
F	Fzv	Cu	Cu tinned
L	AISI 304L	Cu	Al
M	AISI 304L	Cu	Cu
O	AISI 304L	Cu	Corropaint
P	AISI 304L	Cu	Cu tinned
Q	AISI 304L	Cu	Al Corrodip

Fzv = galvanized sheet steel
AISI = stainless sheet steel
Cu = copper
Al = aluminium

Which material shall I choose?
See section: Heat Exchangers, General.

Product Code

Duct and Plant Room Coils for Condensing Refrigerant **QLO(G,F,G,H)-aaa-bbb-cc-dd-ee-f-g**

Type of Connection
(G) = Slip-clamp connection exposed headers
(F) = Flanged connection exposed headers
(B) = Slip-clamp connection enclosed headers
(H) = Flanged connection enclosed headers

Width, cm **(aaa)**
020-800

Height, cm **(bbb)**
020-240

Number of tube rows **(cc)**
01, 02, 03, 04, 06, 08, 10, 12

Fin pitch, mm **(dd)**
18, 20, 25, 30, 40, 50, 60

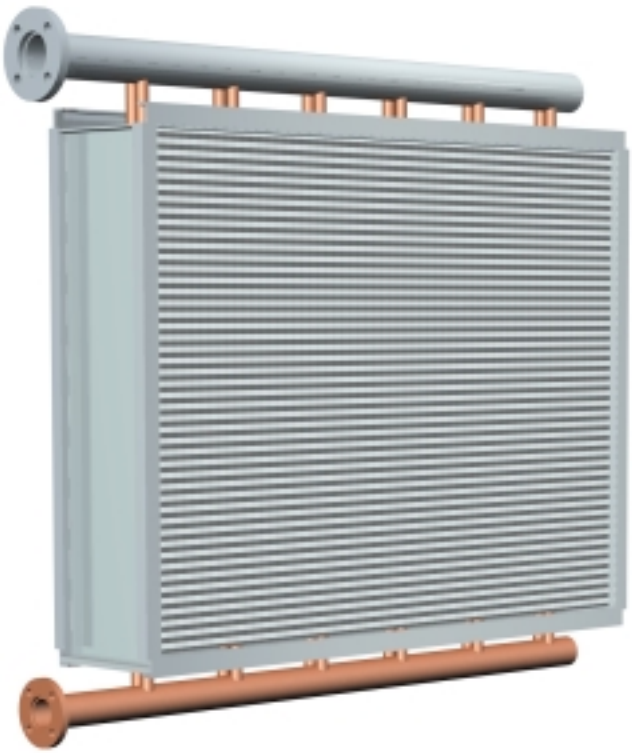
Number of liquid passes **(ee)**
02-98

Connection side **(f)**
1 = right-hand
2 = left-hand
3 = right-hand, split circuit 1/2+1/2
4 = left-hand, split circuit 1/2+1/2
5 = right-hand, split circuit 1/3+2/3
6 = left-hand, split circuit 1/3+2/3
7 = right-hand, 3 equal stages
8 = left-hand, 3 equal stages

Material **(g)**
See the List of Materials in the left-hand column.

Notes

Duct and Plant Room Coils for Steam



For heating air with steam

Design

Coils for slip-clamp connection with exposed headers:
QLSG
Coils for flanged connection with exposed headers:
QLSF

Standard range from 200 x 200 mm to 3500 x 1800 mm. Larger sizes are available to special order.

Normal air velocity: 3 – 4 m/s.

Easy to size using the computerized product selection program called **Coils**. See under the heading: Heating and Cooling Coils.

Features

– Conforms to AMA Code QFC
– For air flows up to 34 m^3/s
– Exposed headers
– Slip-clamp or flanged connection
– Available in several material combinations
– Low pressure drop on the air side
– Number of tube rows: 1 or 2
– Fin pitches from 1.8 to 6.0 mm.

Duct and Plant Room Coils for Steam

Design

The coils are produced in three parts: finned body, headers and casing. The tubes in the finned body are staggered and together with the pleated fins achieve maximum output. The coils are designed for vertical steam flow. The header connections are equipped with flanges for welding or brazing to the connecting pipework. The coils are available with PG connection or drilled flanges matching the RFHF, RVGL. Coils weighing more than 25 kilos are equipped with lifting beams.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins. The casing is made of hot galvanized sheet steel.
The headers on the steam side are made of steel, DN 25 are made of copper, and on the condensate side are made of copper. The welding flanges are made of steel and the flanges intended for brazing are made of brass with a loose ring made of steel.
Materials capable of withstanding aggressive environments are available, see the list of materials.

Accessories

A variety of different accessories are available, see the separate section on accessories

Sizing

Use our product selection program called Coils for sizing. The product selection program also provides dimensional drawings.

Select the QLS(G,F,) under the heading ”Heating and Cooling Coils.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop, humid and dry	Pa
Steam side:	Return temperature	°C
	Steam flow:	l/s
	Condensation pressure	Bar

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. The coil is connected with steam to the upper pipe and return to the lower pipe, see Fig. 1.

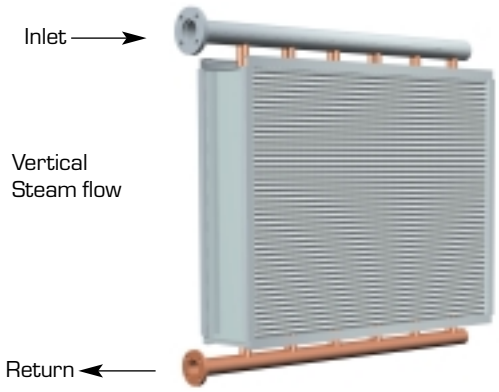


Fig 1.

Anti-freeze Protection

If freezing is likely, an anti-freeze sensor should be fitted in the air flow or an electric air heater can be used to heat the air.

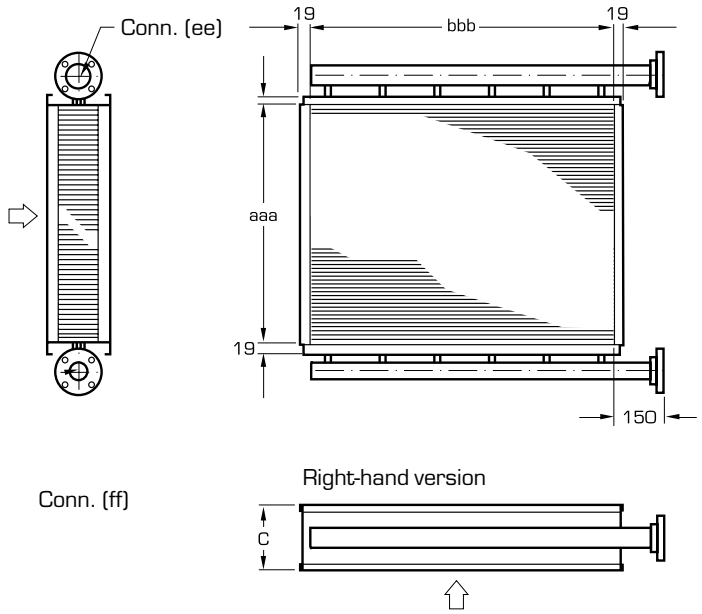
More information can be obtained from our product selection program called **Coils** or downloaded from our website on the Internet.

Maintenance

Operating and maintenance instructions can be obtained from our product selection program called Coils or from our website on the Internet.

Duct and Plant Room Coils for Steam

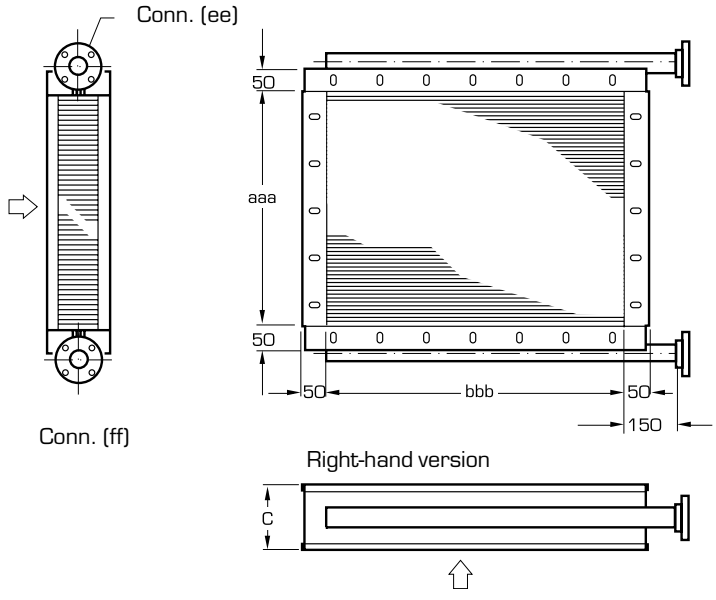
Dimensions, Coil for Slip-clamp Connection with Exposed Headers – QLSG



Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

Dimensions, Coil for Flanged Connection with Exposed Headers – QLSF



For particulars of hole pitches, see section: Accessories.

Number of tube rows (Code suffix cc)	C mm
01	132
02	161

Duct and Plant Room Coils for Steam

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called Coils or from our website on the Internet.

Technical Data

Standard sizes from 200 x 200 mm to 3500 x 1800 mm.

Tube rows:	1.2
Fin pitch:	1.8, 2.0, 2.0, 3.0, 4.0, 5.0, 6.0 mm.
Max. permissible liquid velocity:	5 m/sek.

Design Data

Max. permissible operating pressure: 1.0 MPa at a max. operating temperature of 185° C.

For particulars of higher pressures or temperatures, contact us. All coils are pressure tested and leakage tested with dry air under water.

Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Steam Purity

The pH of the steam should be between 8.8 and 9.2. The oxygen content (O2) must not exceed 0.01 mg/kg. The ammonia content (NH3) must not exceed 0.3 mg/kg.

Product Code

Duct and Plant Room Coils for Steam (vertical steam flow)

QLS(G,F)-aaa-bbb-c-dd-ee-ff-g

Type of connection
(G) = Slip-clamp connection exposed headers
(F) = Flanged connection exposed headers

Height = duct height, cm **(aaa)**
020-350

Width = duct width, cm **(bbb)**
020-180

Number of tube rows **(c)**
1, 2

Fin pitch, mm **(dd)**
18, 20, 25, 30
40, 50, 60

Connection dimension, steam side **(ee)**
25, 32, 50, 80

Connection dimension, condensate side **(ff)**
25, 32, 50, 80

Material **(g)**
See separate material list

Material code = item g in the product code

Material	Casing	Headers	Fins
A	Fzv	Steel (conn. 25, Cu)	Al (standard)
B	Fzv	Cu	Cu
D	Fzv	Cu	Al
F	Fzv	Cu	Cu tinned
L	AISI 304L	Steel (conn. 25, Cu)	Al
M	AISI 304L	Cu	Cu
N	AISI 304L	Cu	Al
P	AISI 304L	Cu	Cu tinned

Fzv = galvanized sheet steel
AISI = stainless sheet steel
Cu = copper
Al = aluminium

Which material shall I choose?
See section: Heat Exchangers, General.

Accessories

QLAZ-02, -03, -04

R 3/8 male threads

Manual air purging valve, QLAZ-02-1

For water coils. To be installed together with QLAZ-04-1 nipple.

R 3/8 female threads

Automatic air purging valve, with non-return valve, QLAZ-03-1

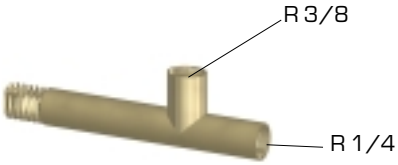
For max. 115°C and 1.1 MPa (11 at g)
For water coils together with nipple QLAZ-04-1

The valve should always be installed with the body vertical and the air valve pointing upwards. Allow sufficient clear space from the valve to ceiling for installation and removal (see dim. sketch). The non-return valve (delivered packaged together with the air purging valve) is designed for self-sealing contact with the valve and should be mounted first.

The valve cap protects the air valve by preventing airborne impurities from entering it and must therefore always be fitted, i.e. first tightened then backed off 2 turns, in order for the valve to operate correctly.

As the body gradually fills with water, the float will rise and the valve will close. As the air is accumulated in the valve body, the float will move down and the valve will open, thus allowing the air to flow out.
Should the air purging valve become fouled and begin to leak, remove it from the non-return valve (the non-return valve shall remain mounted on the QLAZ-04-1 nipple). Then screw the upper and lower valve body halves apart and clean them.
The valve seat will not be damaged by high water temperature or by anti-freeze additive contained in the water.

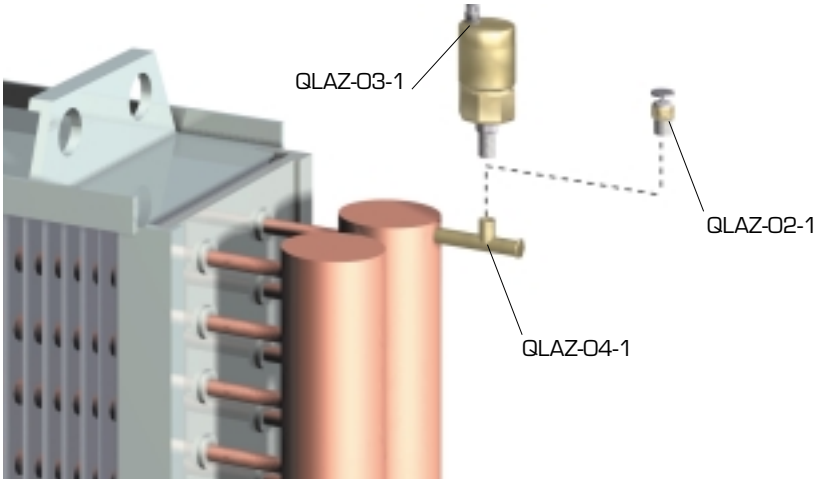
Installation
The valve is connected to the air purging nipple of the coil using the QLAZ-04-1 nipple which also can be combined with an anti-freeze thermostat.



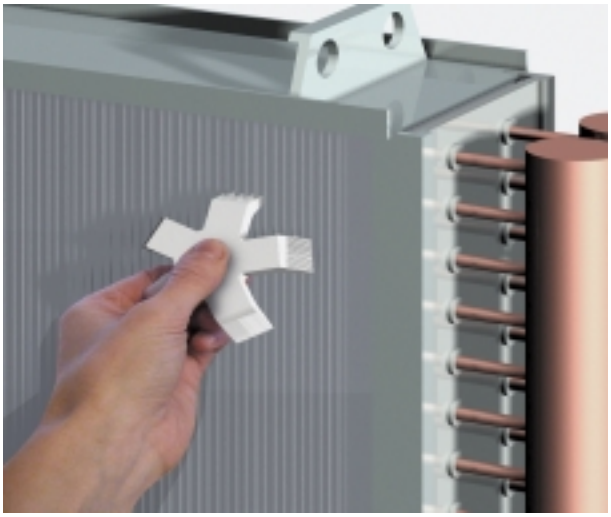
Nipple QLAZ-04-1

For connecting the anti-freeze thermostat and the QLAZ-03-1 air purging valve or drain valve to the coil.
The nipple is used for connecting the QLAZ-02-1 or QLAZ-03-1 air purging valve, anti-freeze thermostat or a drain valve to the coil.

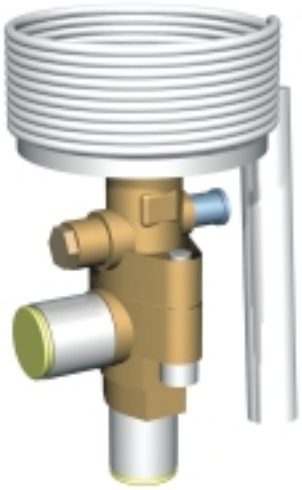
Installation
See under "Installation" for QLAZ-03-1.



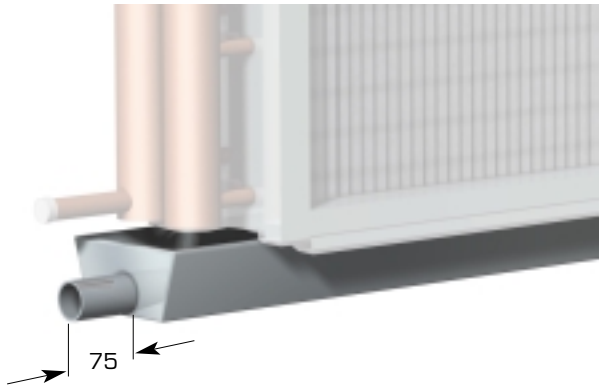
QLAZ-20, -30, -32



Fin aligning comb QLAZ-20
Delivered in quantities of 10 per carton.

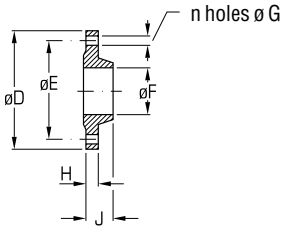


Expansion valve QLAZ-32



Side drain QLAZ-30
For cooling coils with built-in drain tray (QLC-, QLE- and QLF).

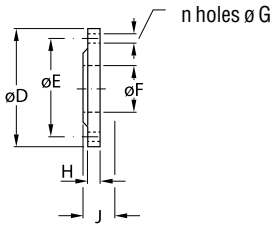
QLAZ-11, -15, -41, -42, -43, 44



Welding flange, steel QLAZ-11-bb

For connection on the water or steam side.

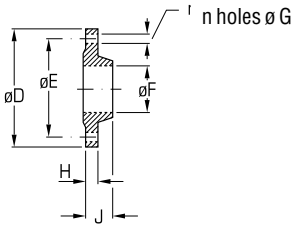
Size: See table **(bb)**



Threaded flange, bronze QLAZ-42-bb

For connection on the water or steam side.

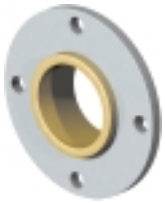
Size: See table **(bb)**

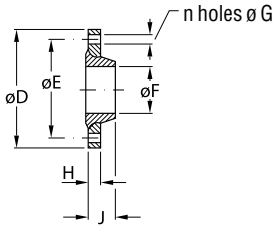


Threaded flange, steel QLAZ-15-bb

For connection on the water or steam side.

Size: See table **(bb)**

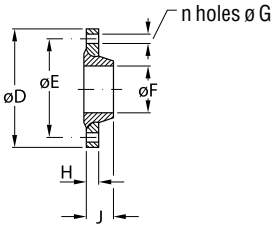




Threaded flange, bronze/steel QLAZ-43-bb

For connection on the water or steam side.

Size: See table **(bb)**



Brazing flange, bronze/steel QLAZ-41-bb

For connection on the water, steam or condensate side.

Size: See table **(bb)**

Flange gasket QLAZ-44-bb

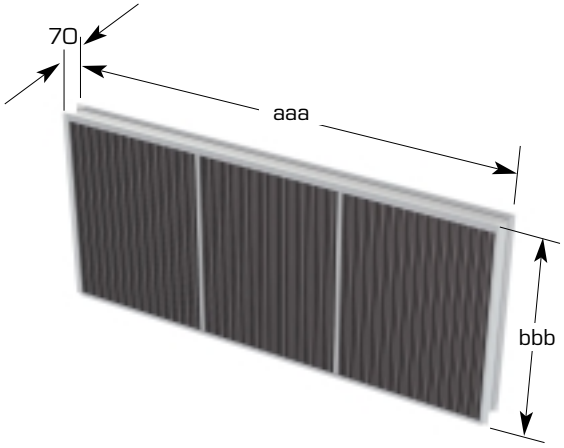
For connection between flanges.

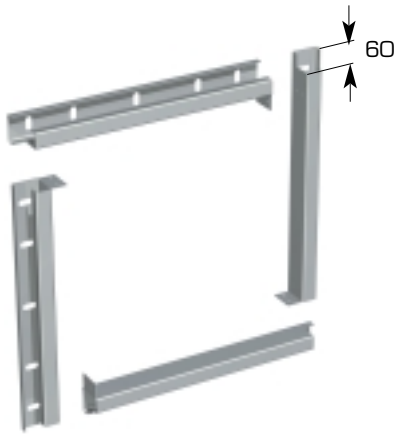
Size **(bb)**
25, 32, 50, 80

Size, code suffix bb	D	E	G	n	QLAZ-11				QLAZ-15				QLAZ-41				QLAZ-42				QLAZ-43	
					F	H	J	Weight kg	F	H	J	Weight kg	F	H	J	Weight kg	F	H	J	Weight kg	F	Weight kg
25	115	85	14	4	28,5	16	38	1,1	1"	16	24	1,1	28,3	17	-	1,0	1"	16	21	1,3	1"	1,0
32	140	100	18	4	37,2	16	40	1,7	1 1/4"	16	26	1,6	41,6	17	-	1,4	1 1/4"	16	21	20	1 1/4"	1,4
50	165	125	18	4	54,5	18	45	2,5	2"	18	28	2,5	54,3	17	-	2,0	2"	18	23	3,0	2"	2,0
80	200	160	18	8	82,5	20	50	3,7	3"	20	34	4,1	89,3	19	-	2,9	3"	20	26	4,3	3"	2,9

The QLAZ-11 is designed in accordance with SMS 2035 (DIN 2635) and QLAZ-15 in accordance with SMS 348 (DIN 2566). QLAZ-41, QLAZ-42 and QLAZ-43 are designed in accordance with SMS 2033 (DIN 2633) and SMS 2035 (DIN 2635).

QLAZ-25, -28





Droplet eliminator QLAZ-25-aaa-bbb-c

Supplied mounted on coil ordered at the same time if not otherwise specified.
Note the increase in overall depth.
See dimensional sketch.
Gives rise to approx. 15 Pa higher air pressure drop at 3 m/s.
The frame of the droplet eliminator is made of stainless steel.

Width, cm **(aaa)**

Height, cm **(bbb)**

Material in frame **(c)**
1 = galvanized sheet steel
2 = stainless steel, 304L
3 = stainless steel, 316L

Example for ordering:

Coil: QLCB-100-080-03-20-04-1-A

Droplet eliminator: QLAZ-25-100-080-1

Flange Adapter QLAZ-28-bbb-ccc-d

For transition from flange to PG slip-clamp joint or vice versa, the flange is drilled to match hole pitch RFHF/RVGL.
Delivered in four-piece kit form but is simple to install with screws supplied.

Width, cm **(bbb)**

Height, cm **(ccc)**

Material in coil casing **(d)**
1 = galvanized sheet steel
2 = stainless steel, 304L
3 = stainless steel, 316L

Example for ordering:

Coil: QLHF-100-080-03-20-04-1-A

Adapter: QLAZ-28-100-080-1

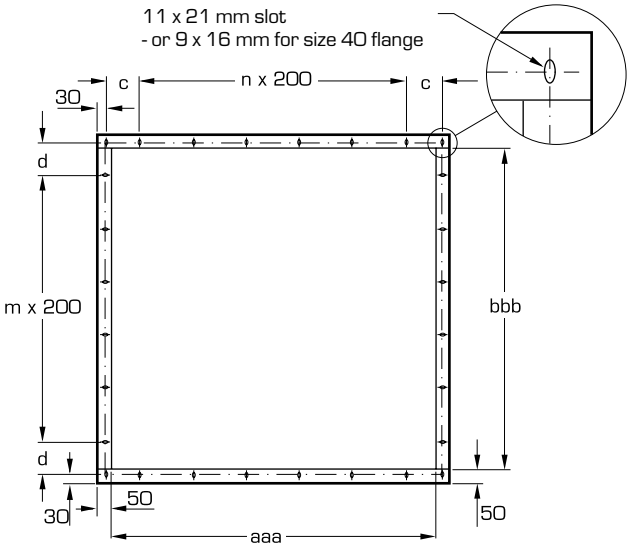
Coil frame – Hole Pitches

Hole Pitch Table

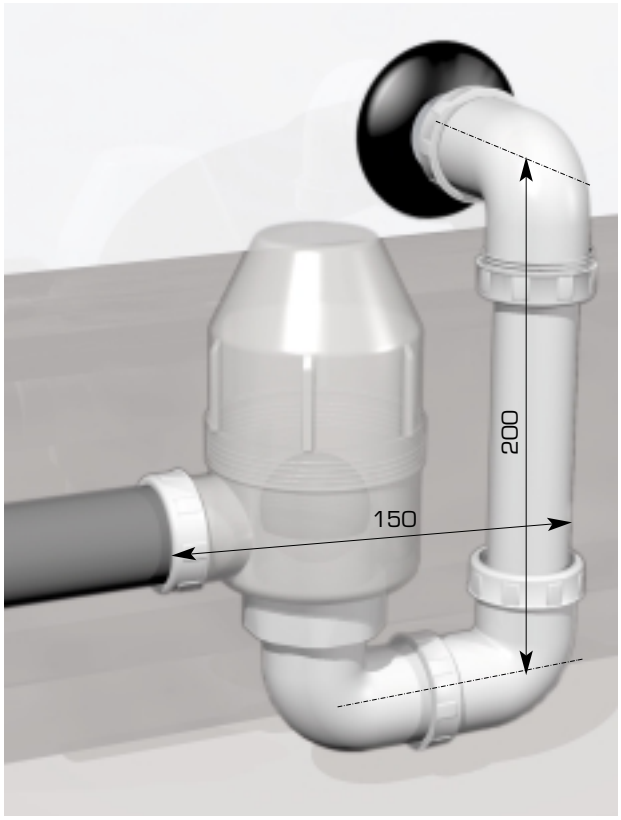
Code aaa cm	n	c	Code bbb cm	m	d
020	–	120	020	–	120
025	–	145	025	–	145
030	–	170	030	–	170
035	–	195	035	–	195
040	1	120	040	1	120
045	1	145	045	1	145
050	1	170	050	1	170
055	1	195	055	1	195
060	2	120	060	2	120
065	2	145	065	2	145
070	2	170	070	2	170
075	2	195	075	2	195
080	3	120	080	3	120
085	3	145	085	3	145
090	3	170	090	3	170
095	3	195	095	3	195
100	4	120	100	4	120

Code aaa cm	n	c	Code bbb cm	m	d
105	4	145	105	4	105
110	4	170	110	4	170
115	4	195	115	4	195
120	5	120	120	5	120
125	5	145	125	5	145
130	5	170	130	5	170
135	5	195	135	5	195
140	6	120	140	6	120
145	6	145	145	6	145
150	6	170	150	6	170
155	6	195	155	6	195
160	7	120	160	7	120
165	7	145	165	7	145
170	7	170	170	7	170
175	7	195	175	7	195
180	8	120	180	8	120
185	8	145	185	8	145

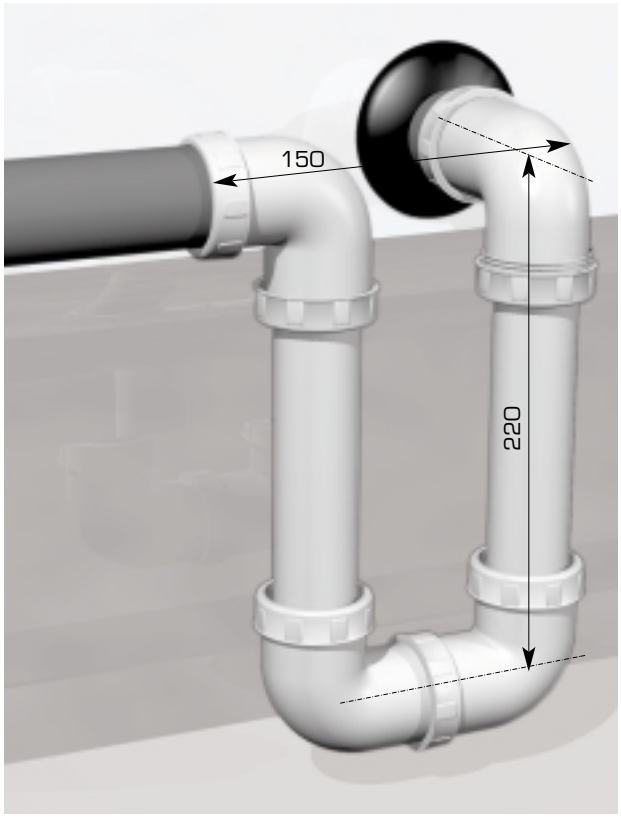
Code aaa cm	n	c	Code bbb cm	m	d
190	8	170	190	8	170
195	8	195	195	8	195
200	9	120	200	9	120
205	9	145	205	9	145
210	9	170	210	9	170
215	9	195	215	9	195
220	10	120	220	10	120
225	10	145	225	10	145
230	10	170	230	10	170
235	10	195	235	10	195
240	11	120	240	11	120
250	11	170			
260	12	120			
270	12	170			
280	13	120			
290	13	170			
300	14	120			



QLAZ-26, -27

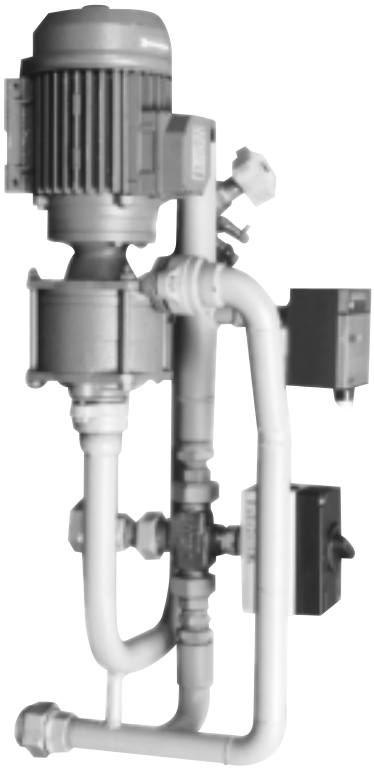


Water trap, for negative pressure applications
QLAZ-26
Designed to fit the drain tray of duct-mounted coils, threaded connection DN 32.



Water trap, for positive pressure applications
QLAZ-27
Designed to fit the drain tray of duct-mounted coils, threaded connection DN 32.
Designed to withstand pressure up to approx. 1500 Pa.

ECO-DRIVE® Heat Recovery Shunt Unit



ECO-Drive is a heat recovery shunting unit specially designed for the ECOTERM® Heat recovery system.

The shunting unit is located directly on a heat recovery coil belonging to the system.

ECO-Drive
– Is available in 9 sizes (up to 4.0 l/s)
– Is available for installation on both supply air and extract air coils
– Is available for all depths of coil in the ECOTERM® system
– Is simple to install
– Offers highly reliable operation.

ECO-DRIVE® Heat Recovery Shunt Unit

Description

The ECO-drive consists of an arrangement of steel pipes of pressure-vessel durability fitted with female-threaded pipe fittings for connection to the male-threaded pipe connections of the coil and for connection to the piping system built at the building site.
The ECO-drive is designed for direct connection to the type QL(T;F) Coil for energy recovery.
The pipes of the shunt are anti-corrosion painted. The pipes are not insulated; if necessary, they can be insulated at the site. ECO-drive is used when the supply air and the exhaust air sides each have only one (1) coil.
A circulation pump, three-way valve with motorized actuator and an anti-frosting controller are also included in the ECO-drive.
The circulation pump is designed to operate at high pressure. This makes it well suited to circulate any glycol solution available on the market, such as propylene glycol that requires high operating pressure.
The three-way valve with motorized actuator ensures maximum efficiency without frost forming on the exhaust air coil (anti-frosting control). An external controller (0 – 10 V), not included in the supply, must be used to regulate the temperature of the medium.
The controller with immersion sensor controls the motorized actuator by means of a 0–10 V signal.
The means for supplying 24 V power to the controller is not included in the supply.
Since every ECOTERM system is unique to suit the relevant brine flow, an adjustment valve with measurement nipples for precise adjustment is included for exact on-site adjustment within the flow range selected.

Delivery Version

Circulation pump, pipes and valves are delivered in assembled condition.

Anti-frosting controller and motorized actuator are delivered unmounted.

Design Data

Max. permissible operating pressure:	0,6 MPa
Test pressure:	0,8 MPa
Max. permissible operating temperature:	
Ambient temperature, Air:	40°C
Brine:	90°C
Max. permissible glycol content:	40%
Pump motor:	3-fas 220/380 V, 50 Hz
Degree of protection, pump motor:	IP 54

Product Code

ECO-Drive **QL(T,F)Z-aa-bb-cc-d**

For mounting on
Supply air coil = **(T)**
Extract air coil = **(F)**

Flow range, brine **(aa)**
See "Sizing"
01 = from 0,3 l/s
02 = from 0,45 l/s
03 = from 0,65 l/s
04 = from 0,85 l/s
05 = from 1,1 l/s
06 = from 1,45 l/s
07 = from 1,95 l/s
08 = from 2,3 l/s
09 = from 3,1 l/s

Number of tube rows in coil y **(bb)**
04, 06, 08, 10 or 12

Coil liquid connections, size **(cc)**
25, 32 or 50

Conn. Side on coil **(d)**
1 = Right-hand
2 = Left-hand

ECO-DRIVE® Heat Recovery Shunt Unit

Sizing

In order to choose the appropriate size of ECO-Drive unit, one should have access to engineering aids for sizing heat recovery coils.

Sizing should be carried out using the Coils selection program, which computes the necessary brine flow and the pressure drop of the brine across the coils.

It is also necessary to know the pressure drop in the pipe system that interconnects the supply and exhaust air coils.

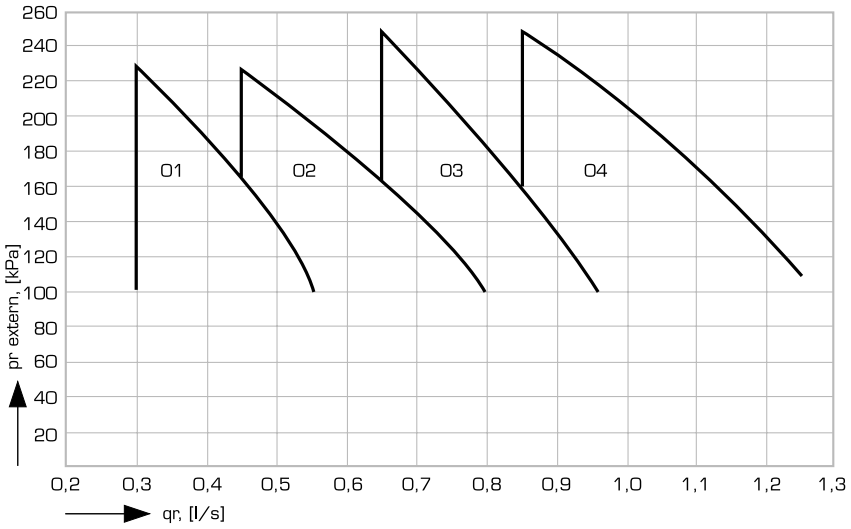
With knowledge of the brine flow required and the total pressure rise in the pipe system, the charts below can be used to select the appropriate ECO-Drive unit. The figures in the charts have been computed for brine (30% ethylene glycol).

Any excess pressure must then be reduced to obtain the exact brine flow.

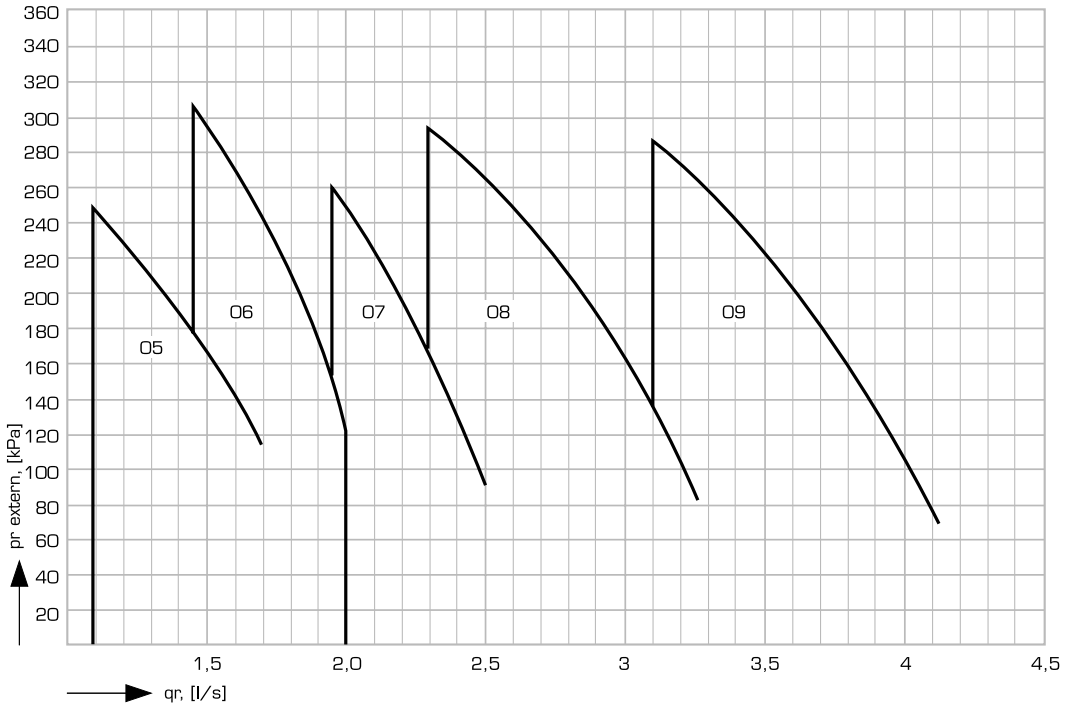
Symbols

qr	= Brine flow l/s required	l/s
Δp_{extern}	= Available brine pressure for coil and pipe system	kPa

The digits in the chart refer to code suffix aa



The digits in the chart refer to code suffix aa



ECO-DRIVE® Heat Recovery Shunt Unit

Anti-frost Control

Whenever the outdoor temperature is far below zero, the brine will also become extremely cold and frost is likely to form on the extract air coil if the extract air is moist.

Frost on the coil increases the air pressure drop, decreases the airflow and this has an adverse effect on the indoor climate. To prevent this from occurring, the system must be controlled to prevent frosting by means of the controller supplied, which responds to abnormally low brine temperature.

The controller has stepless limit temperature settings. The recommended setting can be obtained in connection with sizing the units in Coils selection program.

In general, the recommended setting for comfort ventilation is usually within the -3° to -5°C range.

The control principle is otherwise similar to temperature control; by means of by-pass regulation.

Temperature Control

The three-way valve is used to regulate system output by bypassing the brine flow.
This means that instead of taking maximum available output from the system, the excess output is by-passed away via the extract air coil whenever a lower supply air temperature is desirable.
The control principle provides a high control accuracy to obtain the desired supply air temperature. A controller (0 – 10V) that reads the supply temperature is required for this type of control.

Reheater

Due to anti-frosting control at low outdoor temperatures, the reheater should be sized to heat the air from –5°C to the supply air temperature desired.x–5°C

Size Code suffix aa	Weight, kg	Volume, l
01	20	2,6
02	20	2,6
03	23	2,6
04	23	2,6
05	26	4,1
06	42	4,1
07	45	7,5
08	62	7,5
09	63	7,5

Pump Data

Size Code suffix aa	at 3 x 400 V Rated output kW	 Rated current A
01, 02	0,55	1,7
03, 04, 05	0,75	1,9
06, 07	1,1	2,7
08, 09	1,5	3,5

Weights and Volumes
Other Particulars

The system will have to be equipped with an expansion vessel and safety valve if the brine circulates in a closed pipe system and both the supply air and the extract air temperatures cause brine volume fluctuations.
A good rule of thumb for comfort ventilation is to size the expansion vessel for a permissible expansion equal to 4% of the entire volume of the system.
For brine systems with large volumes, it is advisable to equip the system with air absorbers with automatic air purging, which will prevent any possible risk of microbubbles forming in the brine and impairing the efficiency.
The system must be pressurized whenever any type of air purging is carried out.

Bracing

Owing to the substantial deadweight of the shunting unit, the unit must be secured in position by stays secured to the ceiling or the air handling unit so that it won't burden the coil headers and damage the coil, which could give rise to water damage. See the Weights and Volumes Table.

Project Design Example

A variety of components are needed to put together a complete ECOTERM system. In addition to the ECO-Drive unit itself, the system should also include the components below. This example is applicable to a simple ECOTERM system with one supply air coil and one extract air coil.
The items below should be regarded as a recommendation/checklist.

Items not included in the ECO-Drive supply

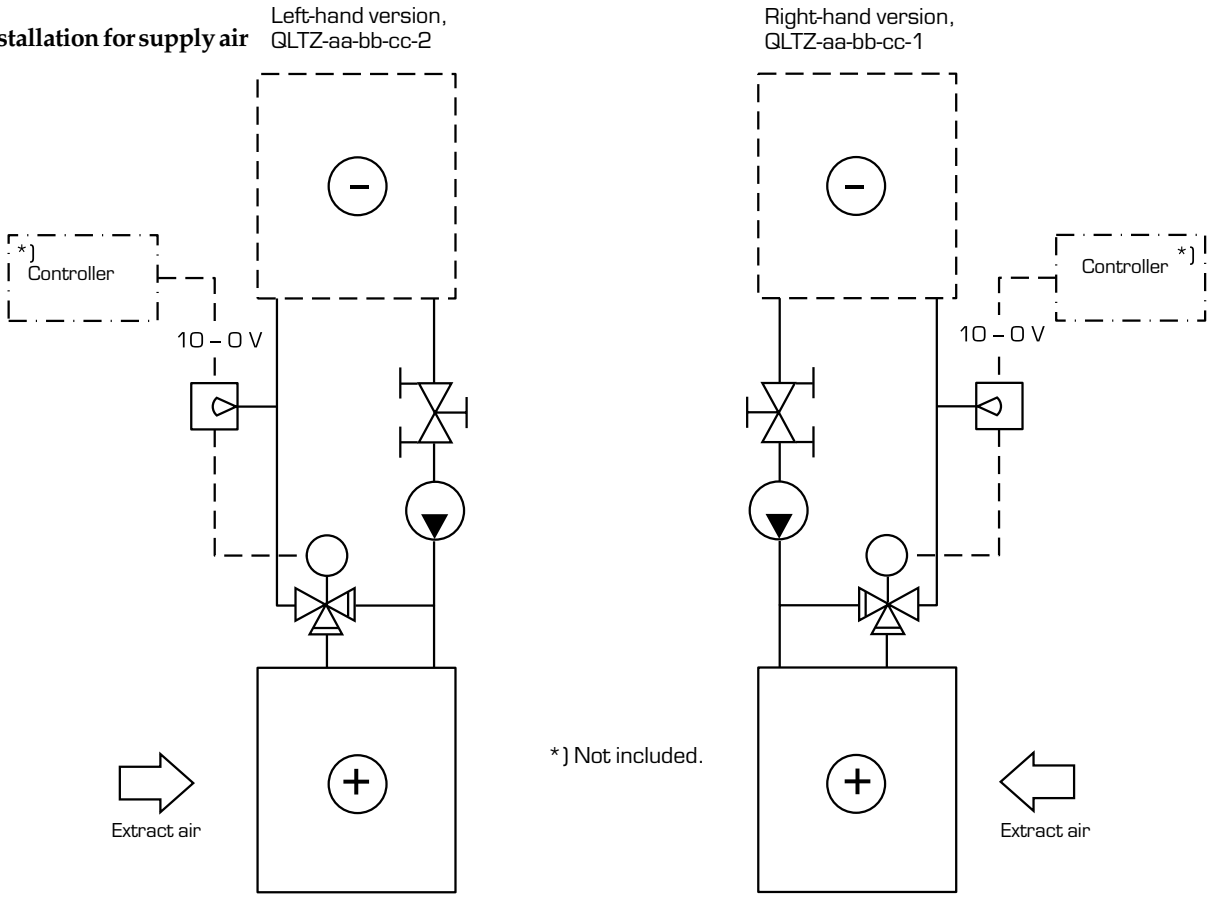
Qty.	Component	Contractor
Nec.	Pipework, flow circuit; size *)	Pipework
2	Shut-off valves, service; size *)	Pipework
2	Thermometers	Pipework
1	Bleed-off valve; nom. pipe size 15	Pipework
1	Closed expansion vessel; size *)..1	Pipework
1	Air valve	Pipework
1	Safety valve	Pipework
1	Manometer	Pipework
Nec.	Glycol ..1	Pipework
1	Cistern	Pipework
1	Hand pump for filling	Pipework
1	Non-return valve; nom. pipe size 15	Pipework
1	Shut-off valve; nom. pipe size 15	Pipework
1	Controller, air	Controls
1	Temp. sensor, air	Controls
1	Power supply, 24 V AC	Controls

*) Obtainable from Coils selection program.

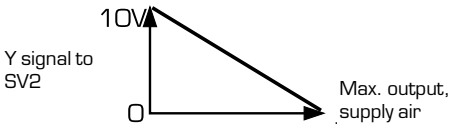
ECO-DRIVE® Heat Recovery Shunt Unit

Principal Diagram

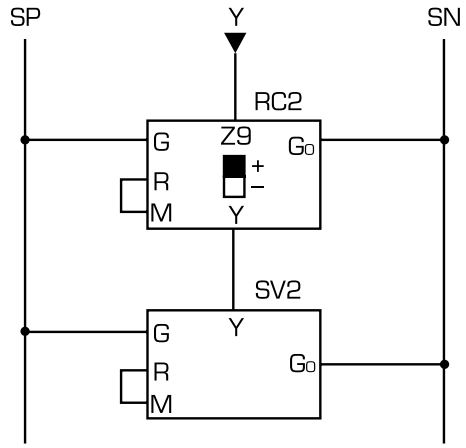
Installation for supply air



Controller operation, Installation for supply air



Wiring Diagram

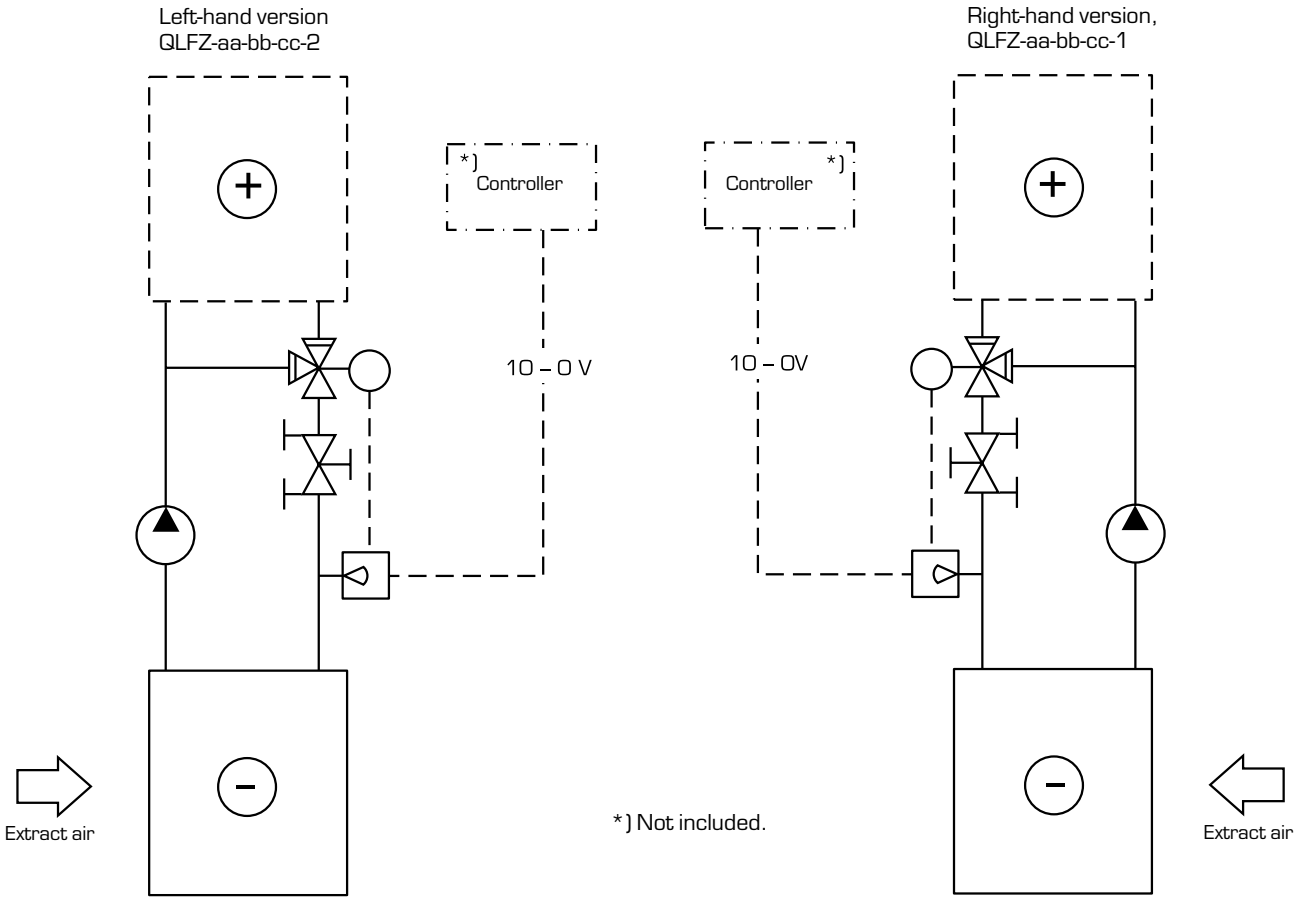


RC2	RCE61.11 Min. limiter	
SV2	SQS Valve actuator	
Y	Control signal from temperature controller	
G, G0	Power supply, 24 V ~	
	G	System potential (SP)
	G0	System zero (SN)

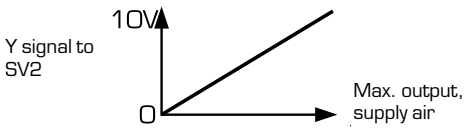
ECO-DRIVE® Heat Recovery Shunt Unit

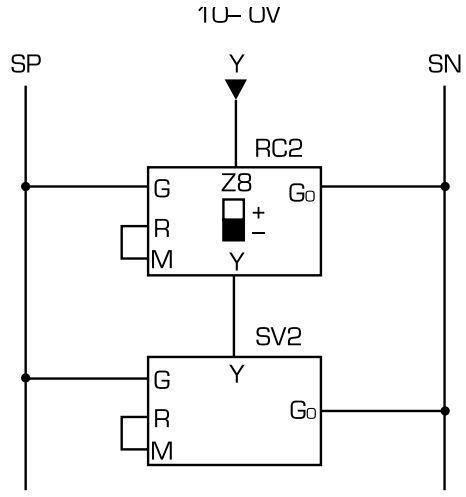
Principal Diagram

Installation for extract air



Controller operation, Installation for extract air





Wiring Diagram

RC2	RCE61.11 Min. limiter	
SV2	SQS Valve actuator	
Y	Control signal from temperature controller	
G, G0	Power supply, 24 V ~	
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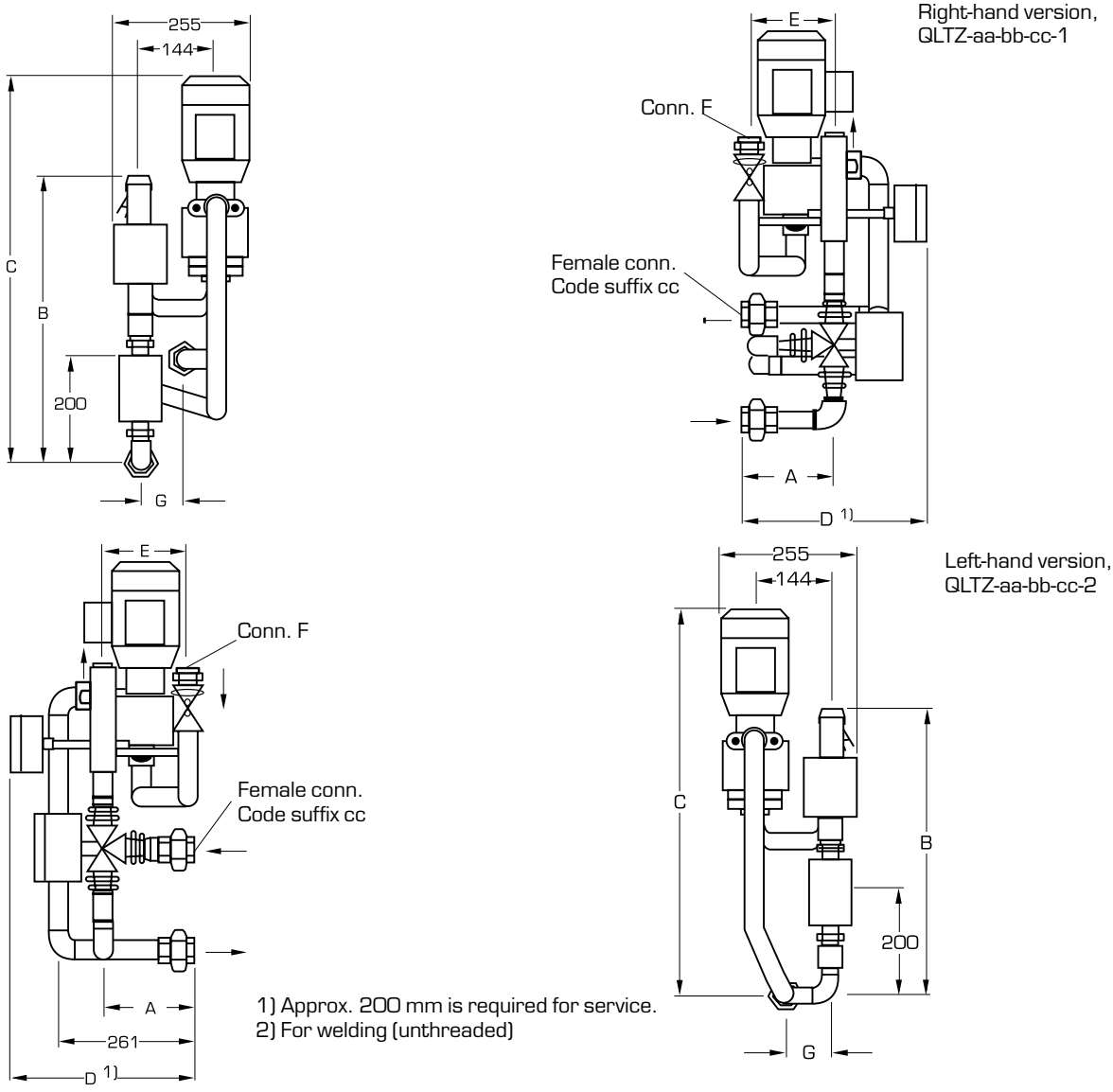
	G0	System zero (SN)

ECO-DRIVE® Heat Recovery Shunt Unit

Principal Diagram

Installation for supply air



1) Approx. 200 mm is required for service.
2) For welding (unthreaded)

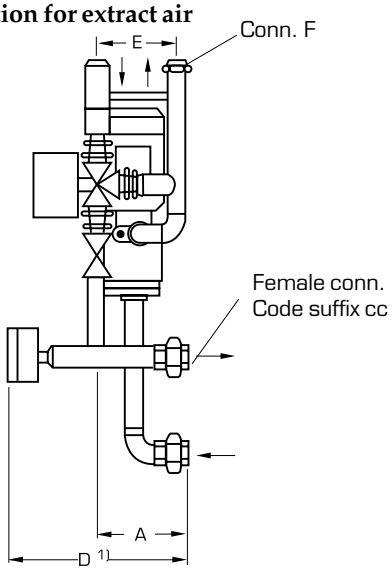
Code suffix aa	A	B	C	D	E	F male
01	175	550	800	360	160	32
02	175	550	800	360	160	32
03	175	550	800	360	160	32
04	175	550	800	360	160	32
05	175	550	800	360	160	40
06	175	550	760	360	160	40
07	215	650	970	400	200	65 [2]
08	215	650	970	400	200	65 [2]
09	215	650	970	400	200	65 [2]

Code suffix bb	G
04	86
06	144
08	205
10	263
12	321

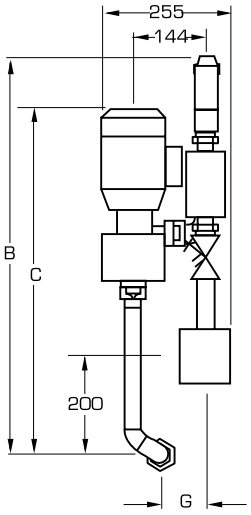
ECO-DRIVE® Heat Recovery Shunt Unit

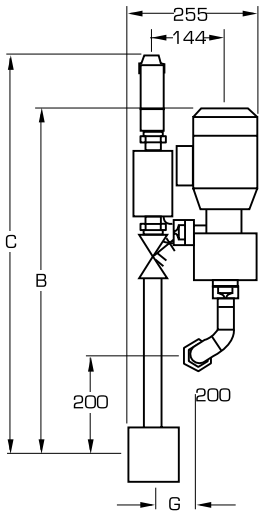
Principal Diagram

Installation for extract air

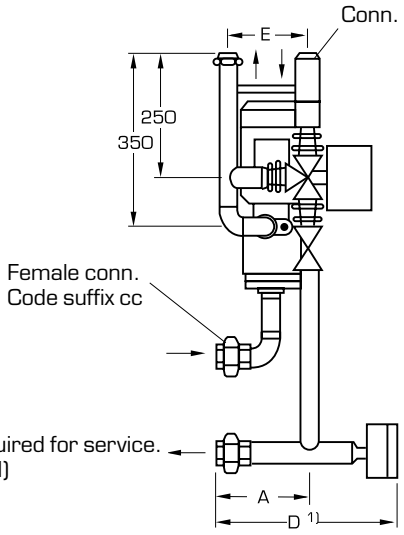


Right-hand version
QLFZ-aa-bb-cc-1





Left-hand version,
QLFZ-aa-bb-cc-2



1) Approx. 200 mm is required for service.
2) For welding (unthreaded)

Code suffix aa	A	B	C	D	E	F utv.
01	175	800	710	360	160	32
02	175	800	710	360	160	32
03	175	800	710	360	160	32
04	175	800	710	360	160	32
05	175	800	710	360	160	40
06	175	800	670	360	160	40
07	215	900	880	400	200	65 [2]
08	215	900	880	400	200	65 [2]
09	215	900	880	400	200	65 [2]

Code suffix bb	G
04	86
06	144
08	205
10	263
12	321

Notes

Ventilation Coils for Use in Air Handling Unit Casings

Ventilation Coils for Use in Air Handling Unit Casings

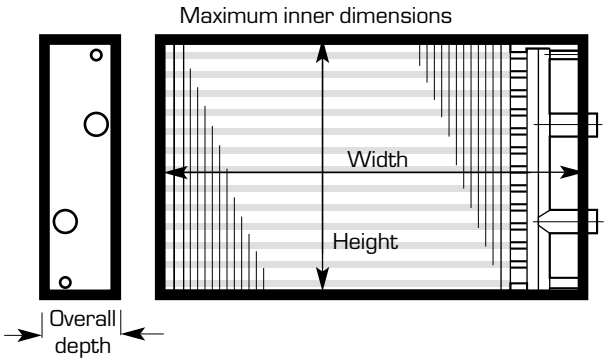


Fig. 1

Tips on how to Select Coils for Replacement in Air Handling Units

1. Measure
– The inner dimensions inside the relevant Air Handling Unit
– The maximum width and height
– The overall depth.

2. If your selection involves a cooling and extract air coil, check whether the drip tray belongs to the coil or is installed in the bottom of the Air Handling Unit.
Cooling or extract air coils can be ordered with or without drip tray; the drain is always horizontally mounted.

3. Size the new coil in the computerised calculation program called Coils.
If sizing data is lacking:
Count the number of tube rows and the fin pitch inside the coil you are replacing. Thanks to progress in coil design, the new coil having the same number of tube rows and fin pitch as the old one will in most cases provide better capacity.

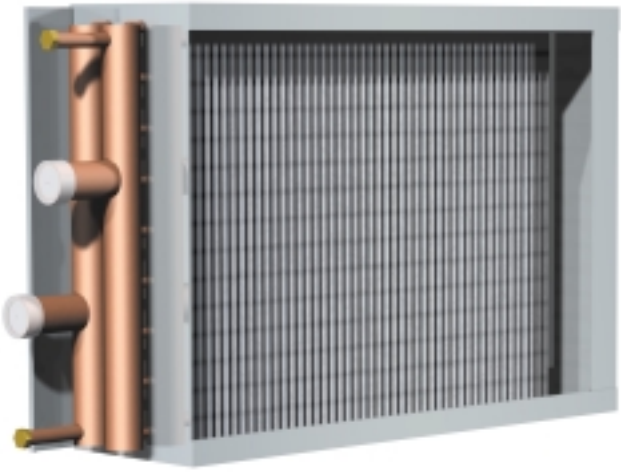
4. The calculation program also provides dimensional sketches. Check the sketch against the dimensions that you've measured. Note that the nominal pipe size of the coil's liquid connection branches affects the total width of the coil.

5. On installation, the locations of the liquid connection branches of the new coil will in most cases differ from those of the old coil; due to the make of coil and the year it was manufactured. Drill new holes in the relevant panel of the unit casing and cover the old holes. Flanges, if any, for the liquid side are always ordered in unmounted condition. Air Handling Unit coils are always produced with long connection branches and nipple enabling them to extend out through the Air Handling Unit casing.

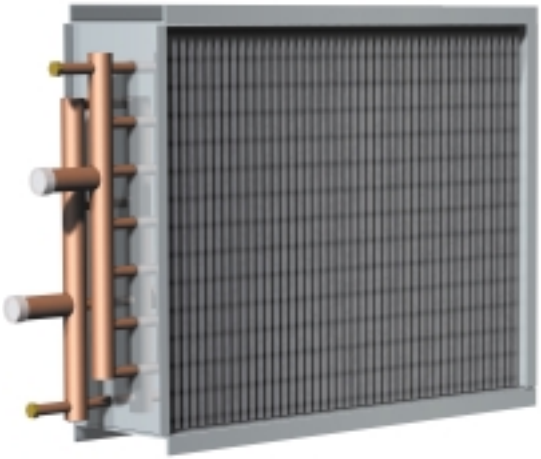
Width: Specified in centimetre increments from 20 cm to 385 cm.

Height: Specified in 3.33 cm increments from 20 cm to 240 cm.

Ventilation Coils for Hot Water



QLHM



QLHT

Design

Coils with smooth top, bottom and cover plates: **QLHM**
The standard size range is from 200 x 200 mm to 3500 x 2400 mm.
Larger sizes are available to special order.

Coil with simpler casing without cover plate: **QLHT**
The standard size range is from 200 x 200 mm to 1200 x 1000 mm

Normal air velocity: 3 – 4 m/s

Easy to size using our computerized product selection program called **Coils** that you'll find under the heading: Heating and Cooling Coils.

Features

– Conform to AMA Code QFC.1
– Designed for air flows up to 40 m^3/s
– Available in a variety of material combinations.
– Number of tube rows: from 1 to 12
– Fin pitches: from 1.8 to 6.0 mm
– Short delivery time.

Ventilation Coils for Hot Water

Design

The coils are produced in three parts: finned body, headers and casing.
The staggered tubes are assembled in the finned body in falling loops to enable the coil to be drained of liquid.
The headers are equipped with plugged nipples for venting and drainage. The plug is designed as a manual purging valve. At least one of the nipples can be fitted with a sensor for an anti-freeze thermostat. The liquid connections and nipples are long to enable them to extend out through the unit panel.
All the connections have male threads (BSP).
The connection restricts the liquid flow as follows:

DN 15	max. 0.7 l/sec.
DN 25	″ 1.6
DN 32	″ 2.8
DN 50	″ 7.0
DN 80	″ 14.0
DN 2x80	″ 28.0

The coil casing is available in two versions:
The QLHM that has smooth top, bottom plates and cover plates for headers and bends.
The QLHT that is a simpler casing without cover plate for the headers. The advantage of the QLHT is its shorter overall depth.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins.

The casing is made of hot galvanized sheet steel.

The standard headers are made of steel except those to DN 15 and DN 25 that are made of copper with brass connections.

Materials capable of withstanding aggressive environments are available.

Accessories

A variety of different accessories are available, See the separate section on accessories.

Sizing

Use our product selection program called Coils for sizing.
You'll find the coils under the heading: Heating and Cooling Coils. The product selection program also provides dimension sketches.

The program specifies the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material data, coil data and product codes.

Ventilation Coils for Hot Water

Installation

The coils are normally connected to obtain a counter-flow mode, see Fig 1. The coils are reversible and need not be ordered in a right-hand or left-hand version. The system must be adequately vented to provide correct performance

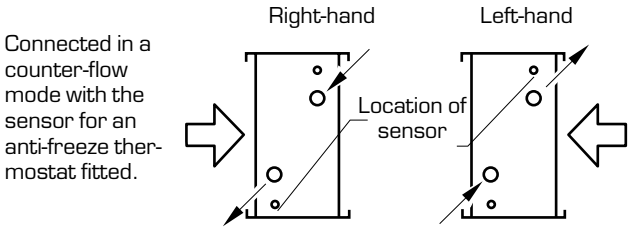


Fig. 1

Anti-freeze Protection

At least one of the nipples of the coil can be fitted with a sensor for an anti-freeze thermostat. See Fig. 2. If freezing is likely to occur in the coil after it has been drained of liquid, it should be blown with compressed air to ensure that all water is gone.
More information can be obtained from our product selection program called **Coils** or downloaded from our website on the Internet.

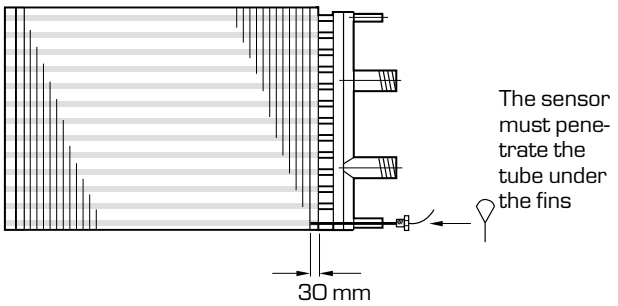


Fig. 2

Maintenance

Operating and maintenance instructions can be obtained from our product selection program called Coils or from our website on the Internet.

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called Coils or from our website on the Internet.

Technical Data

Sizes:	QLHM från 200 x 200 mm till 3500 x 2400 mm
Sizes:	QLHT från 200 x 200 mm till 1200 X 1000 mm
Number of tube rows:	1, 2, 3, 4, 6, 8, 10, 12
Fin pitch:	1,8, 2,0, 2,5, 3,0, 4,0, 5,0, 6,0 mm
Max. permissible liquid velocity:	1,5 m/s
Max. permissible air velocity:	5 m/sek

Design Data

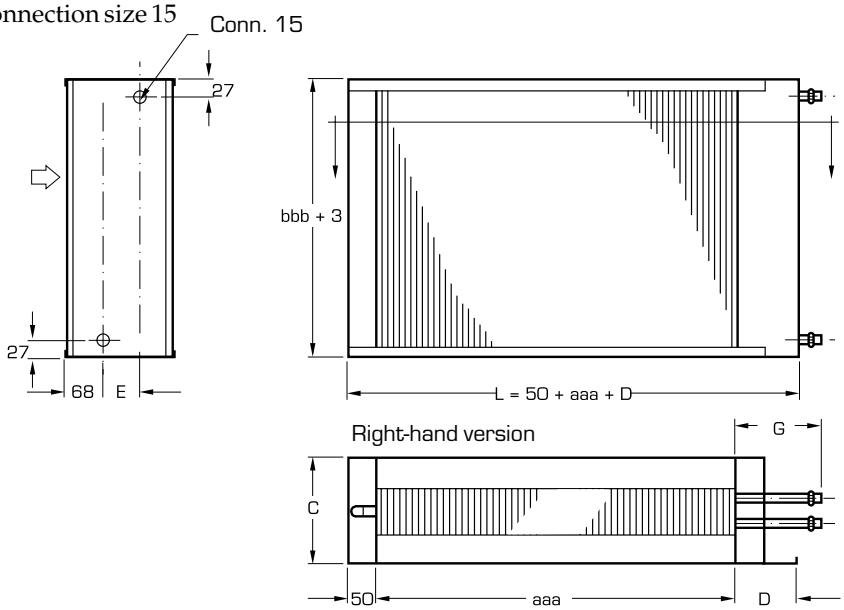
Max. permissible operating pressure: 1.6 MPa at a max. permissible operating temperature of 150 °C.

If your application calls for higher pressure, contact us.
All the coils are pressure tested and leakage tested with dry air under water.
The designed conforms to pipework standards in accordance with the Pressure Equipment Directive.

Ventilation Coils for Hot Water

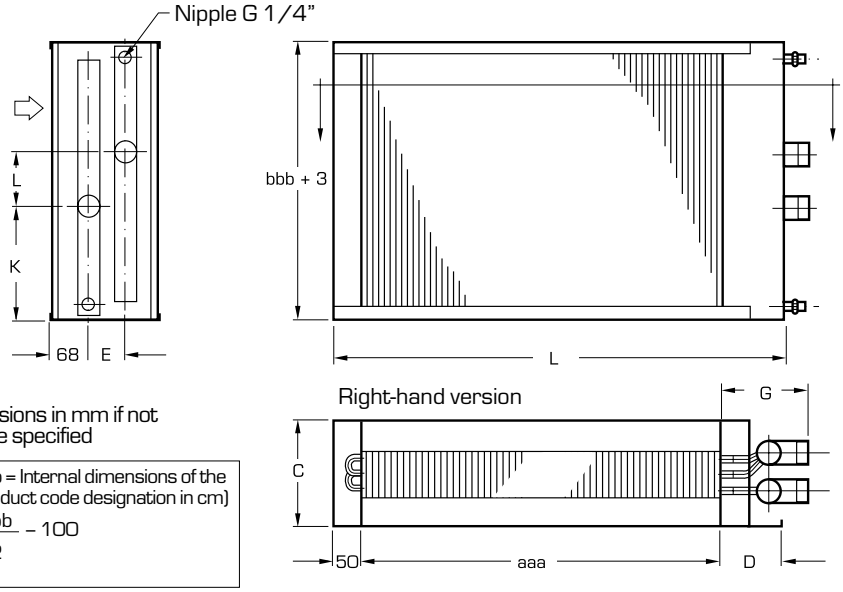
Dimensions, Coil with smooth Top, Bottom and Cover Plates – QLHM

Pipe connection size 15



Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe connection size 25, 32, 50, 80



All dimensions in mm if not otherwise specified

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

aaa cm	L
<040	120
≥040	200

Pipe conn.	D mm	G mm
15	50	245
25	100	240
32	100	246
50	150	275
80	150	295

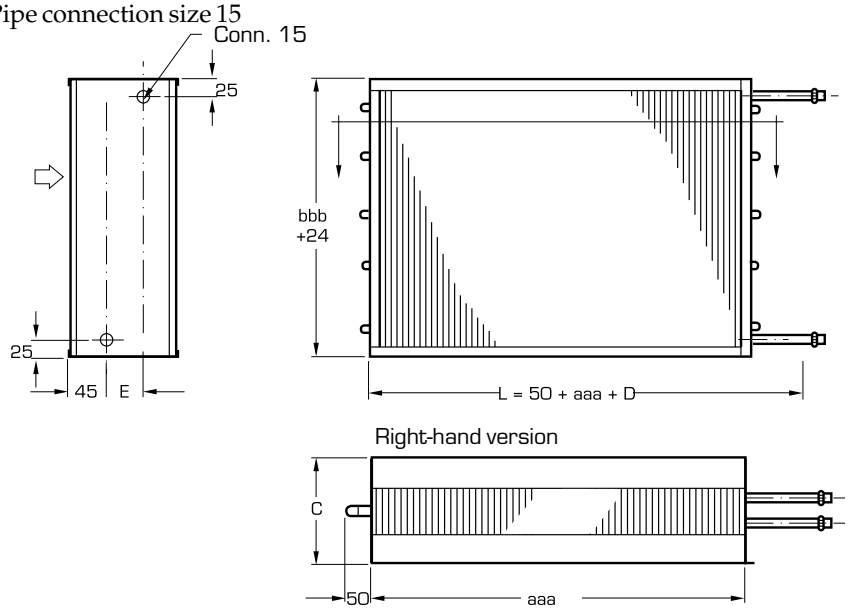
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	136	06	280
02	165	08	341
03	194	10	399
04	223	12	457

	E										
Number of tube rows (code suffix cc)	15	25	32	50	80	Number of tube rows (code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Hot Water

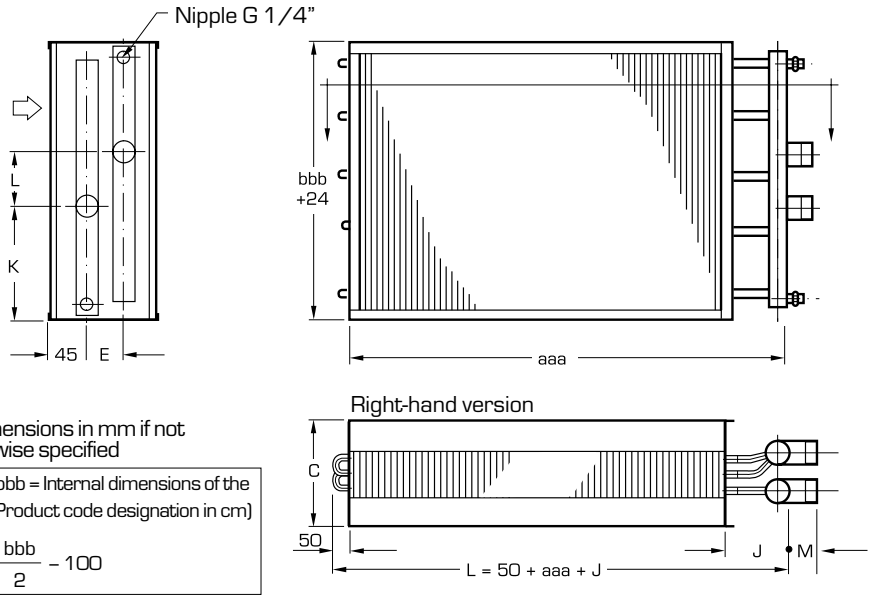
Dimensions, Coil with simpler Casing without Cover Plate – QLHT

Pipe connection size 15



Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe connection size 25, 32, 50, 80



bbb cm	L
<040	120
≥040	200

Pipe conn.	J mm	M mm
15	115	-
25	89	90
32	98	90
50	115	100
80	144	110

All dimensions in mm if not otherwise specified

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	-	06	221
02	125	08	295
03	-	10	353
04	154	12	411

	E										
Number of tube rows (code suffix cc)	15	25	32	50	80	Number of tube rows (code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Hot Water

Product Code

Air handling unit coils for hot water **QLH(M,T)-aaa-bbb-cc-dd-ee**

Casing with smooth top, bottom and cover plates **(M)**

Casing, simpler without cover plate **(T)**

Width, cm **(aaa)**
QLHM = 020-350
QLHT = 020-120
(Fin width excl. headers and bends)

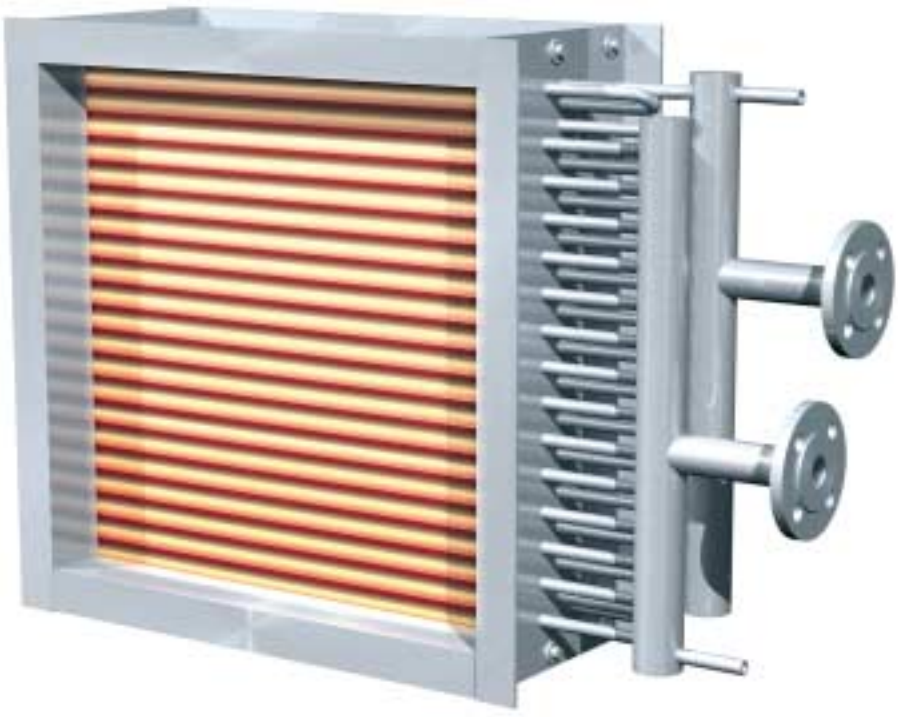
Height, cm **(bbb)**
QLHM = 020-240
QLHT = 020-100
(Fin height excl. plates)

Number of tube rows **(cc)**
01, 02, 03, 04,
06, 08, 10, 12

Fin pitch, mm **(dd)**
18 = 1,8 mm 40 = 4,0 mm
20 = 2,0 mm 50 = 5,0 mm
25 = 2,5 mm 60 = 6,0 mm
30 = 3,0 mm

Number of liquid passes **(ee)**
02-98

QDIH – Coil for Liquids, Titanium, for heating air



The QDIH coil is designed for aggressive water and sea water in ventilation units and coils installed in ducts.

Design

The coil casing is made of stainless or acid-proof steel. The parts of the coil that come in contact with liquid are made of titanium and the fins are available in the following materials:
- aluminium
- epoxy-coated aluminium
- copper
- electro-tinned copper.

The coil is equipped with welded flanges on the pipe connections and has stainless or acid-proof steel lifting lugs.
Plugged connections are provided for venting and drainage.
On request, 15 x 24 mm mounting holes can be drilled in the connection flanges of the casing.

The **QDIH** is designed for heating air. The coil is produced in sizes from 500 x 400 mm to 3500 x 2400 mm.

For an estimate and price quotation, contact Coiltech AB.

Facts

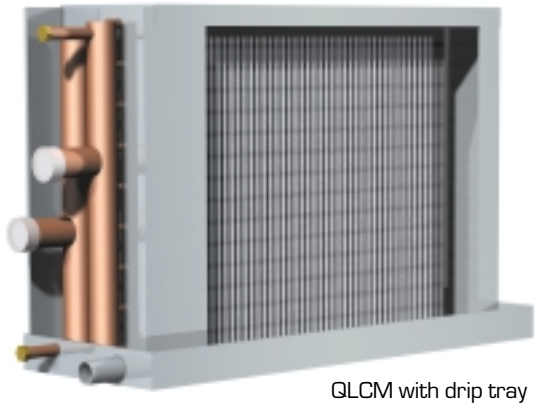
- Fin pitches: 1.8, 2.0, 2.5, 3.0 and 4.0 mm.
- Number of tubes deep: 1 to 12 tube rows.

Design data

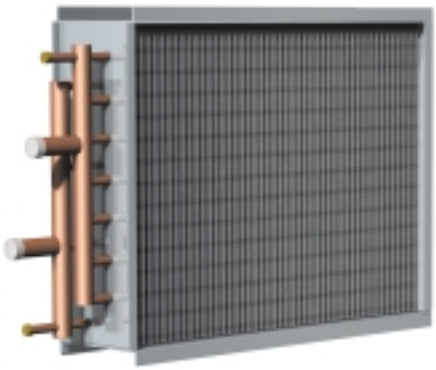
Max. operating pressure 1.6 MPa at max. operating temperature: 100 °C.
Pressure tested at 2.1 MPa.
Designed and manufactured in accordance with the Pressure Equipment Directive PED 97/23EC.

Notes

Ventilation Coils for Chilled Water



QLCM with drip tray



QLCT without drip tray

For cooling air with chilled water

Design

Coils with smooth top, bottom and cover plates: **QLCM**
The standard size range is from 200 x 200 mm to 3500 x 2400 mm.
Larger sizes are available to special order.

Coil with simpler casing without cover plate: **QLCT**
The standard size range is from 200 x 200 mm to 1200 x 1000 mm.
Larger sizes are available to special order.

Normal air velocity 2 – 3 m/s

Easy to size using our computerized product selection program called **Coils** that you'll find under the heading: Heating and Cooling Coils.

Features

– Conform to AMA Code QFC.21
– Designed for air flows up to 40 m^3/s
– Available in a variety of material combinations.
– Number of tube rows: from 1 to 12
– Fin pitches: from 2.0 to 6.0 mm
– Short delivery time.

Ventilation Coils for Chilled Water

Design

The coils are produced in three parts: finned body, headers and casing.

The staggered tubes are assembled in the finned body in falling loops to enable the coil to be drained of liquid.

The headers are equipped with plugged nipples for venting and drainage. The plug is designed as a manual purging valve. The liquid connections and nipples are long to enable them to extend out through the unit panel.

All the connections have male threads (BSP).
The connection restricts the liquid flow as follows:

DN 15	max. 0.7 l/sec.
DN 25	″ 1.6
DN 32	″ 2.8
DN 50	″ 7.0
DN 80	″ 14.0
DN 2x80	″ 28.0

The QLCM casing has smooth top, bottom plates and cover plates for the headers and bends. The QLCT is available with or without drain tray. The drain is 32 mm in diameter and is horizontally mounted.

The QLCT has a simpler casing without cover plate for the headers; the advantage is a shorter overall depth.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins. The casing is made of hot galvanized sheet steel and the drain tray, if specified, is made of stainless steel, 304L.

The standard headers are made of steel except those to DN 15 and DN 25 that are made of copper with brass connections.

Materials capable of withstanding aggressive environments are available. See the list of materials.

Accessories

A variety of different accessories are available. See the separate section on accessories

Sizing

Use our product selection program called **Coils** for sizing.
You'll find the coils under the heading: Heating and Cooling Coils. The product selection program also provides dimension sketches.

The program specifies the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
	Outlet humidity or	%
	Condensate	g/s
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. The coil should be connected to obtain a counter-flow mode, see Fig. 1. The coil can be ordered in the right-hand or left-hand version.
The system must be adequately vented to provide correct performance.
If freezing is likely to occur in the coil after it has been drained of liquid, it should be blown with compressed air to ensure that all water is gone.
More information can be obtained from our product selection program called Coils or downloaded from our website on the Internet.

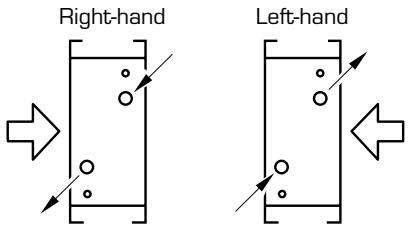


Fig. 1. Counter-flow connection

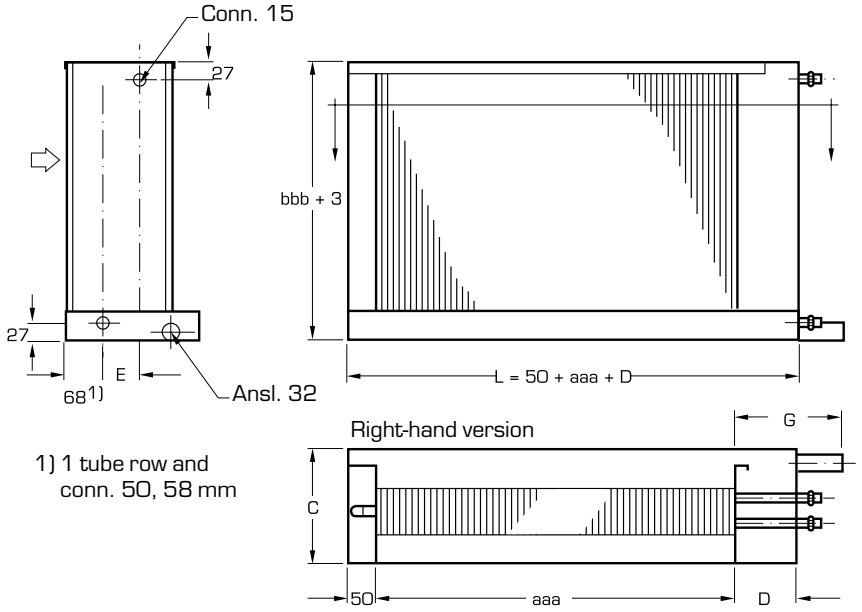
Maintenance

Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

Ventilation Coils for Chilled Water

Dimensions, Coil with smooth Top, Bottom, Cover Plates; with Drain Tray – QLCM

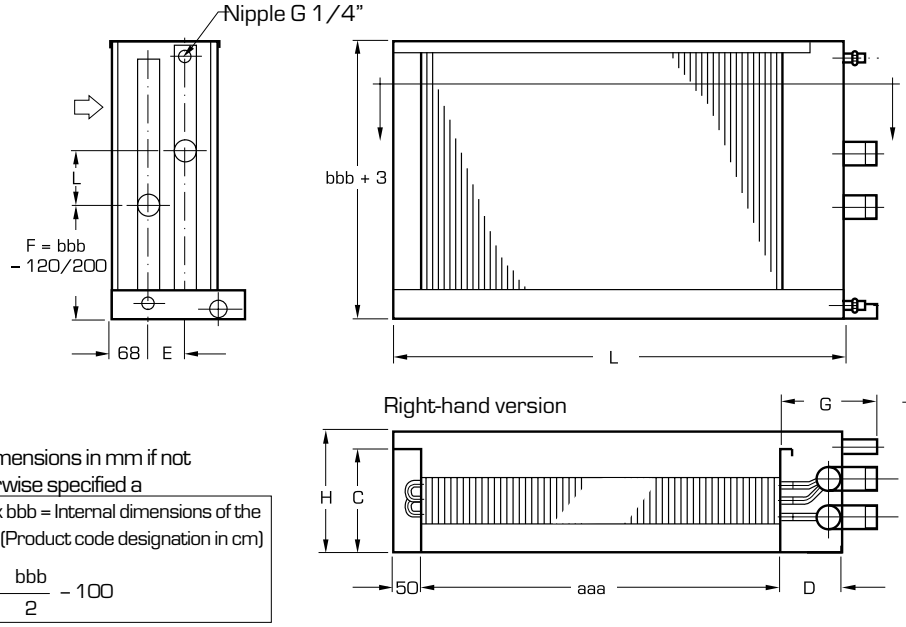
Pipe connection size 15



1) 1 tube row and conn. 50, 58 mm

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe connection size 25, 32, 50, 80



aaa cm	L
<040	120
≥040	200

Pipe connection	D mm	G mm
15	50	245
25	100	240
32	100	246
50	150	275
80	150	295

All dimensions in mm if not otherwise specified a

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Number of tube rows (code suffix cc)	C mm	H, mm Droplet eliminator without	with	Number of tube rows (code suffix cc)	C mm	H, mm Droplet eliminator- without	with
01	136	240	360	06	280	360	360
02	165	240	360	08	341	360	540
03	194	240	360	10	399	540	540
04	223	240	360	12	457	540	540

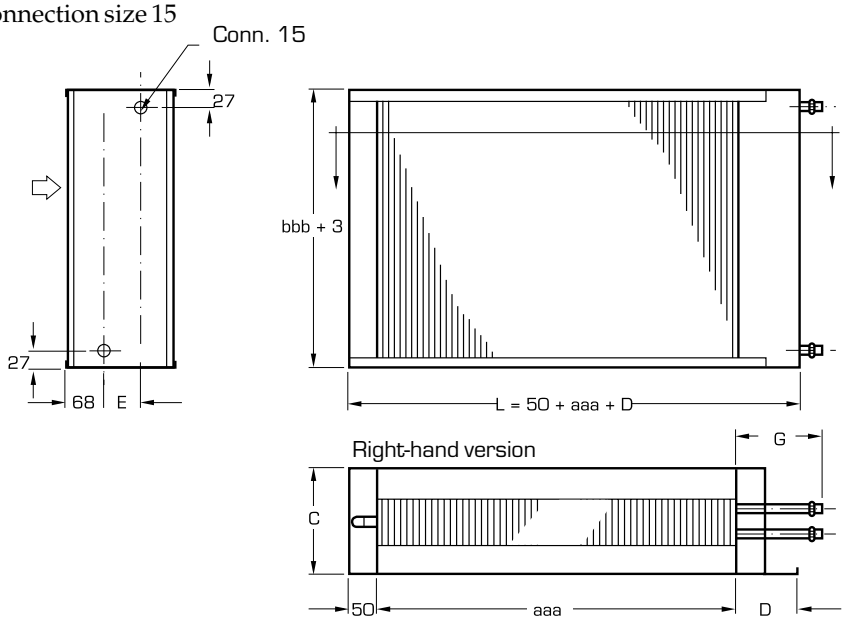
E

Number of tube rows (code suffix cc)	15	25	32	50	80	Number of tube rows (code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Chilled Water

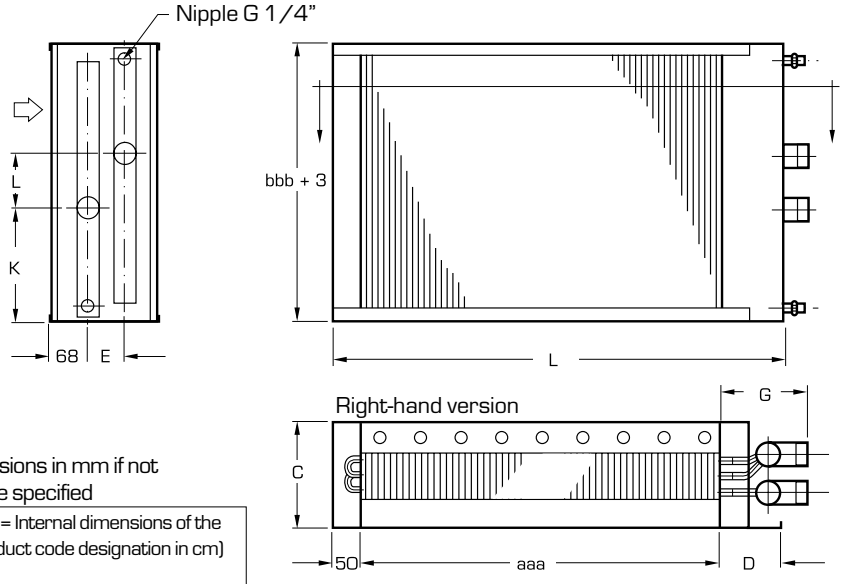
Dimensions, Coil with smooth Top, Bottom, Cover Plates; without Drain Tray – QLCM

Pipe connection size 15



Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe connection size 25, 32, 50, 80



aaa cm	L
<040	120
≥040	200

Pipe conn.	D mm	G mm
15	50	245
25	100	240
32	100	246
50	150	275
80	150	295

All dimensions in mm if not otherwise specified

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	136	06	280
02	165	08	341
03	194	10	399
04	223	12	457

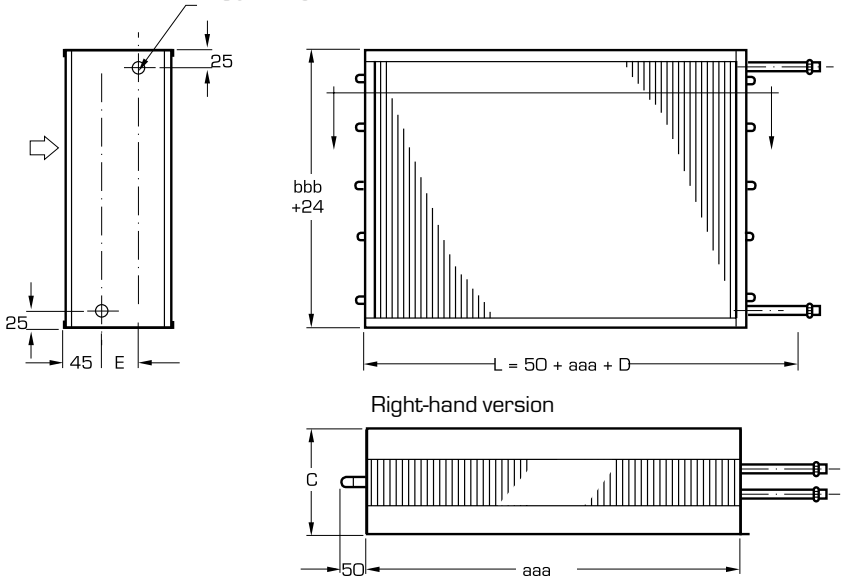
E

Number of tube rows (code suffix cc)	15	25	32	50	80	Number of tube rows (code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Chilled Water

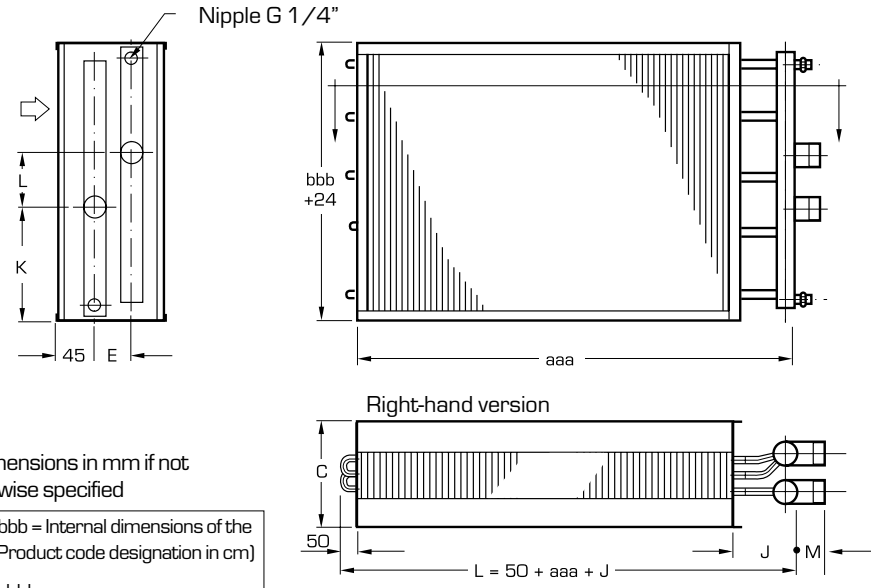
Dimensions, Coil with smooth Top, Bottom, Cover Plates; without Drain Tray – QLCT

Pipe connection size 15



Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe connection size 25, 32, 50, 80



bbb cm	L
<040	120
≥040	200

Pipe conn.	J mm	M mm
15	115	-
25	89	90
32	98	90
50	115	100
80	144	110

All dimensions in mm if not otherwise specified

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	-	06	221
02	125	08	295
03	-	10	353
04	154	12	411

	E										
Number of tube rows (code suffix cc)	15	25	32	50	80	Number of tube rows (code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Chilled Water

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data

Sizes:	QLCM from 200 x 200 mm to 3500 x 2400 mm.
Sizes:	QLCT from 200 x 200 mm to 1200 x 1000 mm.
Number of tube rows:	1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch:	2,0, 2,5, 3,0, 4,0, 5,0, 6,0 mm.
Max liquid velocity:	2,0 m/sek.
Max. permissible air velocity without droplet eliminators:	2,9 m/sek.
Max. permissible air velocity with droplet eliminators:	5,0 m/sek.

Design Data

- Max. permissible operating pressure:
  1.6 MPa at a max. permissible operating temperature of 100 °C or
- Max. permissible operating pressure:
  1.0 MPa at a max. permissible operating temperature of 150 °C.

If your application calls for higher pressure, contact us.
All the coils are pressure tested and leakage tested with dry air under water.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Product Code

Air handling unit coil for chilled water **QLC(M,T)-aaa-bbb-cc-dd-ee-f**

Casing with smooth top, bottom and cover plates **(M)**

Casing, simpler design without cover plate **(T)**

Width, cm **(aaa)**
QLCM = 020–350
QLCT = 020–120
(Fin width excl. headers and bends)

Height, cm **(bbb)**
QLCM = 020–240
QLCT = 020–100
(Fin height excl. plates)

Number of tube rows **(cc)**
01, 02, 03, 04,
06, 08, 10, 12

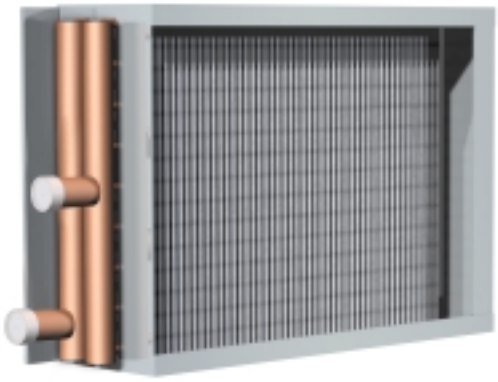
Fin pitch, mm **(dd)**
20 = 2,0 mm 40 = 4,0 mm
25 = 2,5 mm 50 = 5,0 mm
30 = 3,0 mm 60 = 6,0 mm

Number of liquid passes **(ee)**
02-98

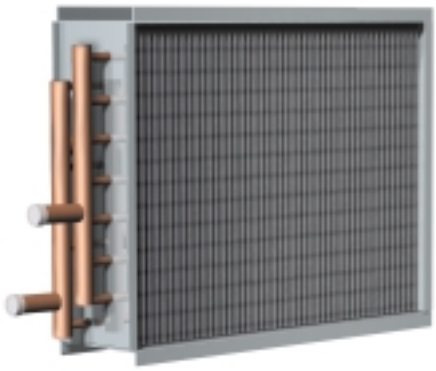
Connection side **(f)**
QLCM
1 Right-hand without tray, 2 Left-hand without tray
3 Right-hand with tray, 4 Left-hand with tray
5 Right-hand with tray and space for droplet eliminator
6 Left-hand with tray and space for droplet eliminator

QLCT
1 Right-hand without tray
2 Left-hand without tray

Ventilation Coils for Condensing Refrigerant



QLOM for heating air with condensing medium



QLOT for heating air with condensing medium

Design

Coil with smooth top,
bottom and cover plates: **QLOM**
Coil with casing of simpler
design without cover plate: **QLOT**
The standard size range is from 200 x 200 mm to 3500 x 2400 mm.
Larger sizes are available to special order.
Normal air velocity: 3 – 4 m/s.
Easy to size using our computerized product selection program called **Coils** that you'll find under the heading: Heating and Cooling Coils.

Features

– Conform to AMA Code QFC.
– Designed for air flows up to 40 m^3/s
– Available in a variety of material combinations.
– Number of tube rows: from 1 to 12
– Fin pitches: from 1.8 to 6.0 mm
– Available in several output stages
– Short delivery time.

Ventilation Coils for Condensing Refrigerant

Design

The coils are produced in three parts: finned body, headers and casing. Together with the pleated fins, the tubes are arranged staggered inside the coil to provide maximum output.
The coils can be supplied for one, two or several output stages depending on the height of the coil. The coils with two output stages are normally connected so that every other loop belongs to output stage 1 and the intervening loops belong to stage 2. (Interlace connection).
The coils with three or more output stages are normally split up vertically.
The coil casing is available in two versions:
The QLOM has smooth top, bottom and cover plates for the headers and bends.
The QLOT has a casing of simpler design without cover plate for the headers. The advantage of the QLOT is its shorter overall depth.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins. The casing is made of hot galvanized sheet steel.

The headers are made of copper.

Materials capable of withstanding aggressive environments are available, see the list of materials.

Accessories

A variety of different accessories are available, see the separate section on accessories.

Sizing

Use our product selection program called Coils for sizing.

The coils are found under the heading: Heating and Cooling Coils. The program also provides dimensional sketches.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
Medium side:	Return temperature	°C
	Medium flow	l/s
	Medium pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. The coil should be connected to obtain a counter-flow mode, see Fig. 1. The coil can be ordered in the right-hand or left-hand version.

More information can be obtained from our product selection program called Coils or from our website on the Internet.

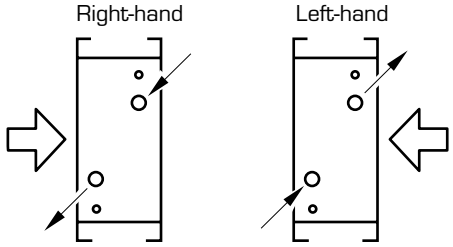


Fig. 1. Counter-flow connection

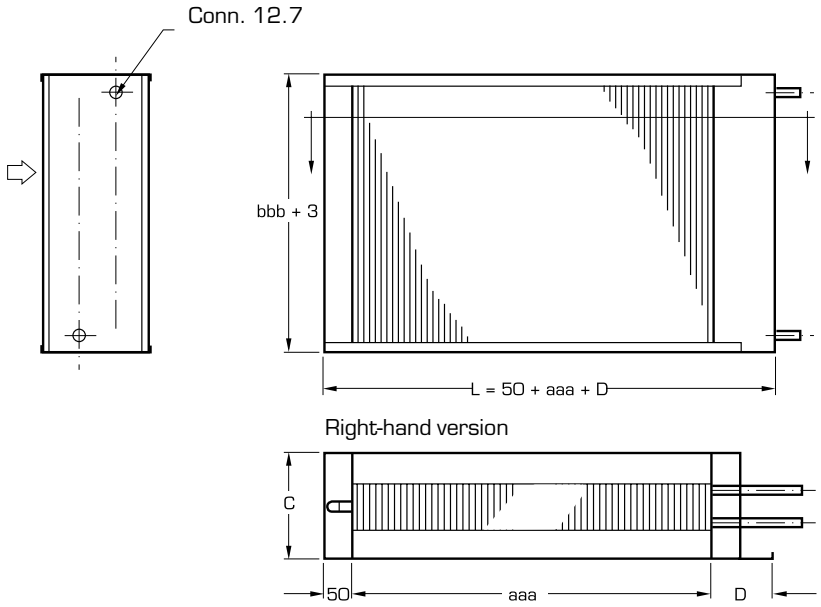
Maintenance

Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

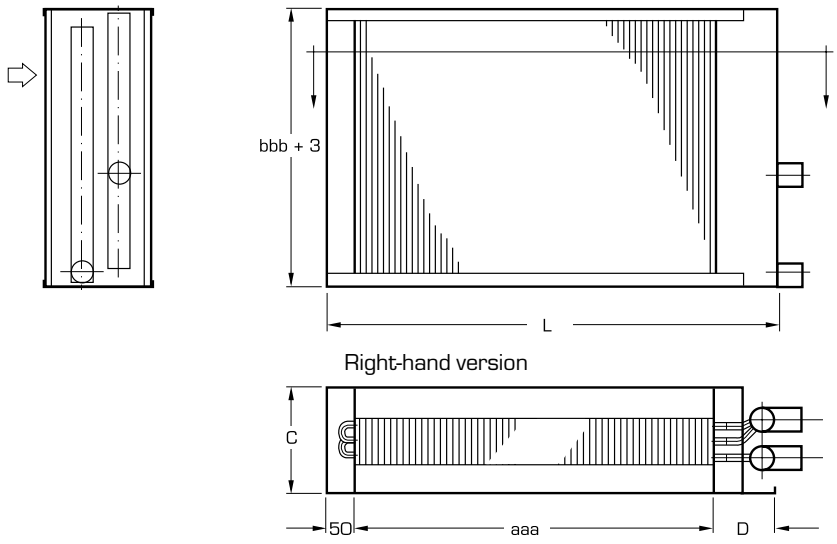
Ventilation Coils for Condensing Refrigerant

Dimensions, Coil with smooth Top, Bottom, Cover Plates – QLOM

Pipe conn. size 15



Pipe conn. size 28.6, 34.9, 41.3, 54.0



Detailed dimensional drawings, weights and volumes can be obtained via the product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

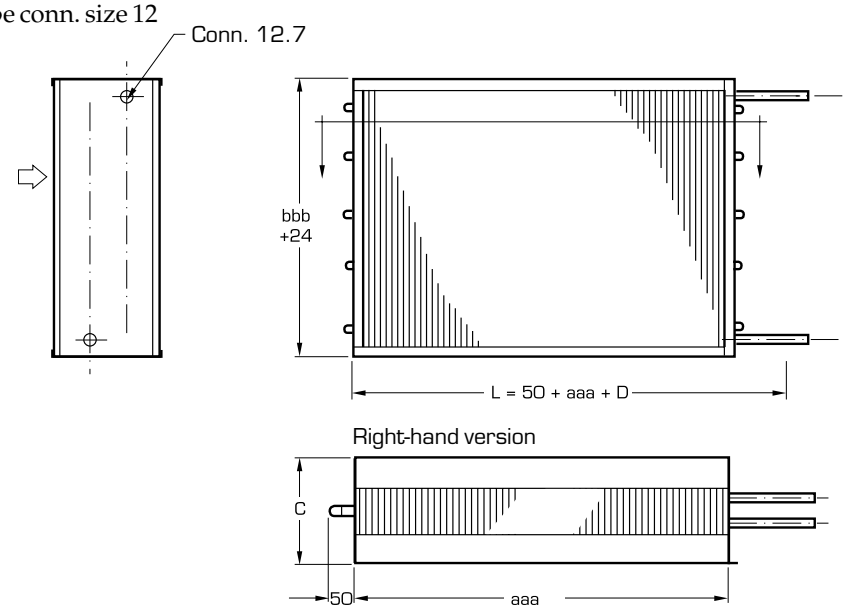
Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	136	06	280
02	165	08	341
03	194	10	399
04	223	12	457

Pipe conn. size	D mm
15	50
28,6	100
34,9	100
41,3	150
54,0	150

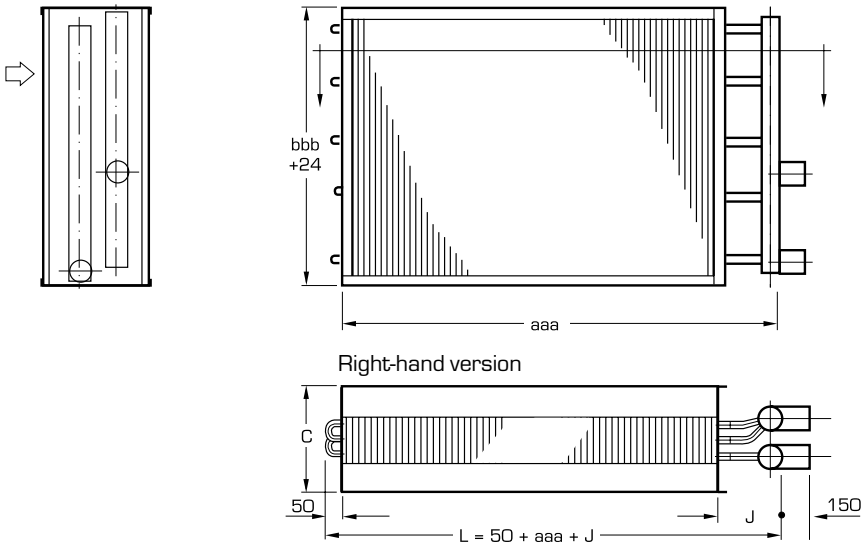
Ventilation Coils for Condensing Refrigerant

Dimensions, Coil with simpler casing without cover plate – QLOT

Pipe conn. size 12



Pipe conn. size 28.6, 34.9, 41.3, 54.0



Detailed dimensional drawings, weights and volumes can be obtained via the product selection program called **Coils.**

All dimensions in mm if not otherwise specified.

Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	-	06	221
02	125	08	295
03	-	10	353
04	154	12	411

Pipe conn. size	J mm
12	115
28,6	89
34,9	98
41,3	115
54,0	144

Ventilation Coils for Condensing Refrigerant

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called Coils or from our website on the Internet.

Technical Data

Sizes from 200 x 200 mm to 3500 x 2400 mm.
Number of tube rows: 1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch: 1.8, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 mm.
Max. permissible air velocity: 5 m/sec.

Design Data

Max. permissible air pressure: 2.2 MPa at a max. operating temperature of 100 °C.
For particulars about operation at higher pressures, contact us.
All coils are pressure tested and leakage tested with dry air under water.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Product Code

Air handling unit coil for condenser **QLO(M,T)-aaa-bbb-cc-dd-ee-f**

Casing with smooth top, bottom and cover plates **(M)**

Casing, of simpler design without cover plate **(T)**

Width, cm **(aaa)**
020-350
(Fin width excl. headers and bends)

Height, cm **(bbb)**
020-240
(Fin height excl. plates)

Number of tube rows **(cc)**
01, 02, 03, 04,
06, 08, 10, 12

Fin pitch, mm **(dd)**
18 = 1,8 mm
20 = 2,0 mm
25 = 2,5 mm
30 = 3,0 mm
40 = 4,0 mm
50 = 5,0 mm
60 = 6,0 mm

Number of liquid passes **(ee)**
02-98

Connection side **(f)**
1 = right-hand
2 = left-hand
3 = right-hand, split circuit 1/2+1/2
4 = left-hand, split circuit 1/2+1/2
5 = right-hand, split circuit 1/3+2/3
6 = left-hand, split circuit 1/3+2/3
7 = right-hand, 3 equal stages
8 = left-hand, 3 equal stages

Notes

QDIC – Coil for Liquids, Titanium, for cooling air

The QDIC coil is designed for aggressive water and sea water in ventilation units and coils installed in ducts.

Design

The coil casing is made of stainless or acid-proof steel. The parts of the coil that come in contact with liquid are made of titanium and the fins are available in the following materials:
- aluminium
- epoxy-coated aluminium
- copper
- electro-tinned copper.

The coil is equipped with welded flanges on the pipe connections and has stainless or acid-proof steel lifting lugs.
Plugged connections are provided for venting and drainage.
On request, 15 x 24 mm mounting holes can be drilled in the connection flanges of the casing.

The **QDIC** is designed for cooling air and is equipped with a drop tray. The coil is produced in sizes from 500 x 400 mm to 3500 x 2400 mm.

For an estimate and price quotation, contact Coiltech AB.

Facts

- Fin pitches: 1.8, 2.0, 2.5, 3.0 and 4.0 mm.
- Number of tubes deep: 1 to 12 tube rows.

Design data

Max. operating pressure 1.6 MPa at max. operating temperature: 100 °C.
Pressure tested at 2.1 MPa.
Designed and manufactured in accordance with the Pressure Equipment Directive PED 97/23EC.

Ventilation Coils for Steam

For heating air with steam

Design

Steam coil with cover plates for the headers: **QLSK**

Standard size range from 200 x 200 mm to 3500 x 1800 mm.
Larger sizes are available to special order.

Normal air velocity should be 3 – 4 m/s.

Easy to size using the computerized product selection program called **Coils**. See under the heading: Heating and Cooling Coils.

Features

– Conforms to AMA Code QFC
– For air flows up to 40 m^3/s
– Available in several material combinations
– Low pressure drop on the air side
– Number of tube rows: 1 or 2.
– Fin pitches from 1.8 to 6.0 mm.

Ventilation Coils for Steam

Design
The coils are produced in three parts: finned body, headers and casing. Together with the pleated fins, the tubes are arranged staggered inside the coil to provide maximum output. The coils are designed for vertical steam flow. The connections of the headers have male pipe threads (BSP). The coil has smooth cover plates over the headers.

Materials and Surface Treatment
The coils consist of copper tubes and aluminium fins.
The casing is made of hot galvanized sheet steel.
The headers on the steam side are made of steel, DN 25 are made of copper, and on the condensate side are made of copper.
Materials capable of withstanding aggressive environments are available, see the list of materials.

Accessories
A variety of different accessories are available, see the separate section on accessories.

Sizing
Use our product selection program called Coils for sizing. The product selection program also provides dimensional drawings.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop, humid and dry	Pa
Steam side:	Return temperature	°C
	Steam flow:	l/s
	Condensation pressure	Bar

And other material data, coil data and product codes.

Installation
The coil is labelled to indicate how the inlet and return piping is to be connected. The coil is connected with steam to the upper pipe and return to the lower pipe, see Fig. 1.

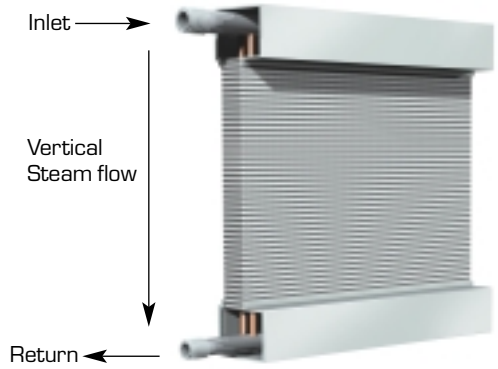


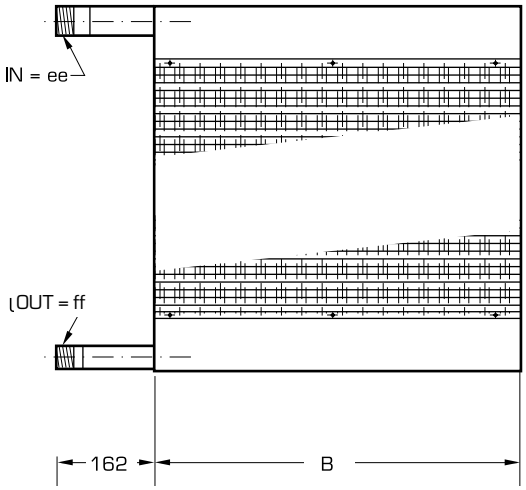
Fig. 1

Anti-freeze Protection
If freezing is likely, an anti-freeze sensor should be fitted in the air flow or an electric air heater can be used to heat the air.
More information can be obtained from our product selection program called Coils or from our website on the Internet.

Maintenance
Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

Ventilation Coils for Steam

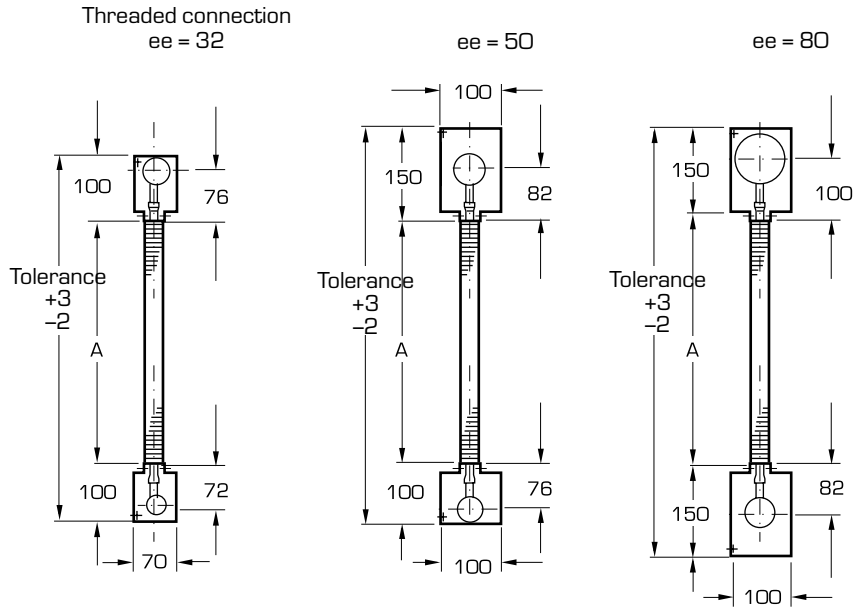
Dimensions, Coil with Cover Plates for the Headers – QLSK



Right-hand version

A detailed dimensional drawing, weight and volume can be obtained from our product selection program called **Coils.**

All dimensions in mm if not otherwise specified.



Ventilation Coils for Steam

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data

Standard sizes from 200 x 200 to 3500 x 1800 mm.
Large sizes are available to special order.
Number of tube rows: 1 or 2.
Fin pitch: 1.8, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 mm.
Max. permissible liquid velocity: 5 m/sec.

Design Data

Max. permissible operating pressure: 1.0 MPa at a max. operating temperature of 185° C.
For particulars of higher pressures or temperatures, contact us. All coils are pressure tested and leakage tested with dry air under water.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Steam Purity

The pH of the steam should be between 8.8 and 9.2.
The oxygen content (O2) must not exceed 0.01 mg/kg.
The ammonia content (NH3) must not exceed 0.3 mg/kg.

Product Code

Air handling unit coil for steam (Vertical steam flow) **QLSK-aaa-bbb-cc-dd-ee-ff**

Width = height of air handling unit cm **(aaa)**
020-350
(Fin height excl. Headers and bends)

Height = width of air handling unit, cm **(bbb)**
020-180
(Fin width)

Number of tube rows **(cc)**
01, 02

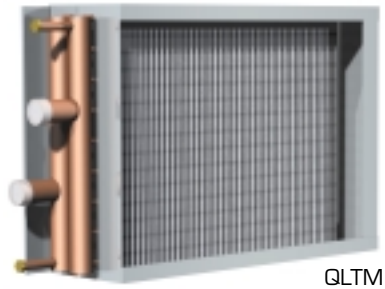
Fin pitch, mm **(dd)**
18 = 1,8 mm 40 = 4,0 mm
20 = 2,0 mm 50 = 5,0 mm
25 = 2,5 mm 60 = 6,0 mm
30 = 3,0 mm

Connection size, steam side, DN **(ee)**

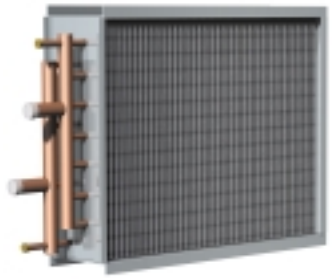
Connection size, condensate, side DN **(ff)**

Ventilation Coils for Heat Recovery

Supply air coil

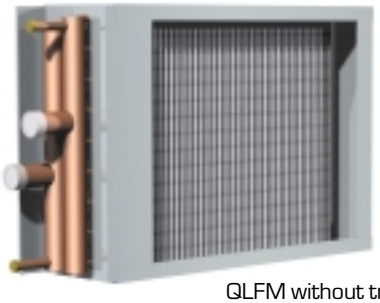


QLTM

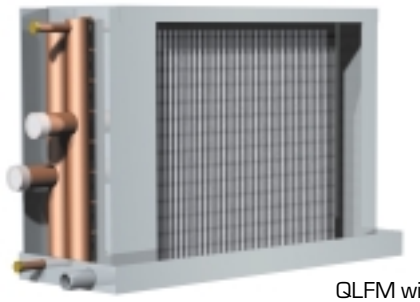


QLTT

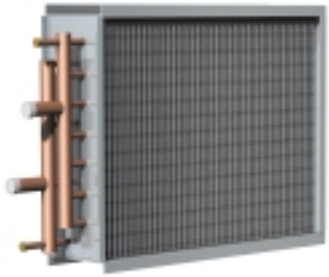
Extract air coil



QLFM without tray



QLFM with tray



QLFT without tray

The ECOTERM System consists of one or several supply air and extract air coils in which a brine solution is circulated to recover heat energy from the extract air.

Design

QL = 1/2″ tubes with pleated fins
QF = 1/2″ tubes with smooth fins

Supply air coil = Q(L,F)T
Extract air coil = Q(L,F)F

Supply air coil with smooth top, bottom and cover plates:
Q(L,F)TM
Supply air coil, simpler casing without cover plate:
Q(L,F)TT
Extract air coil with smooth top, bottom and cover plates:
Q(L,F)FM
Extract air coil, simpler casing without cover plate:
Q(L,F)FT

Standard size range from 200 x 200 to 3500 x 2400 mm.

Larger sizes are available to special order.

Normal air velocity: 2 - 3 m / s.

Easy to size using the computerized product selection program called **Coils.** See under the heading: ECOTERM® Heat recovery system.

Features

– Conforms to AMA Code QFC
– For air flows up to 40 m^3/s.
– Available in several material combinations.
– Number of tube rows: from 1 to 12.
– Fin pitches: from 1.8 till 6.0 mm.
– Short delivery time.

Ventilation Coils for Heat Recovery

Design

Together with the pleated fins, the tubes are arranged staggered inside the coil to provide maximum output. The headers are equipped with plugged nipples for venting and drainage. The plug is designed as a manual purging valve.
All the connections are externally threaded (BSP).
The connection restricts the liquid flow as follows:

DN 15	max 0.7 l/sec.
DN 25	″ 1.6
DN 32	″ 2.8
DN 50	″ 7.0
DN 80	″ 14.0
DN 2x80	″ 28.0

The coil casing of the QL(T,F)M has smooth top and bottom plates with cover plates for the headers and bends.

The extract air coil (QLFM) is available with or without drain tray. The tray has a 32 mm horizontal drain.
The QL(T,F)T has a casing of simpler design without cover plate for the headers. The advantage with this coil is its shorter overall depth.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins.

The casing is made of hot galvanized sheet steel. The drip tray of the extract air coil is made of 304L stainless steel.

The headers are made of steel except those to DN 15 and DN 25 that are made of copper with brass connections.
Materials capable of withstanding aggressive environments are available, see the list of materials on the next page.

Accessories

A variety of different accessories are available, such as a by-pass pipework package, water trap, droplet eliminators, etc. See the section on accessories.

Sizing

Use our product selection program called Coils for sizing. See under the heading: ECOTERM Heat Recovery System.

For best economy, the coils should be sized to obtain the highest possible temperature efficiency. This is illustrated in Fig. 2. The computer program enables you to size systems consisting of a number of coils. It also provides a complete energy savings estimate and a layout showing the components included in the system.

The program provides the following data:

Temperature efficiency:		%
Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Pressure drop	Pa
	Outlet humidity	%
	Condensate	g/s
Water side:	Return temperature	°C
	Liquid flow per coil	l/s
	Total liquid flow of the system	l/s
	Liquid velocity	m/s

And other material data, coil data and product codes.

Counter-flow connection

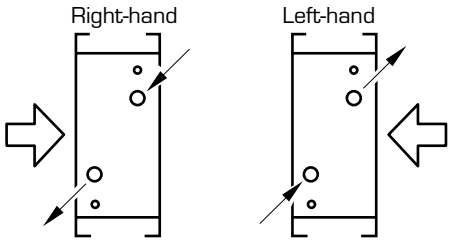


Fig. 1.

Temperature efficiency according to Eurovent

$$\eta t = \frac{t2 - t1}{t3 - t1}$$

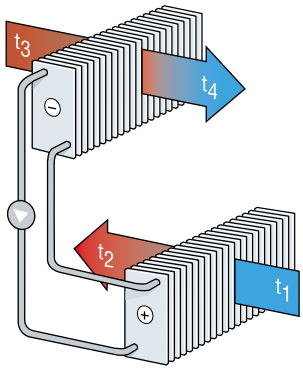
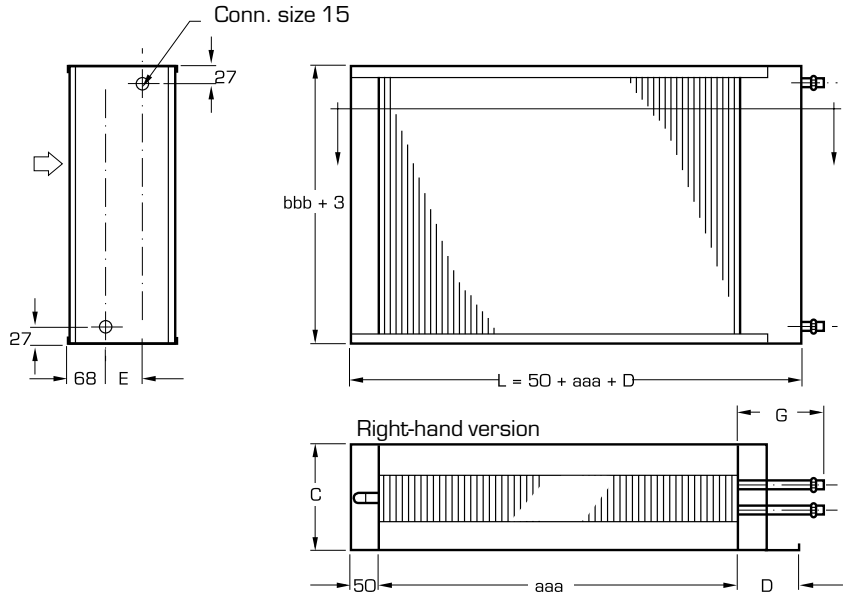


Fig. 2

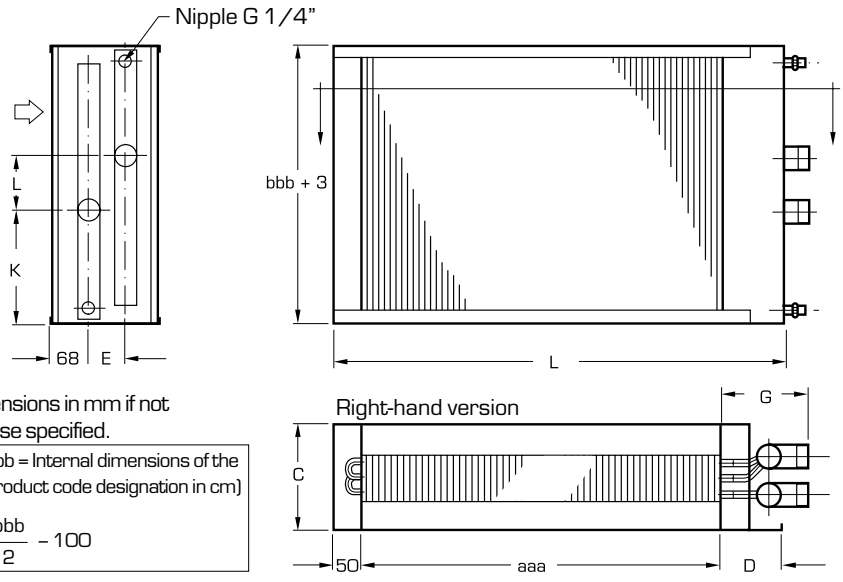
Ventilation Coils for Heat Recovery

Dimensions, Coil with smooth Top, Bottom and Cover Plates – QLTM

Pipe connection size 15



Pipe conn. size 25, 32, 50, 80



All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

aaa cm	L
<040	120
≥040	200

Pipe conn.	D mm	G mm
15	50	245
25	100	240
32	100	246
50	150	275
80	150	295

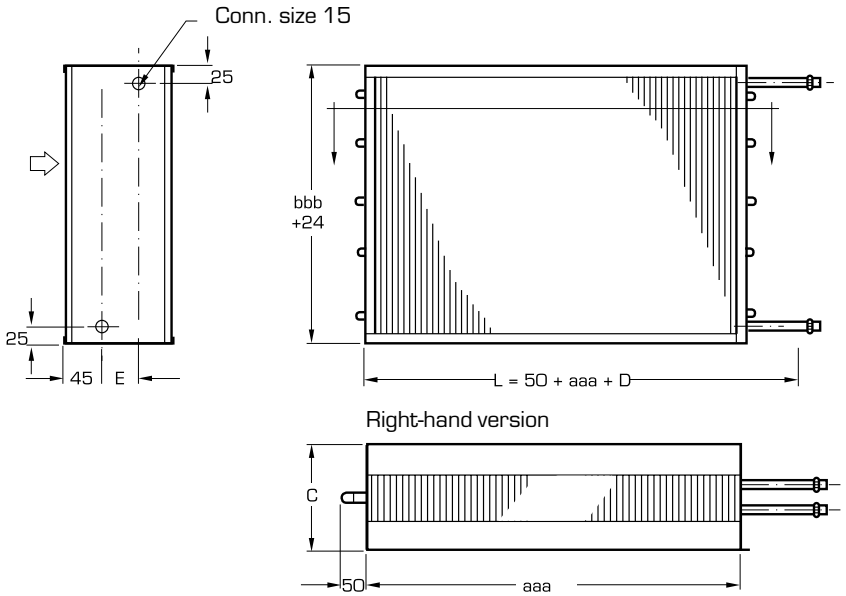
Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	136	06	280
02	165	08	341
03	194	10	399
04	223	12	457

	E										
Number of tube rows (Code suffix cc)	15	25	32	50	80	Number of tube rows (Code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

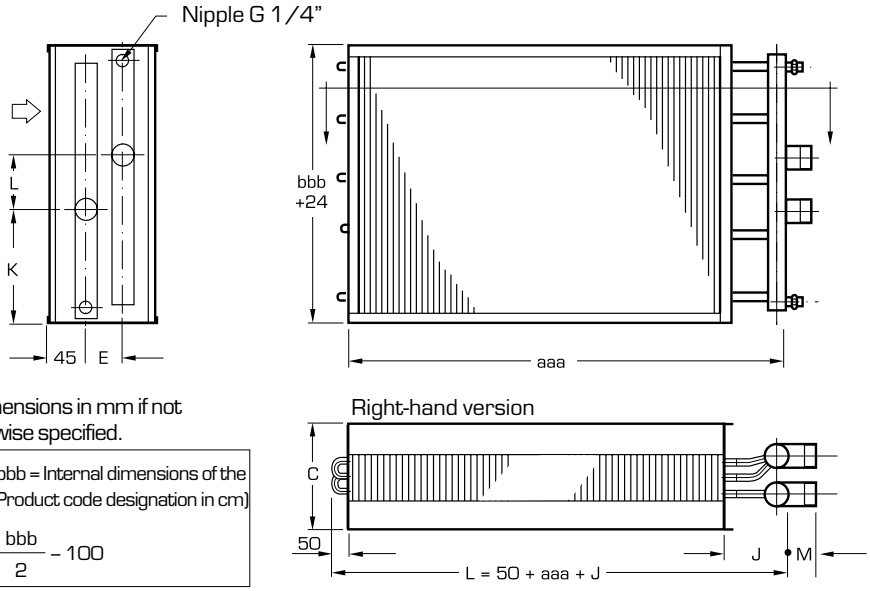
Ventilation Coils for Heat Recovery

Dimensions, Coil with simpler Casing without Cover Plate – QLTT, QLFT

Pipe connection size 15



Pipe conn. size 25, 32, 50, 80



bbb cm	L
<040	120
≥040	200

Pipe conn.	J mm	M mm
15	115	-
25	89	90
32	98	90
50	115	100
80	144	110

All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$K = \frac{bbb}{2} - 100$

Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	-	06	221
02	125	08	295
03	-	10	353
04	154	12	411

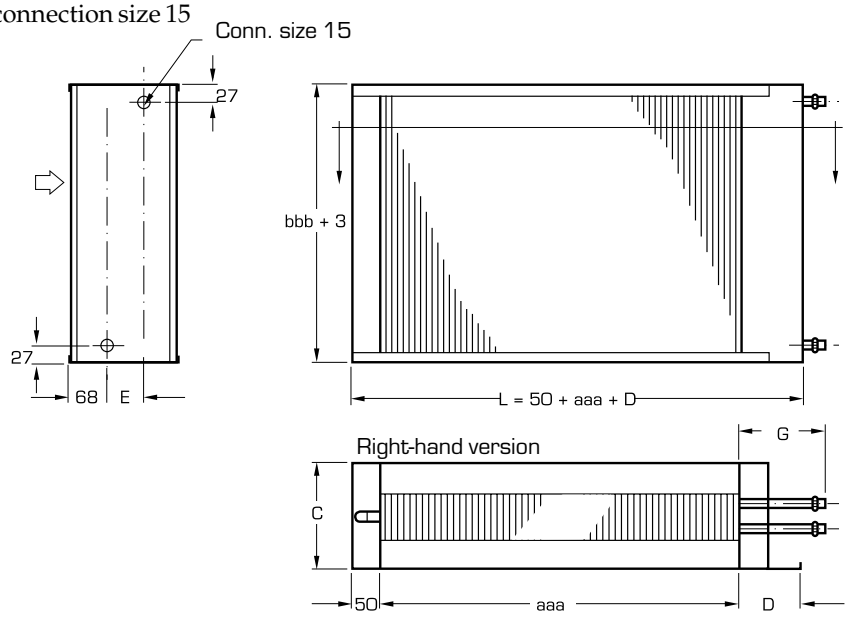
E

Number of tube rows (Code suffix cc)	15	25	32	50	80	Number of tube rows (Code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

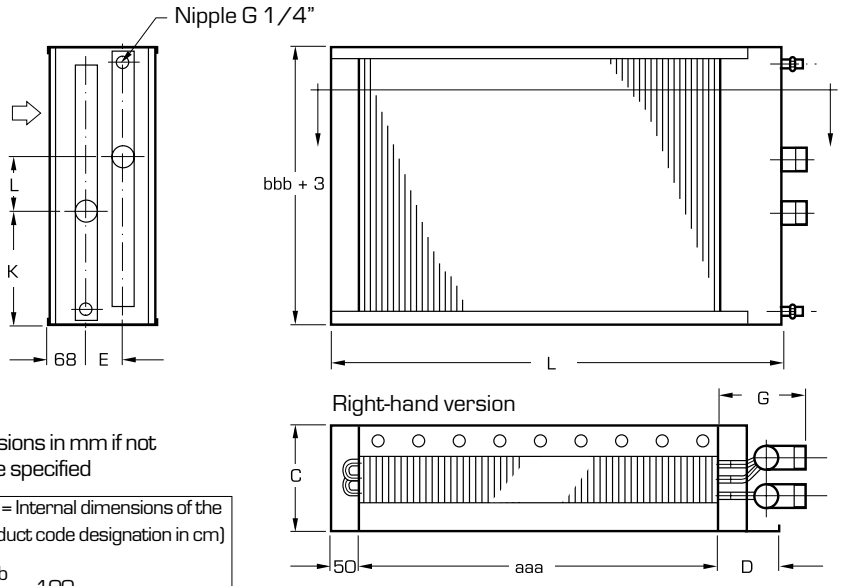
Ventilation Coils for Heat Recovery

Dimensions, Coil with smooth Top, Bottom, Cover Plates without Tray – QLFM

Pipe connection size 15



Pipe conn. size 25, 32, 50, 80



aaa cm	L
<040	120
≥040	200

Pipe conn.	D mm	G mm
15	50	245
25	100	240
32	100	246
50	150	275
80	150	295

All dimensions in mm if not otherwise specified

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Number of tube rows (Code suffix cc)	C mm	Number of tube rows (Code suffix cc)	C mm
01	136	06	280
02	165	08	341
03	194	10	399
04	223	12	457

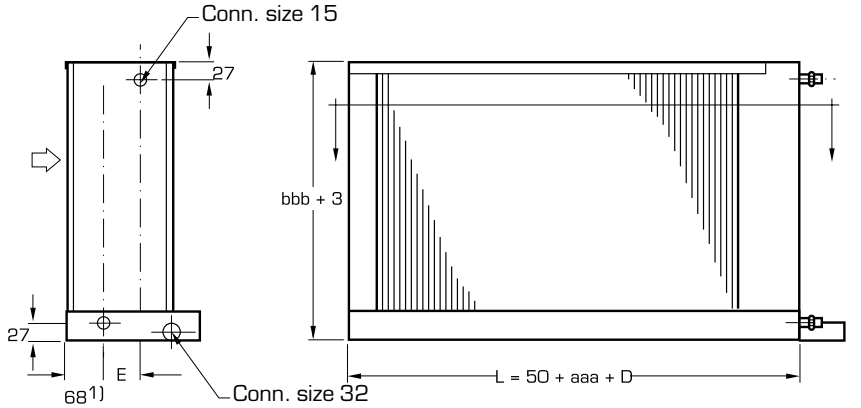
E

Number of tube rows (Code suffix cc)	15	25	32	50	80	Number of tube rows (Code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Heat Recovery

Dimensions, Coil with smooth Top, Bottom, Cover Plates with Tray – QLFM

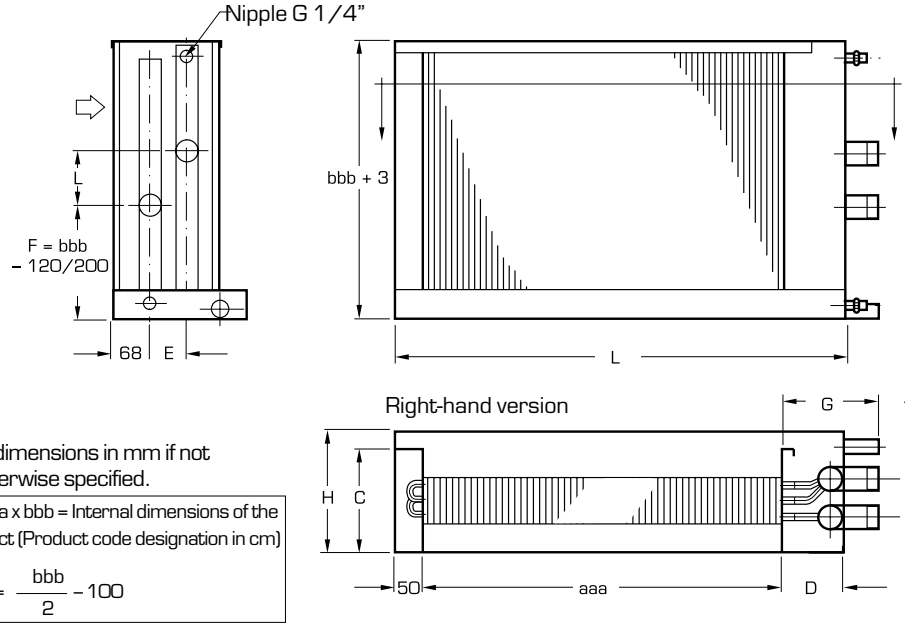
Pipe connection size 15



1) 1 tube row and conn. 50, 58 mm

Detailed dimension drawing, weight and volume can be obtained from our product selection program called **Coils.**

Pipe conn. size 25, 32, 50, 80



aaa cm	L
<040	120
≥040	200

Pipe conn	D mm	G mm
15	50	245
25	100	240
32	100	246
50	150	275
80	150	295

All dimensions in mm if not otherwise specified.

aaa x bbb = Internal dimensions of the duct (Product code designation in cm)

$$K = \frac{bbb}{2} - 100$$

Number of tube rows (Code suffix cc)	C mm	H, mm Droplet eliminator without	with	Number of tube rows (Code suffix cc)	C mm	H, mm Droplet eliminator without	with
01	136	240	360	06	280	360	360
02	165	240	360	08	341	360	540
03	194	240	360	10	399	540	540
04	223	240	360	12	457	540	540

	E										
Number of tube rows (Code suffix cc)	15	25	32	50	80	Number of tube rows (Code suffix cc)	15	25	32	50	80
01	0	36	43	68	-	06	-	144	144	144	144
02	29	58	58	68	94	08	-	205	205	205	205
03	58	58	58	68	94	10	-	263	263	263	263
04	87	87	87	87	101	12	-	321	321	321	321

Ventilation Coils for Heat Recovery

Installation
The coils are labelled to indicate how the inlet and return piping is to be connected. The coils shall be connected to obtain a counter-flow mode, see Fig 1. The coils can be ordered in the right-hand or the left-hand version. The system must be adequately vented to provide correct performance. More information can be obtained from our product selection program called **Coils** or downloaded from our website on the Internet.

Maintenance
Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

Environment
An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data
Sizes: QL(T,F)M from 200 x 200 mm to 3500 x 2400 mm.
Sizes: QL(T,F)T from 200 x200 mm to 1200 x 1000 mm.
Number of tube rows: 1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch: 1.8, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 mm.
Max. permissible liquid velocity: 1.5 m/sec.
Extract air coil:
Max permissible air velocity without droplet eliminator: 2.9 m/s.
Max permissible air velocity with droplet eliminator: 5.0 m/s.
Supply air coil:
Max permissible air velocity: 5.0 m/s.

Anti-freezing Solutions (brines)
Glycols, ethanol, saline solutions, oils, etc. To ensure correct performance, it is important to fill the system with the same brine solution and concentration that it is sized to use. Various types of brine are dealt with in the calculation program and the program computes the correct pressure drop depending on the type of brine and its concentration.
Typical percentages of anti-freezing solution normally mixed with water are 20-35% ethylene glycol and 25-35% propylene glycol depending on the temperatures at which the system operates. A concentration of 20% eliminates frost tension in the coil.

Design Data
- Max permissible operating pressure: 1.6 MPa at a max. permissible operating temperature of 100° C or
- Max permissible operating pressure: 1.0 MPa at a max. permissible operating temperature of 150° C.

All the coils are pressure tested with dry air under water.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED)

Product Code
Air handling unit coil for heat recovery **Q(L,F)(T,F)M,T-aaa-bbb-cc-dd-ee-f**

Pleated fins **(L)**
Smooth fins **(F)**
Supply air coil **(T)**
Extract air coil **(F)**

Casing with smooth top, bottom and cover plates **(M)**

Casing, simpler design without cover plate **(T)**

Width, cm **(aaa)**
QLTM, QLFM = 020–350
QLTT, QLFT = 020–120
(Fin width excl. headers and bends)

Height, cm **(bbb)**
QLTM, QLFM = 020–240
QLTT, QLFT = 020–100
(Fin height excl. plates)

Number of tube rows **(cc)**
01, 02, 03, 04, 06, 08, 10, 12

Fin pitch, mm **(dd)**
18 = 1,8 mm 40 = 4,0 mm
20 = 2,0 mm 50 = 5,0 mm
25 = 2,5 mm 60 = 6,0 mm
30 = 3,0 mm

Number of liquid passes **(ee)**
02-98

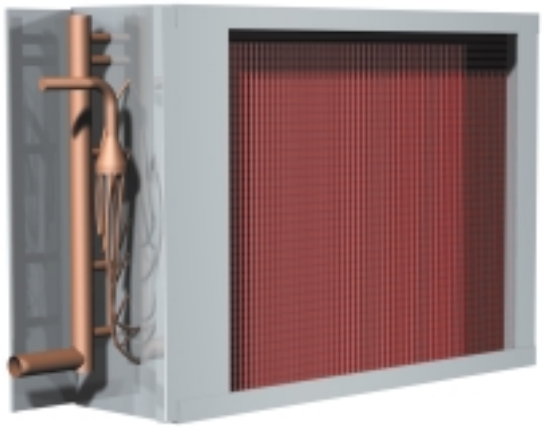
Connection side **(f)**
QLFM, QLFT
1 Right-hand without tray, 2 Left-hand without tray
3 Right-hand with tray, 4 Left-hand with tray
5 Right-hand with tray and space for droplet eliminator
6 Left-hand with tray and space for droplet eliminator

QLFT
1 Right-hand without tray, 2 Left-hand without tray

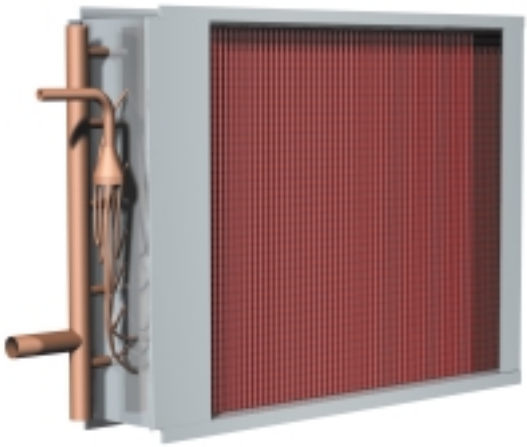
QLTT, QLTM
Cannot be ordered in right-hand/left-hand versions.
Code suffix f has been deleted.

Notes

Ventilation Coils for Evaporative Refrigerant



QLEM for cooling air with evaporative refrigerant



QLET for cooling air with evaporative refrigerant

Design

Coil with smooth top, bottom and cover plates: **QLEM.** The standard size range is from 200 x 200 mm to 3500 x 2400 mm.

Coil with simpler casing without cover plate: **QLET.** The standard size range is from 200 x 200 mm to 1200 x 1000 mm

Normal air velocity should be: 2 - 3 m/s.

Easy to size using our computerized product selection program called **Coils** that you'll find under the heading: Heating and Cooling Coils.

Features

– Conform to AMA Code QFC.22.
– Designed for air flows up to 40 m^3/s.
– Available in a variety of material combinations.
– Number of tube rows: from 1 to 12.
– Fin pitches: from 2.0 to 6.0 mm.
– Available in several output stages
– Short delivery time.

Ventilation Coils for Evaporative Refrigerant

Design

The coils are designed for horizontal airflow and are produced in three parts: headers/distributing pipes, finned body and casing.
Together with the pleated fins, the tubes are arranged staggered inside the coil to provide maximum output.
The coils are produced with distributing tubes for the inflowing refrigerant and a header for outflowing refrigerant.
The coils can be supplied for one, two or several output stages depending on the height of the coil. The coils with two output stages are normally connected so that every other loop belongs to output stage 1 and the intervening loops belong to stage 2. (interlace connection) see Fig 1. Coils with three or more output stages are normally split up vertically. See Fig 2.
The QLEM casing has a smooth top and bottom with cover plates for the headers and bends and is available with or without drain tray. The drain is 19 mm in diameter and is horizontally mounted.
The QLET has a casing of simpler design without cover plate for the headers. The advantage of this version is its shorter overall depth.

Materials and Surface Treatment

The coils consist of copper tubes and aluminium fins. The casing is made of hot galvanized sheet steel and the drain tray, if fitted, is made of 304L stainless steel. The standard headers are made of copper and their connections and nipples are made of brass. The connections have male threads. Materials capable of withstanding aggressive environments are available, see the list of materials.

Accessories

A variety of different accessories, such as expansion valves, flanges, droplet eliminators, etc. are available. See the section on accessories.

Sizing

Use our product selection program called Coils for sizing. See under the heading Heating and Cooling Coils. The product selection program also provides dimensional drawings.
The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop, humid and dry	Pa
	Humidity in the outlet air	%
	Condensate	g/s
Refrigerant side:	Refrigerant pressure drop	kPa

And other material data, coil data and product codes.

Installation

The coil is labelled to indicate how the inlet and return piping is to be connected. If the coil is supplied with several output stages, it has a copper identification label brazed that indicates the output stage. The coil can be ordered in the right-hand or left-hand version.
More information can be obtained from our product selection program called Coils or from our website on the Internet.

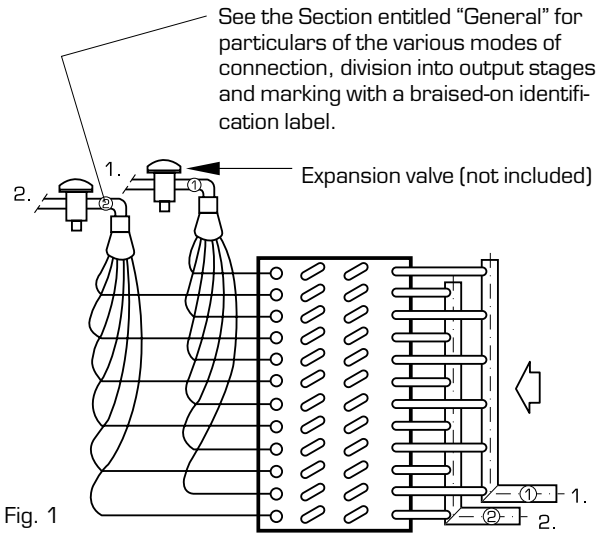


Fig. 1

Three or more output stages are normally split up vertically

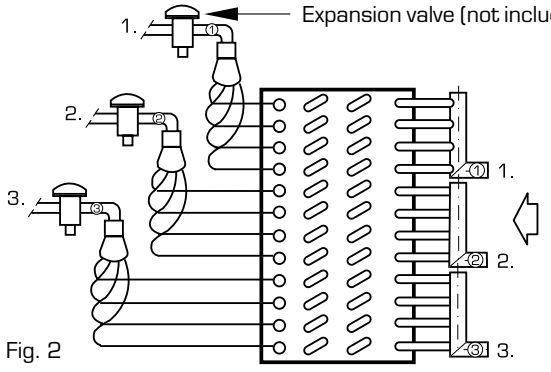


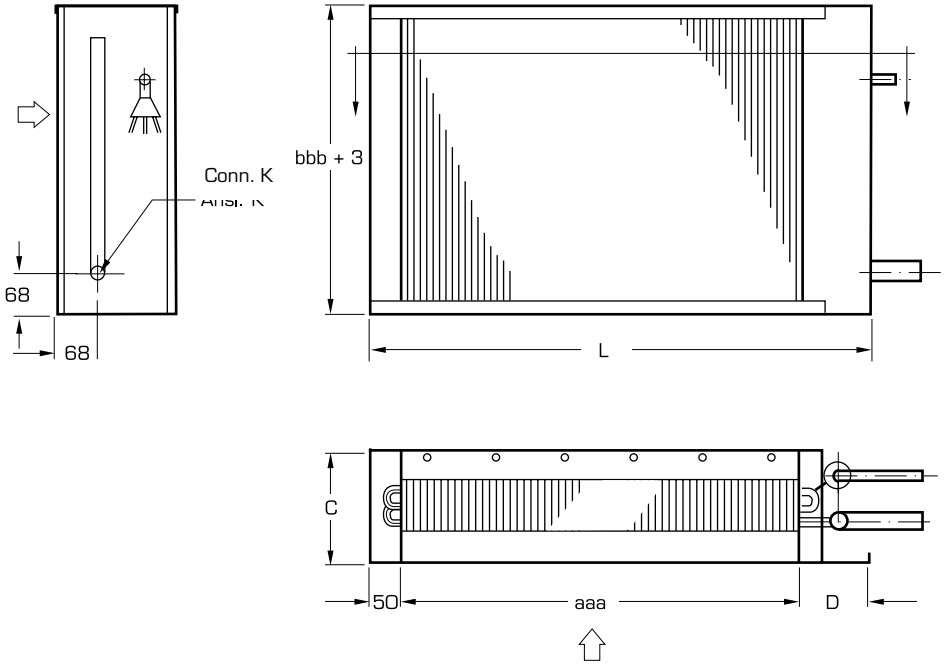
Fig. 2

Maintenance

Operating and maintenance instructions can be obtained from our product selection program called **Coils** or from our website on the Internet.

Ventilation Coils for Evaporative Refrigerant

Dimensions, Coil with smooth Top, Bottom, Cover Plates – QLEM without tray

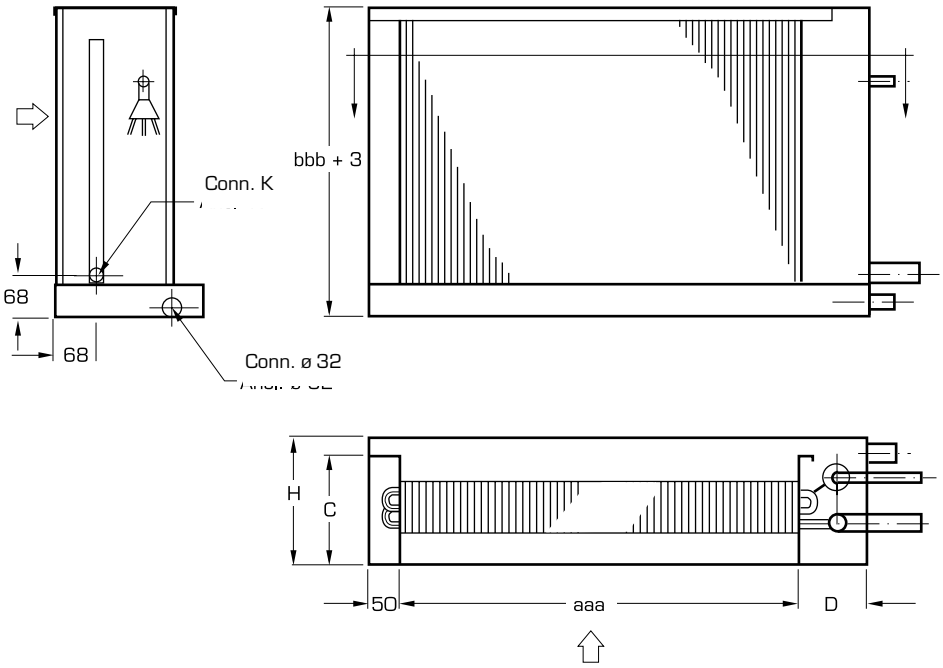


Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	136	06	280
02	165	08	341
03	194	10	399
04	223	12	457

Pipe conn. K	D mm
1 1/8"	100
1 3/8"	100
1 5/8"	100
2 1/8"	150

Ventilation Coils for Evaporative Refrigerant

Dimensions, Coil with smooth Top, Bottom, Cover Plates – QLEM with tray

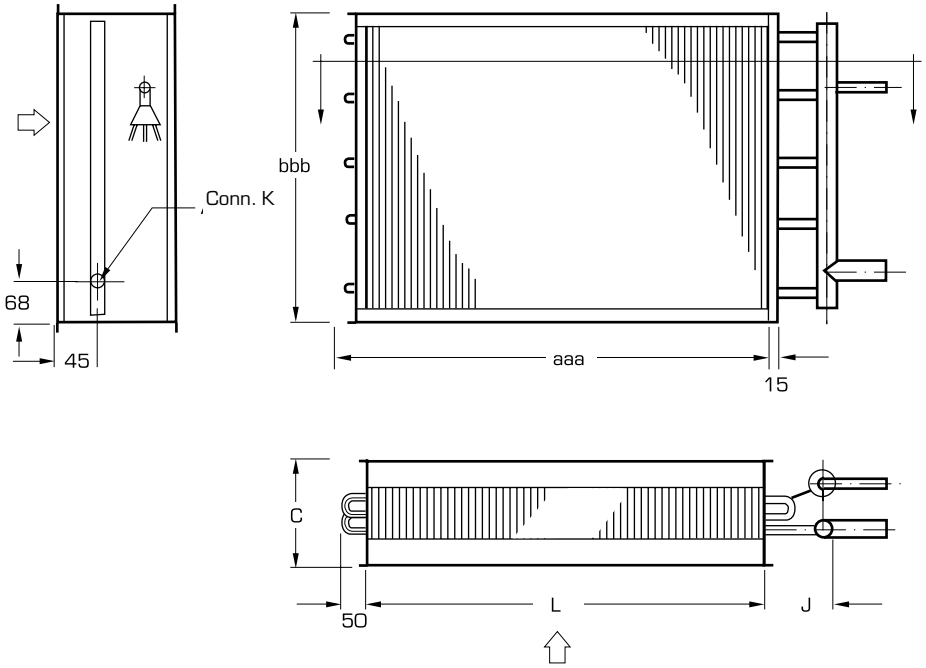


Number of tube rows (code suffix cc)	C mm	H, mm Droplet eliminator without	with	Number of tube rows (code suffix cc)	C mm	H, mm Droplet eliminator without	with
01	136	240	360	06	280	360	360
02	165	240	360	08	341	360	540
03	194	240	360	10	399	540	540
04	223	240	360	12	457	540	540

Pipe conn.	K mm
1 1/8”	100
1 3/8”	100
1 5/8”	100
2 1/8”	150

Ventilation Coils for Evaporative Refrigerant

Dimensions, Coil with smooth Top, Bottom, Cover Plates – QLET



Number of tube rows (code suffix cc)	C mm	Number of tube rows (code suffix cc)	C mm
01	-	06	221
02	125	08	295
03	-	10	353
04	154	12	411

Pipe conn. K	J mm
1 1/8"	83
1 3/8"	90
1 5/8"	98
2 1/8"	109

Ventilation Coils for Evaporative Refrigerant

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called **Coils** or from our website on the Internet.

Technical Data

Sizes: QLEM, available in widths from 200 mm to 3500 mm; heights from 200 mm to 2400 mm.
Sizes QLET, available in widths from 200 mm to 1200 mm; heights from 200 mm to 1000 mm.
Number of tube rows: 1, 2, 3, 4, 6, 8, 10, 12.
Fin pitch: 2.0, 2.5, 3.0, 4.0, 5.0, 6.0 mm.
Max. permissible air velocity without droplet eliminator: 2.9 m/sec.
Max. permissible air velocity with droplet eliminator: 5.0 m/sec.

Design Data

Max permissible operating pressure: 2.2 MPa at a max. permissible operating temperature of 100° C.
All the coils are pressure tested and leakage tested with dry air under water.
For utmost cleanness, the coils are inert-gas soldered and filled with nitrogen prior to delivery.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Product Code

Air handling bunit coils for evaporative refrigerant **QLE(M,T)-aaa-bbb-cc-dd-ee-f-g**

Casing with smooth top, bottom and cover plates **(M)**
Casing, of simpler design without cover plate **(T)**

Width, cm **(aaa)**
QLEM = 020-350
QLET = 020-120
Fin width excl. headers and bends)

Height, cm **(bbb)**
QLEM = 020-240
QLET = 020-100
(Fin height excl. plates)

Number of tube rows **(cc)**
01, 02, 03, 04,
06, 08, 10, 12

Fin pitch, mm **(dd)**
20 = 2,0 mm 40 = 4,0 mm
25 = 2,5 mm 50 = 5,0 mm
30 = 3,0 mm 60 = 6,0 mm

Number of liquid passes **(ee)**
02-98

Connection side **(f)**
QLEM
1 Right-hand without tray 2 Left-hand without tray
3 Right-hand with tray 4 Left-hand with tray
5 Höger med tråg och plats för droppavskiljare
6 Vänster med tråg och plats för droppavskiljare

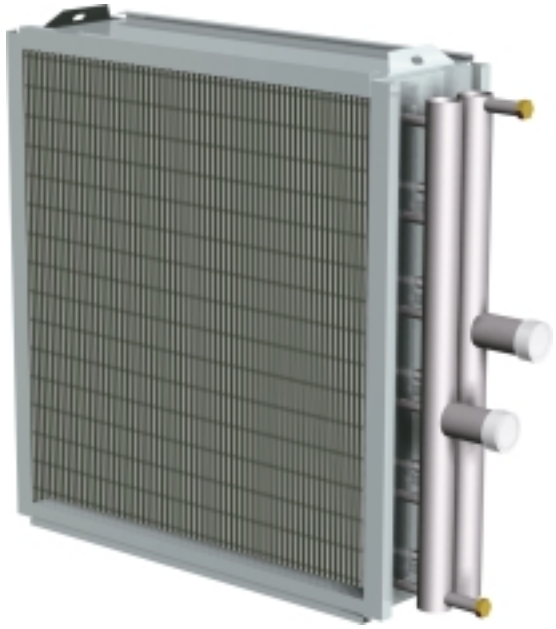
QLET
1 Right-hand with tray
2 Left-hand with tray

Output stage **(g)**
1 Whole circuit
2 Split circuit, 1/2+1/2
3 Split circuit, 1/3+2/3

Coils for Industrial Applications

Notes

QDHF – Coils for Liquids, copper/aluminium



Coil with copper tubes and aluminium fins

Design

The **QDHF** Coils with 15 mm tubes are designed for:
– heating or cooling of air by means of water, oil or other liquid.

Features

The coils are available:
– with various fin pitches
– in sizes up to 8 x 2.4 m for horizontal air flow, in the standard version.

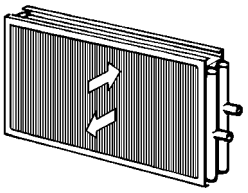
QDHF – Coils for Liquids, copper/aluminium

Design
The coil casing is made of 2 mm thick galvanized sheet steel. To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes. The DN 32 and DN 50 nom. pipe size connections are threaded, whereas pipe connections larger than DN 50 are designed for welding to the connecting pipework. Plugged connections are provided for venting and drainage. Weld-on flanges to DIN 2635 can be supplied as accessories on the liquid side.

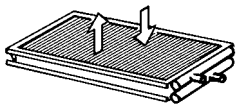
Materials and Surface Treatment
The QDHF consists of copper tubes and aluminium fins. The headers and connections are made of steel and are painted with anti-corrosion paint.
The coil casing is made of galvanized sheet steel.
All the components that are part of the product conform to Corrosion Resistance Category C2 in accordance with ISO 12944.

Design Variants – Installation
The QDHF can be installed as follows:

Important! The variant for vertical airflow is not standard, but is available to special order.



For horizontal airflow



For vertical airflow

Accessory

Flange, for connecting to the coil connections and the pipe system as counter-flange can be provided as option. Please see "Accessories" for full information.

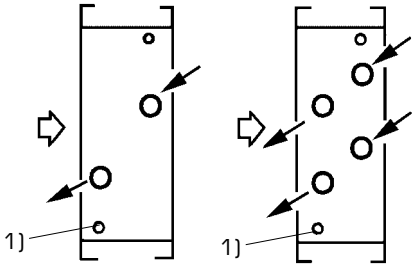
Sizing
Use our product selection program Coils for sizing. The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

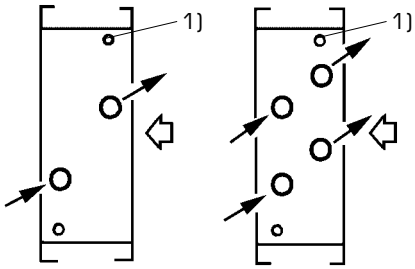
Also material data, coil data and product codes

Installation
The coil can be installed either as a right-hand or a left-hand version to obtain counter-flow connection mode.

Installed as a right-hand version.



Installed as a left-hand version.

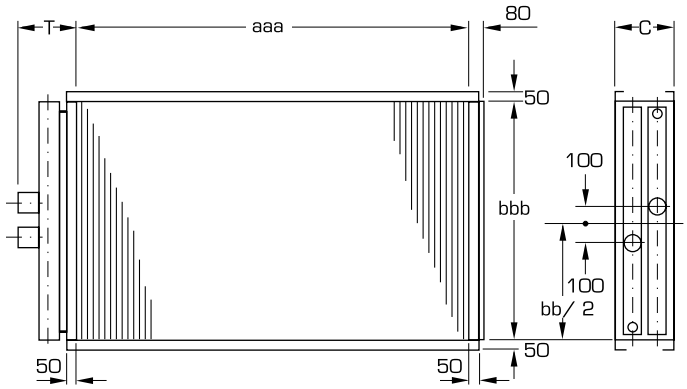


1) The sensor of an anti-freeze thermostat can be fitted to one of the connections for venting and drainage, in the return header.

Maintenance
Operating and maintenance instructions can be obtained from our product selection program **Coils** or from our website on the Internet.

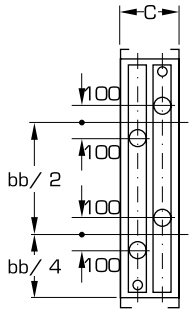
QDHF – Coils for Liquids, copper/aluminium

Dimensions, Weights and Volumes



Code suffix cc	C
01	140
02	175
03	210
04	245
05	280
06	315
08	385
10	455
12	530

Dim. aaa = code suffix aaa, finned dimension in cm
Dim. bbb = code suffix bbb, finned dimension in cm



Coil Weights (excluding liquid) QDHF

dd = 18, 20, 25

Weight, kg = $3 \cdot bb + 0{,}20 \cdot aa \cdot bb \cdot c + 1{,}6\,(aa + 1)$

dd = 30, 40, 50, 60

Weight, kg = $3 \cdot bb + 0{,}15 \cdot aa \cdot bb \cdot c + 1{,}6\,(aa + 1)$

Coil Volume

cc = 01 och 02 = $0{,}5 \cdot bb + 0{,}04 \cdot aa \cdot bb \cdot cc$

cc = 03 och 04 = $1{,}3 \cdot bb + 0{,}04 \cdot aa \cdot bb \cdot cc$

Pipe Connections – Design

Pipe conn. size DN	T
32	200
50	225
80	265
2 x 80	265
100	290

QDHF – Coils for Liquids, copper/aluminium

Environment
An Environmental and Building Product Declaration can be obtained from our product selection program **Coils** or from our website on the Internet.

Design Data
Max. permissible operating pressure:
1.6 MPa at a max. permissible operating temperature of 100 °C or
Max. permissible operating pressure:
1.0 MPa at a max. permissible operating temperature of 150 °C.

If your application calls for higher pressure, contact us.
Pressure tested and leakage tested with dry air under water at pressure 2.1 MPa.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Material code = item g in the product code

Material	Casing	Headers	Fins
A	Fzv	Steel	Al (standard)
B	Fzv	Cu	Cu
D	Fzv	Cu	Al
E	Fzv	Steel	Corropaint
F	Fzv	Cu	Cu tinned
K	Fzv	Cu	Corropaint
L	AISI 304L	Steel	Al
M	AISI 304L	Cu	Cu
N	AISI 304L	Cu	Al
O	AISI 304L	Steel	Corropaint
P	AISI 304L	Cu	Cu tinned
Q	AISI 304L	Steel	Al Corrodip
R	AISI 304L	Cu	Corropaint

Fzv = galvanized sheet steel
AISI = stainless sheet steel
Cu = copper
Al = aluminium

Descriptive Text
Coiltech type QDHF finned-tube coil with headers made of steel,15 mm copper tubes and aluminium fins. On the air side the coil shall be provided with a casing made of galvanized sheet steel. The casing shall have connection flanges. The coil shall be equipped with plugged connections for venting and drainage.

Product Code
Coils for liquids **Q DH F-aaa-bbb-cc-dd-ee-f-g**

Finned dimension along tubes, cm **(aaa)**
020-800

Finned dimension across tubes, cm **(bbb)**
020-240

Number of tube rows **(cc)**
01-12

Fin pitch **(dd)**
18, 20, 25, 30, 40, 50, 60

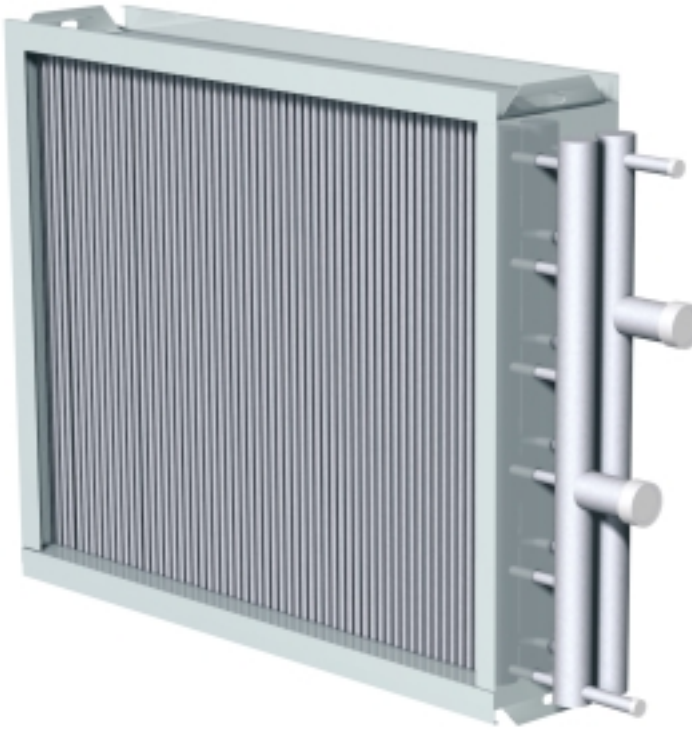
Number of liquid passes **(ee)**

Connection side **(f)**
1 = Right-hand
2 = Left-hand
0 = Unspecified right-hand/left-hand (heating coil only)
If the connection side is not specified in the order, a right-hand coil will be produced. The coils can be reversed.

Material **(g)**
See adjacent material list.

Which material shall I choose?
See section: Heat Exchangers, General.

QMXF – Coils for Liquids, steel/steel



Coil with electro-galvanized steel tubes and aluminium-zinc coated sheet steel fins

Design

The **QMXF** coils with 3/4" tubes are designed for:
– heating or cooling of air by means of water, oil or other liquid
– heating or cooling of water, oil or other liquid by means of air
– high temperature applications.

Features

The coils are available:
– with different fin pitches
– in sizes up to 8 x 2.4 m for horizontal air flow as standard.

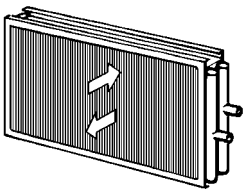
QMXF – Coils for Liquids, steel/steel

Design
The coil casing is made of 2 mm thick galvanized sheet steel. To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes. The DN 32 and DN 50 nom. pipe size connections are threaded, whereas pipe connections larger than DN 50 are designed for welding to the connecting pipework. Plugged connections are provided for venting and drainage.
Weld-on flanges according to DIN 2635 can be supplied as accessories on the liquid side.

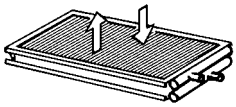
Materials and Surface Treatment
The QMXF consists of electro-galvanized steel tubes and fins made of sheet steel coated with zinc and aluminium to Weight Class AZ 150 as per ASTM A 525.
The headers and connections are made of steel and are painted with anti-corrosion paint. All the components that are part of the product conform to Corrosion Resistance Category C3 in accordance with ISO 12944.

Design Variants – Installation
The QMXF can be installed as follows:

Important! The variant for vertical airflow is available to special order.



For horizontal airflow



For vertical airflow

Accessories

QMAZ-01 Flange, (to DIN 2635) for connection to the pipework. The flange is made of steel and is welded to the coil connection, provided it is ordered at the same time as the coil.

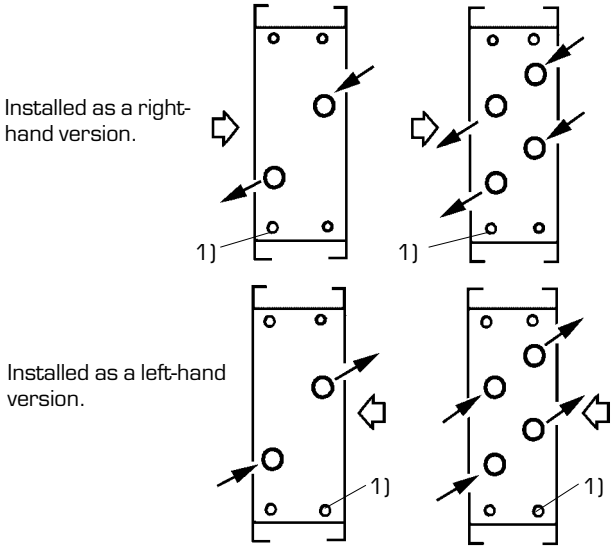
QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

Sizing
Use our product selection program Coils for sizing.
The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

Also material data, coil data and product codes

Installation
The coil can be installed either as a right-hand or a left-hand version to obtain a counter-flow connection mode.

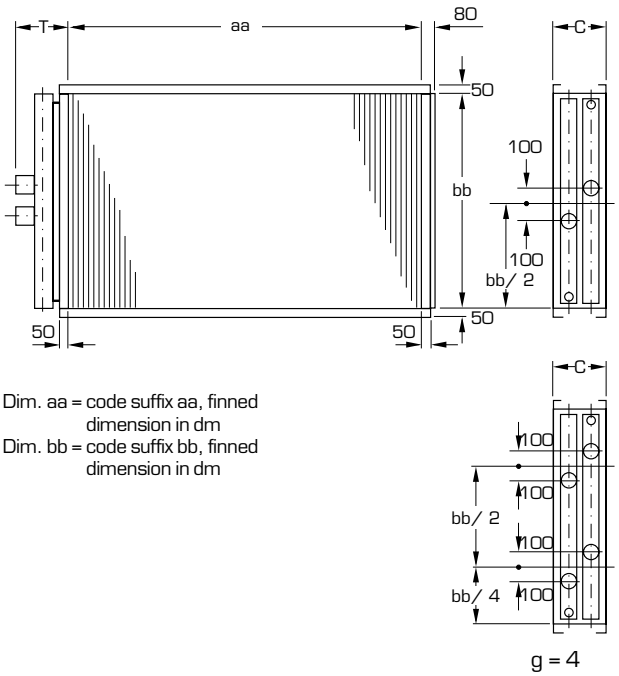


1) The sensor of an anti-freeze thermostat can be fitted to one of the connections for venting and drainage, in the return header.

Maintenance
Operating and maintenance instructions can be obtained from our product selection program Coils or from our website on the Internet.

QMXF – Coils for Liquids, steel/steel

Dimensions, Weights and Volumes



Dim. aa = code suffix aa, finned dimension in dm
Dim. bb = code suffix bb, finned dimension in dm

Coil Weights (excluding liquid) QMXF

d = 1, 2

c = 1 and 2: Weight, kg = $4 \cdot bb + 0{,}7 \cdot aa \cdot bb \cdot c + 1{,}6\,(aa + 1)$
c = 3 and 4: Weight, kg = $5{,}5 \cdot bb + 0{,}7 \cdot aa \cdot bb \cdot c + 2\,(aa + 1)$

d = 3, 4

c = 1 and 2: Weight, kg = $4 \cdot bb + 0{,}5 \cdot aa \cdot bb \cdot c + 1{,}6\,(aa + 1)$
c = 3 and 4: Weight, kg = $5{,}5 \cdot bb + 0{,}5 \cdot aa \cdot bb \cdot c + 2\,(aa + 1)$

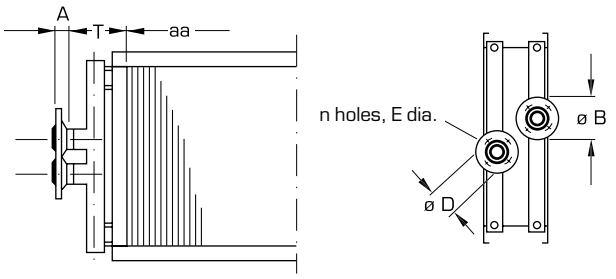
Coil Volume

d = 1, 2

c = 1 and 2: Volume, litre = $0{,}5 \cdot bb + 0{,}05 \cdot aa \cdot bb \cdot c$
c = 3 and 4: Volume, litre = $1{,}3 \cdot bb + 0{,}05 \cdot aa \cdot bb \cdot c$

QMAZ-01 Flange (welded to the connection)
QMAZ-02 Flange (delivered loose as a counterflange)

Weld-on flanges with collars to DIN 2635



Code suffix g	Nom Pipe size	A	B	D	n	T	E
1	32	42	140	100	4	210	18
2	50	48	165	125	4	235	18
3	80	58	200	160	8	275	18
4	2 x 80	58	200	160	8	275	18
5	100	67	235	190	8	295	22

Pipe Connections – Design

Code suffix g	Conn. No.	Nom. pipe size
1	32	R 1 1/4" BSP male thread
2	50	R 2"BSP male thread
3	80	Pipe for welded connection
4	2 x 80	Pipe for welded connection
5	100	Pipe for welded connection

Code suffix c	C
1	155
2	200
3	240
4	285
5	340
6	380
8	465

QMXF – Coils for Liquids, steel/steel

Environment
An Environmental and Building Product Declaration can be obtained from our product selection program Coils or from our website on the Internet.

Design Data
Table 1
The pressure figures refer to positive pressure.

Code suffix	Max.operating pressure,	Test pressure,	Max. permissible operating temp. Internal medium	External medium
h	MPa	MPa	°C	°C
4	1,6	2,1	225	225

Coils for higher pressures and temperature are available to special order.

Designed and produced n accordance with th Pressure Equipment Directive 9723 EG (PED).

Pipe Connections – Max. permissible liquid flow rate
Table 2

Code suffix g	Nom. Pipe size	permissible liquid flow l/s	m^3/h
1	32	2,8	10
2	50	7	25
3	80	14	50
4	2 x 80	28	100
5	100	23,5	85

Descriptive Text
Coiltech type QMXF finned-tube coil with headers made of steel, 3/4" electro-galvanized steel tubes and aluminium-zinc coated sheet steel fins. On the air side, the coil shall be provided with a casing made of galvanized sheet steel. The casing shall have connection flanges. The coil shall be equipped with plugged connections for venting and drainage.

Product Code
Coil for liquids **QMXF-d-4-aa-bb-c-1-ff-g**

Fin pitch **(d)**
2 = 2,5 mm
3 = 3,0 mm
4 = 4,0 mm

Design Class **(h=4)**
See Table 1

Finned dimension along tubes, dm **(aa)**

Finned dimension across tubes, dm **(bb)**

Number of tube rows **(c)**
1, 2, 3, 4

Number of liquid passes **(ff)**

Size of connections **(g)**
See Table 2

Accessories

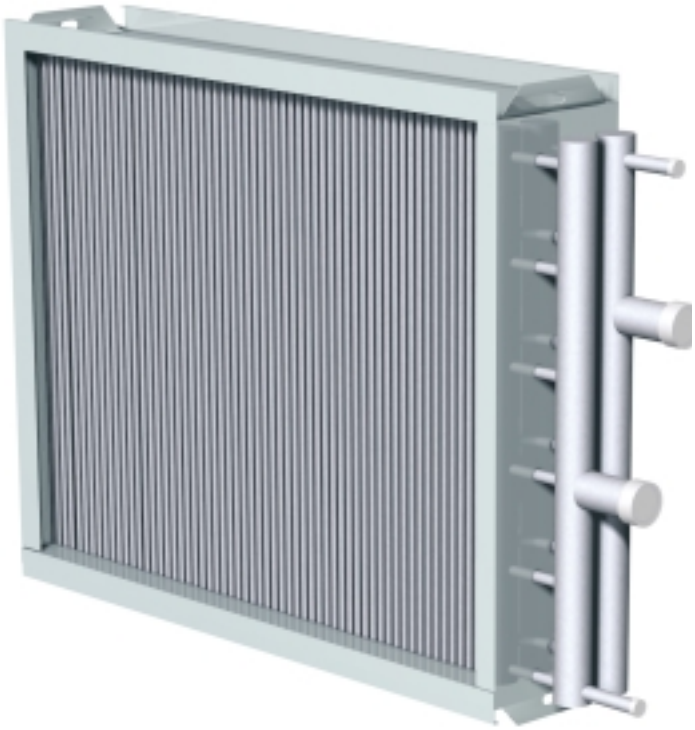
Flange for connection to pipework **QMAZ-01-g-1**

Connection size **(g)**
See Table 2

Counterflange **QMAZ-02-g-1**

Connection size **(g)**
See Table 2

QMXA – Coils for Liquids, galvanized steel



Coil made of hot dipped galvanized steel.

Design

The **QMXA** coils with 3/4" tubes are designed for:
– heating or cooling of air by means of water, oil or other liquid
– heating or cooling of water, oil or other liquid by means of air
– high temperature applications and for environments in which galvanized steel is necessary.

Features

The coils are available:
– with different fin pitches
– in sizes up to 6.0 x 2.4 m
– for horizontal or vertical air flow.

QMXA – Coils for Liquids, galvanized steel

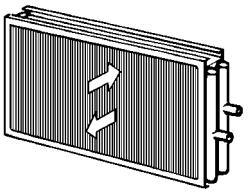
Design
The coil casing is made of 2 mm thick hot dipped galvanized sheet steel.To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes.

The DN 32 and DN 50 nom. pipe size connections are threaded, whereas pipe connections larger than DN 50 are designed for welding to the connecting pipework. Plugged connections are provided for venting and drainage.
Weld-on flanges to DIN 2635 can be supplied as accessories on the liquid side.

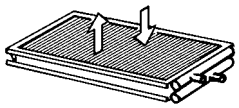
Materials and Surface Treatment
The coil has tubes, fins and casing made of hot dipped galvanized steel.
All the components that are part of the product conform to Corrosion Resistance Category C4 in accordance with ISO 12944.

Design Variants – Installation
The QMXA can be installed as follows:

Important! The variant for vertical airflow is available to special order.



For horizontal airflow



For vertical airflow

Accessories

QMAZ-01 Flange, (to DIN 2635) for connection to the pipework. The flange is made of steel and is welded to the coil connection, provided it is ordered at the same time as the coil.

QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

Sizing
Use our product selection program called Coils for sizing. The product selection program also provides dimensional drawings.

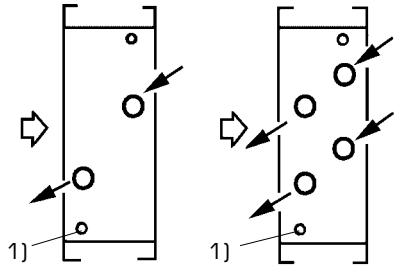
The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

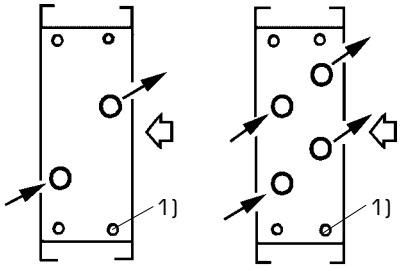
Also material data, coil data and product codes.

Installation
The coil can be installed either as a right-hand or a left-hand version to obtain a counter-flow connection mode.

Installed as a right-hand version.



Installed as a left-hand version.

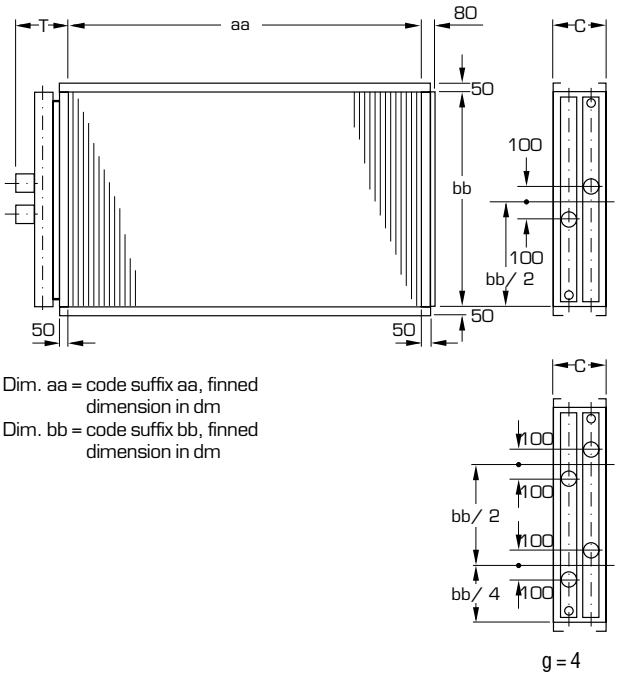


1) The sensor of an anti-freeze thermostat can be fitted to one of the connections for venting and drainage, in the return header.

Maintenance
Operating and maintenance instructions can be obtained from our product selection program Coils or from our website on the Internet.

QMXA – Coils for Liquids, galvanized steel

Dimensions, Weights and Volumes



Dim. aa = code suffix aa, finned dimension in dm
Dim. bb = code suffix bb, finned dimension in dm

Coil Weights (excluding liquid) QMXA

d = 4

$c = 1$ and 2: Weight, $kg = 4 \cdot bb + 0.6 \cdot aa \cdot bb \cdot c + 1.6\,(aa + 1)$

$c = 3$ and 4: Weight, $kg = 6.7 \cdot bb + 0.6 \cdot aa \cdot bb \cdot c + 2\,(aa + 1)$

d = 6

$c = 1$ and 2: Weight, $kg = 4 \cdot bb + 0.5 \cdot aa \cdot bb \cdot c + 1.6\,(aa + 1)$

$c = 3$ and 4: Weight, $kg = 6.7 \cdot bb + 0.5 \cdot aa \cdot bb \cdot c + 2\,(aa + 1)$

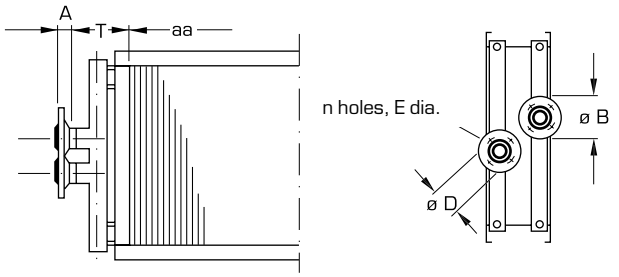
Coil Volume

$c = 1$ and 2: Volume, litre $= 0.5 \cdot bb + 0.05 \cdot aa \cdot bb \cdot c$

$c = 3$ and 4: Volume, litre $= 1.3 \cdot bb + 0.05 \cdot aa \cdot bb \cdot c$

QMAZ-01 Flange (welded to the connection)
QMAZ-02 Flange (delivered loose as a counterflange)

Weld-on flanges with collars to DIN 2635 (SMS 2035)



Code suffix g	Nom. Pipe size DN	A	B	D	n	T	E
1	32	42	140	100	4	210	18
2	50	48	165	125	4	235	18
3	80	58	200	160	8	275	18
4	2 x 80	58	200	160	8	275	18
5	100	67	235	190	8	295	22

Pipe Connections – Design

Code suffix g	Conn. No. DN	Nom. pipe size
1	32	R 1 1/4" BSP male thread
2	50	R 2"BSP male thread
3	80	Pipe for welded connection
4	2 x 80	Pipe for welded connection
5	100	Pipe for welded connection

Code suffix c	C
1	190
2	190
3	280
4	280
5	340
6	380

QMXA – Coils for Liquids, galvanized steel

Environment
An Environmental and Building Product Declaration can be obtained from our product selection program Coils or from our website on the Internet.

Design Data
Table 1

Code suffix h	Max. operating pressure MPa	Test pressure MPa	Max. permissible operating temp. Internal medium °C	External medium °C
4	1,6	2,1	225	225

The pressure figures refer to positive pressure.
Coils for higher pressures and temperature are available to special order.
Designed and produced in acordance with the Pressure Equipment Directive 9723 EG (PED).

Pipe Connections – Max. permissible liquid flow
Table 2

Code suffix g	Nom. Pipe size	Max. permissible liquid flow l/s	m^3/h
1	32	2,8	10
2	50	7	25
3	80	14	50
4	2 x 80	28	100
5	100	23,5	85

Descriptive Text
Coiltech Type QMXA coil with 3/4" tubes and fins made of hot dipped galvanized steel. On the air side, the coil shall be provided with a casing made of hot dipped galvanized sheet steel. The casing shall have connection flanges. The coil shall be equipped with plugged connections for venting and drainage.

Product Code
Coil for liquids **QMXA-d-4-aa-bb-c-1-ff-g**

Fin Pitch **(d)**
4 = 4,0 mm
5 = 5,0 mm
6 = 6,0 mm
8 = 8,0 mm

Design Class **(h=4)**
See Table 1

Finned dimension along tubes, dm **(aa)**

Finned dimension across tubes, dm **(bb)**

Number of tube rows **(c)**
1, 2, 3, 4, 5, 6

Number of liquid passes **(ff)**

Size of connections **(g)**
See table 2

Accessories
Flange for connection to pipework **QMAZ-01-g-1**

Connection size **(g)**
See Table 2

Counterflange **QMAZ-02-g-1**

Connection size **(g)**
See Table 2

QMAA – Coils for Steam, galvanized steel

Coil made of hot dipped galvanized steel

Design

The **QMAA** coils with 3/4″ tubes are designed for:
– heating of air by means of steam involving high temperatures and for environments in which hot dipped galvanized steel is necessary.

Features

The coils are available:
– with different fin pitches
– in sizes up to 4 x 2.0 m
– for horizontal air flow.

QMAA – Coils for Steam, galvanized steel

Design

The coil casing is made of 2 mm thick hot dipped galvanized sheet steel. To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes.

The QMAA is provided with connection pipe size DN 50 for welding to the connecting pipework.

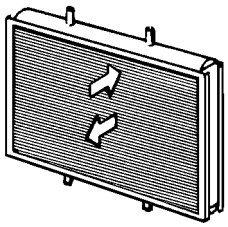
Weld-on flanges to DIN 2635 can be supplied as accessories on the steam or condensate side.
Supporting sections are available as accessories for mounting the coil on a horizontal surface.

Materials and Surface Treatment

The coil has tubes, fins and casing made of hot dipped galvanized steel.
All the components that are part of the product conform to Corrosion Resistance Category C4 in accordance with ISO 12944.

The QMAA can be installed as follows:

For horizontal airflow only



Accessories

QMAZ-01 Flange, (to DIN 2635) for connection to the pipework. The flange is made of steel and is welded to the coil connection, provided it is ordered at the same time as the coil.

QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

QMAZ-06 Supporting Sections
The QMAA coil can be equipped with supporting sections for moun ting it on a horizontal surface.
The supporting sections, which are made of hot dipped galvanized sheet steel, are delivered fitted to the coil

Sizing

Use our product selection program Coils for sizing.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

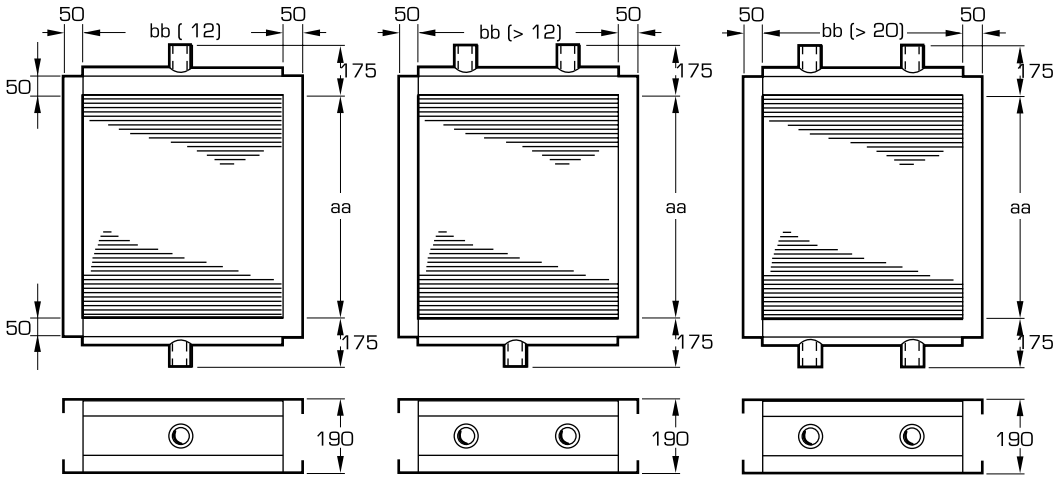
Also material data, coil data and product codes

Maintenance

Operating and maintenance instructions can be obtained from our product selection program Coils or from our website on the Internet.

QMAA – Coils for Steam, galvanized steel

Dimensions, Weights and Volumes, QMAA



Dim. aa = code suffix aa, finned dimension in dm
Dim. bb = code suffix bb, finned dimension in dm

Nom. pipe size DN 50.

Coil Weights (excluding liquid)

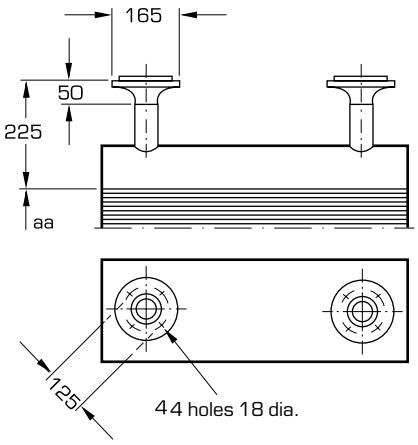
d = 4
c = 1 and 2: Weight, kg = $4 \cdot bb + 0.6 \cdot aa \cdot bb \cdot c + 1.6\ (aa + 1)$
d = 6
c = 1 and 2: Weight, kg = $4 \cdot bb + 0.5 \cdot aa \cdot bb \cdot c + 1.6\ (aa + 1)$

Coil Volume

c = 1 and 2: Volume, litre = $0.5 \cdot bb + 0.04 \cdot aa \cdot bb \cdot c$

QMAZ-01 Flange (welded to the connection)
QMAZ-02 Flange (delivered loose as a counterflange)

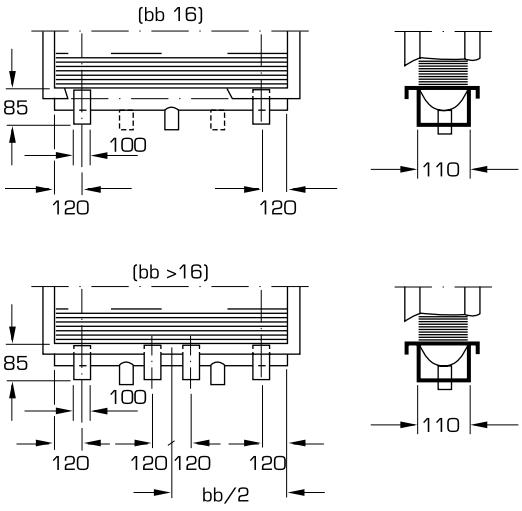
Weld-on flanges with collars to DIN 2635



Nom. pipe size DN 50
Weight: 2.8 kg

QMAZ-06 Supporting Sections

(supplied fitted to the coil)



QMAA – Coils for Steam, galvanized steel

Environment
An Environmental and Building Product Declaration can be obtained from our product selection program **Coils** or from our website on the Internet.

Design Data
The following Design Class is used as standard:

Table 1

Code suffix	Max. operating pressure,	Test , pressure	Max. permissible operating temp. Internal medium	External medium
h	MPa	MPa	°C	°C
4	1,6 0,9	2,3 1,3	205 300	205 300

The pressure figures refer to positive pressure.
Coils for higher pressures and temperature are available to special order.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Descriptive Text
Coiltech type QMAA coil with 3/4" tubes and fins made of hot dipped galvanized steel. On the air side, the coil shall be provided with a casing made of hot dipped galvanized sheet steel. The casing shall have connection flanges.

Product Code
Coil for steam **QMAA-d-4-aa-bb-c**

Fin pitch **(d)**
4 = 4,0 mm
5 = 5,0 mm
6 = 6,0 mm
8 = 8,0 mm

Design Class **(h=4)**
See Table 1

Finned dimension along tubes, dm **(aa)**

Finned dimension across tubes, dm **(bb)**

Number of tube rows **(c)**
1, 2

Accessories

Flange for connection to pipework **QMAZ-01-2-1**

Connection size **(2)**
DN 50

Counterflange **QMAZ-02-2-1**

Connection size **(2)**
DN 50

Supporting Sections **QMAZ-06-1-2**

QMAF – Coils for Steam, steel/steel

Coils with electro-galvanized steel tubes and aluminium-zinc coated sheet steel fins

Design

The **QMAF** coils with 3/4" tubes are designed for:
– heating of air by means of steam, in applications involving high temperatures.

Data

The coils is available:
– with different fin pitches
– in sizes up to 6 x 2.4 m
– for horizontal air flow.

QMAF – Coils for Steam, steel/steel

Design

The coil casing is made of 2 mm thick galvanized sheet steel. To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes.

The QMAF is equipped with pipe connections for nominal pipe size DN50, designed for welding to the connecting pipework.

Weld-on flanges to DIN 2635 can be supplied as accessories on the steam or condensate side. Supporting sections are available as an accessory for mounting the coil on a horizontal surface.

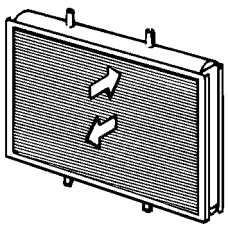
Materials and Finish

The QMAF consists of electro-galvanized steel tubes and fins made of sheet steel coated with zinc and aluminium to Weight Class AZ 150 as per ASTM A 525. The headers and connections are made of steel and are painted with anti-corrosion paint. The coil casing is made of galvanized sheet steel.
All the components of the product conform to Corrosion Resistance Category C3 in accordance with ISO 12944.

Design Variants – Installation

The QMXF can be installed as follows:

For horizontal airflow only



Accessories

QMAZ-01 Flange, (to DIN 2635) for connection to the pipework. The flange is made of steel and is welded to the coil connection, provided it is ordered at the same time as the coil.

QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

QMAZ-06 Supporting Sections
The QMAF coil can be equipped with supporting sections for mounting it on a horizontal surface. The supporting sections, which are made of hot dipped galvanized sheet steel, are delivered fitted to the coil.

Sizing

Use our product selection program Coils for sizing.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

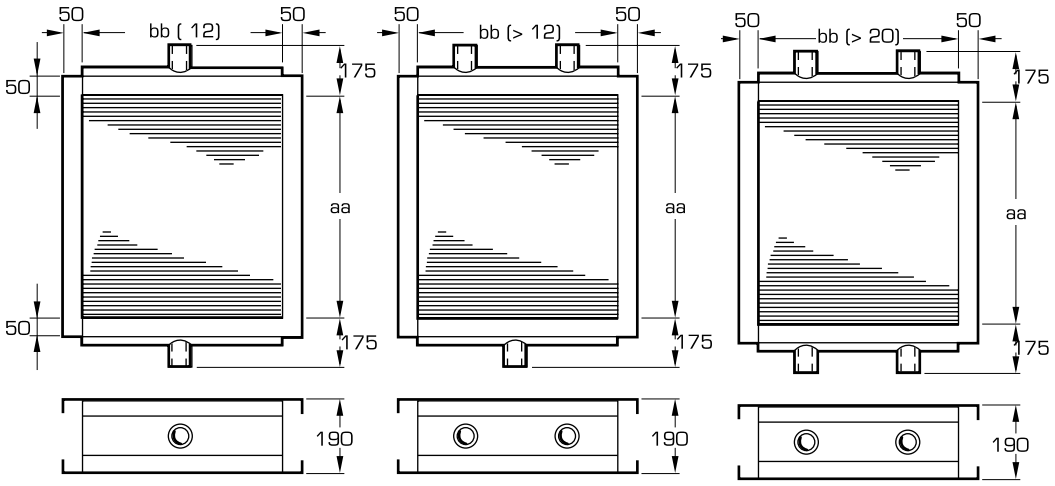
Also material data, coil data and product codes

Maintenance

Operating and maintenance instructions can be obtained from our product selection program **Coils** or from our website on the Internet.

QMAF – Coils for Steam, steel/steel

Dimensions, Weights and Volumes, QMAF



Nom. pipe size DN 50.

Coil Weights (excluding liquid)

d = 1, 2

c = 1 and 2: Weight, kg = 4 · bb + 0.7 · aa · bb · c + 1.6 (aa + 1)

d = 3, 4

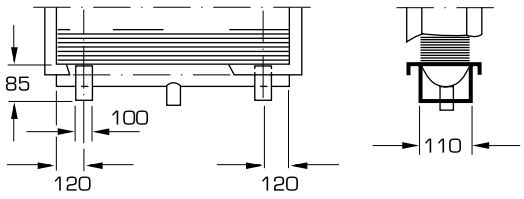
c = 1 and 2: Weight, kg = 4 · bb + 0.5 · aa · bb · c + 1.6 (aa + 1)

Coil Volume

c = 1 and 2: Volume, litre = 0.5 · bb + 0.05 · aa · bb · c

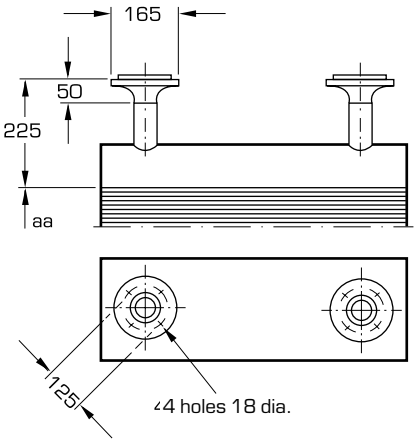
QMAZ-06 Supporting Sections

(supplied fitted to the coil)



QMAZ-01 Flange (welded to the connetion)
QMAZ-02 Flange (delivered loose as a counterflange)

Weld-on flanges with collars to DIN 2635



Nom. pipe size DN50
Weight: 2.8 kg

QMAF – Coils for Steam, steel/steel

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program **Coils** or from our website on the Internet.

Design Data

Table 1

Code suffix	Max. operating pressure,	Test pressure	Max. permissible operating temp. Internal medium	External medium
h	MPa	MPa	°C	°C
4	1,6 0,9	2,3 1,3	205 300	205 300

The pressure figures refer to positive pressure.
Coils for higher pressures and temperature are available to special order.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Descriptive Text

Coiltech type QMAF coil with headers made of steel, 3/4" tubes made of electro-galvanized steel and aluminium-zinc coated sheet steel fins. On the air side, the coil shall be provided with a casing made of electro-galvanized sheet steel. The casing shall have connection flanges.

Product Code

Coil for Steam **QMAF-d-4-aa-bb-c**

Fin pitch **(d)**
2 = 2,5 mm
3 = 3 mm
4 = 4 mm

Design Class **(h=4)**
See Table 1

Finned dimension along tubes, dm **(aa)**

Finned dimension across tubes, dm **(bb)**

Number of tube rows **(c)**
1, 2

Accessories

Flange for connection to pipework **QMAZ-01-2-1**

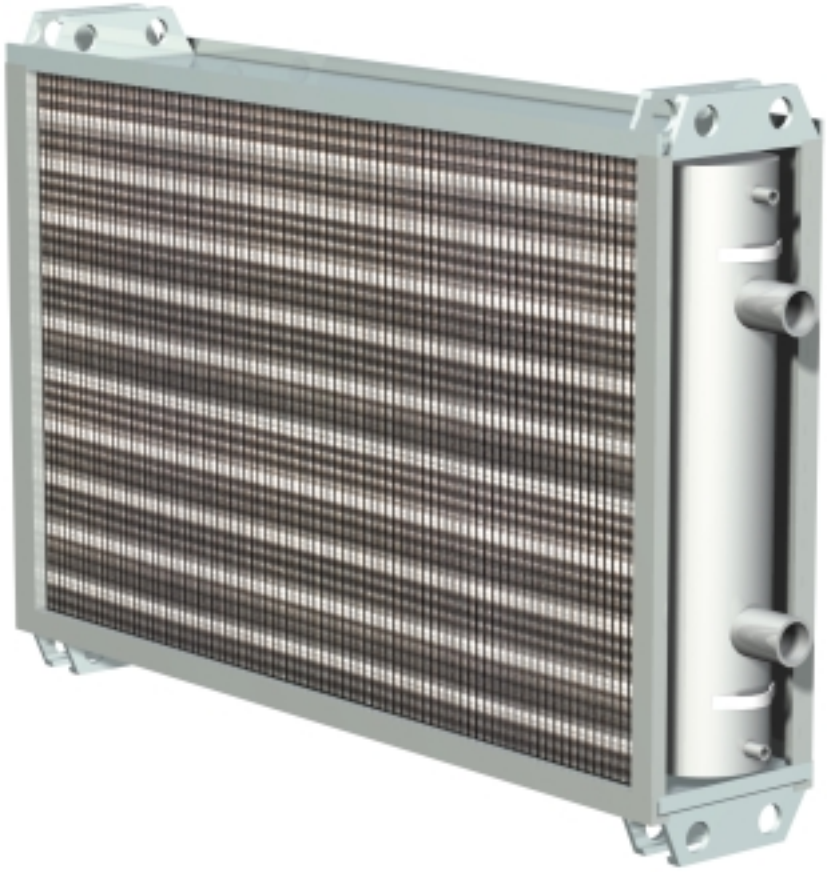
Connection size **(2)**
DN 50

Counterflange **QMAZ-02-2-1**

Connection size **(2)**
DN 50

Supporting Sections **QMAZ-06-1-2**

QLAK – Coils for Liquids/Steam, acid-proof steel/aluminium



QLAK Coil with tubes made of acid-proof steel (AISI 316) and aluminium fins

Design

QLAK coils with 1/2" tubes, are designed for:
– heating of air by means of steam, water, oil or other liquid.
– cooling of air by means of water or other liquid.
– cooling of water, oil or other liquid by means of air
– installations in which the medium on the inside of the tubes is corrosive.

Features

The coils are available:
– with different fin pitches
– for various pressure classes
– in sizes up to 6.0 x 2.4 m
– for horizontal or vertical air flow (liquid only).

QLAK – Coils for Liquids/Steam, acid-proof steel/aluminium

Design

The coil casing is made of 2 mm thick acid-proof sheet steel. To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes.

The coils designed for liquids have threaded connections for the nom. pipe sizes DN 32 and DN 50, whereas connections larger sizes than DN 50 are designed for welding to the connecting pipework. Plugged connections are provided for venting and drainage.

On the steam coils, the pipe connections for all pipe are designed for welding to the connecting pipework. A welding flange to DIN 2635 is available as an accessory.

Supporting sections are available as an accessory for steam coils which are to be mounted on a horizontal surface.

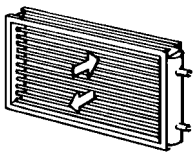
Materials and Surface Finish

The QLAK consists of aluminium fins and steel tubes, headers and connections on the liquid/steam side made of acid-proof steel (AISI 316). The casing is made of acid-proof steel (AISI 316).

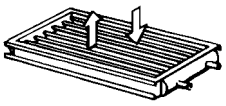
Design Variant – Installation

The QLAK is available in variants for liquids or steam and may be installed as follows:

Variant for liquids, code suffix e = 1
(1, 2, 3, 4 or 5 tube rows)



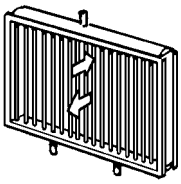
Horizontal airflow



Vertical airflow

Important! The variant for vertical airflow is available to special order.

Variant for steam, code suffix e = 2 (1, 2 or 4 tube rows)



For horizontal airflow only

Accessories

QMAZ-01 Flange, (to DIN 2635) for connection to the pipework. The flange is made of acid-proof steel (AISI 316) and is welded to the coil connection, provided it is ordered at the same time as the coil.

QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

QMAZ-06 Supporting Sections The coils for steam can be fitted with supporting sections for mounting on a horizontal surface. The supporting sections, 2 sections per coil, are supplied fitted to the coil.
Material acid-proof steel (AISI 316)

Sizing

Use our product selection program **Coils** for sizing.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

Also material data, coil data and product codes.

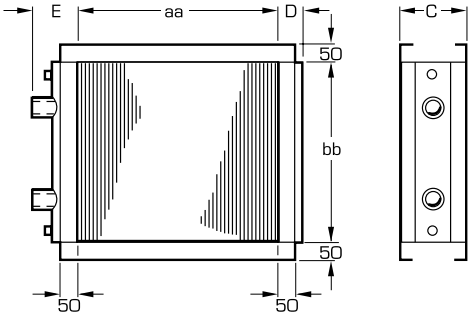
Maintenance

Operating and maintenance instructions can be obtained from our product selection program Coils or from our website on the Internet.

QLAK – Coils for Liquids/Steam, acid-proof steel/aluminium

Dimensions, Weights and Volumes

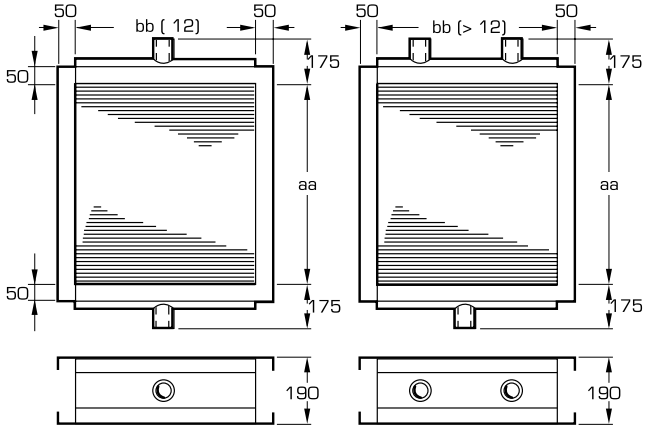
QLAK Coil, variant for liquids (code suffix e = 1)



Code suffix c	C	D	E
1 [1], 2 [1]	≈ 190	≈ 55	170
1 [2], 2 [2]	≈ 280	≈ 115	230
3, 4, 5	≈ 280	≈ 115	230

1) For liquid flows up to and including 7 l/s (25 m3/h)
2) For liquid flows in excess of 7 l/s (25 m3/h)

QLAK Coil, variant for steam (code suffix e = 2)



Dim. aa = code suffix aa, finned dimension in dm
Dim. bb = code suffix bb, finned dimension in dm

Coil Weights (excl. liquid) QLAK

d = 1, 2

c = 1 and 2: Weight, kg = $4 \cdot bb + 0.25 \cdot aa \cdot bb \cdot c + 1.6\,(aa + 1)$
c = 3 and 4: Weight, kg = $5.5 \cdot bb + 0.25 \cdot aa \cdot bb \cdot c + 2\,(aa + 1)$

d = 4

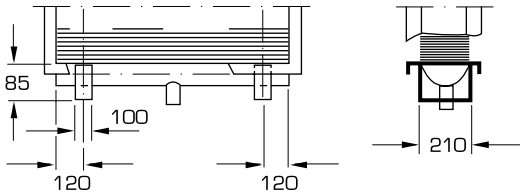
c = 1 and 2: Weight, kg = $4 \cdot bb + 0.15 \cdot aa \cdot bb \cdot c + 1.6\,(aa + 1)$
c = 3 and 4: Weight, kg = $5.5 \cdot bb + 0.15 \cdot aa \cdot bb \cdot c + 2\,(aa + 1)$

Coil Volume

c = 1 and 2: Volume, litre = $0.5 \cdot bb + 0.04 \cdot aa \cdot bb \cdot c$
c = 3 and 4: Volume, litre = $2.4 \cdot bb + 0.04 \cdot aa \cdot bb \cdot c$

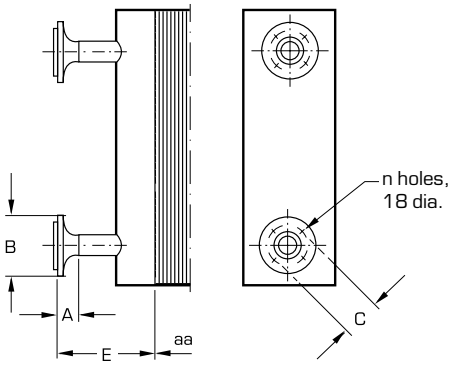
QMAZ-06 Supporting sections

(supplied fitted to the coil)



QMAZ-01 Flange (welded to the connection)
QMAZ-02 Flange (delivered loose as a counterflange)

Weld-on flanges with collars to DIN 2635 (SMS 2035)



Code suffix g	Nom. Pipe size DN	A	B	C	n	E Code suffix c = 1 [1], 2 [1]	E Code suffix c = 1 [2], 2 [2]	E Code suffix c = 3, 4	Weight, kg
1	32	42	140	100	4	≈ 220	–	≈ 275	1,9
2	50	48	165	125	4	≈ 225	–	≈ 280	2,8
3	80	58	200	160	8	–	≈ 290	≈ 290	4,8
5	100	65	235	190	8	–	–	≈ 295	6,5

1) For liquid flows up to and including 7 l/s (25 m3/h)
2) For liquid flows in excess of 7 l/s (25 m3/h)

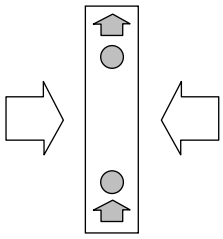
QLAK – Coils for Liquids/Steam, acid-proof steel/aluminium

Installation

Liquid coils (Code suffix e = 1)

Coils for liquids should be connected in accordance with the adjacent figure. Each coil is provided with a corresponding instruction label.

These coils can normally not be equipped with an anti-freeze sensor in the tubes. The anti-freeze sensor can possibly be fitted to the outside.



Steam coils (Code suffix e = 2)

Since the right-hand and left-hand versions of steam coils are the same, they are fitted with a label for steam (IN) and for the condensate (OUT) only.

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program Coils or from our website on the Internet.

Design Data

Table 1

Code suffix	Max. operating pressure	Test pressure	Max. permissible operating temp. Internal medium	External medium
h	MPa	MPa	°C	°C
2	1,0	1,4	150	120
4	1,6	2,3	150	120

The pressure figures refer to positive pressure.
The table is applicable to both liquids and steam.
Coils for higher pressures and temperature are available to special order.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Nom. Pipe Size – Max. Permissible Liquid Flow

Table 2a. Variant for liquids

Code suffix g	Nom. pipe size	Max. permissible liquid flow l/s	m^3/h
1	32	2,8	10
2	50	7	25
3	80	14	50
5	100	23,5	85

Table 2b. Variant for steam

Code suffix g	Nom. pipe size
2	50

Descriptive Text

Coiltech type QLAK coil with headers and 1/2" tubes made of acid-proof steel (AISI 316) and aluminium fins. On the air side, the coil shall be provided with a casing made of acid-proof sheet steel. The casing shall have connection flanges. The coil for liquids shall be equipped with plugged connections for venting and drainage.

Product Code

Coil **QLAK-d-h-aa-bb-c-e-ff-g**

Fin pitch **(d)**
0 = 1,8 mm
1 = 2 mm
2 = 2,5 mm
3 = 3 mm
4 = 4 mm
5 = 5 mm
6 = 6 mm

Design Class **(h)**
See Table 1

Finned dimension along tubes, dm **(aa)**

Finned dimension across tubes, dm **(bb)**

Number of tube rows **(c)**
1, 2, 3, 4, 5
(steam: 1, 2 and 4 only)

Design Variant **(e)**
1 = for liquids
2 = for steam

Number of liquid passes **(ff)**
For steam, specify 01

Size of connections **(g)**
See table 2

Accessories

Flange for connection to pipework **QMAZ-01-g-5**

Connection size **(g)**
See Table 2

Counterflange **QMAZ-02-g-5**

Connection size **(g)**
See table 2

Supporting Sections **QMAZ-06-1-5**
(Only applicable to e = 2, steam)

QSAA – Coils for Liquids/Steam, finless, galvanized steel

Plain tube coil made of hot dipped galvanized steel

Design

The **QSAA** coils with 3/4" tubes are designed for:
– heating of air or other gas by means of steam, water, oil or other liquid
– heating of water, oil or other liquid by means of air or other gas
– installations in which the medium on the outside of the tubes contains dust.

Features

The coils are available:
– for various pressure classes
– in sizes up to 8 x 2.0 m
– for horizontal or vertical (liquid only) gas flow.

QSAA – Coils for Liquids/Steam, finless, galvanized steel

Design

The coil has tubes made of hot dipped galvanized steel. As standard, the coil is mounted in a casing made of 2 mm thick hot dipped galvanized sheet steel. To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes.
The QSAA coils designed for liquids have threaded connections for the nom. pipe sizes DN 32 and DN 50, whereas connections larger sizes than DN 50 are designed for welding to the connecting pipework. Plugged connections are provided for venting and drainage.
On the steam coils, the pipe connections for all nom. pipe sizes are designed for welding to the connecting pipework.
A welding flange to DIN 2635 is available as an accessory. Supporting sections are available as an accessory for steam coils which are to be mounted on a horizontal surface.

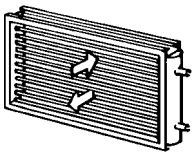
Materials and Surface Finish

The coil has tubes made of hot dipped galvanized steel.
The casing is made of hot dipped galvanized sheet steel.
All the components of the product conform to Corrosion Resistance Category C4 in accordance with ISO 12944.

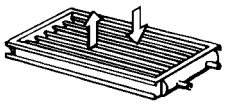
Design Variant – Installation

The QSAA is available in variants for liquid or steam and may be installed as follows:

Variant for liquids, code suffix e = 1



Horizontal airflow

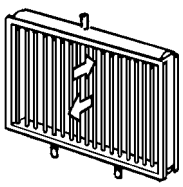


Vertical airflow

Important! The variant for vertical airflow is available to special order.

Variant for steam, code suffix e = 2

For horizontal airflow only



Accessories

(to be specified separately)

QMAZ-01 Flange, (to DIN 2635) for connection to the pipework. The flange is made of steel and is welded to the coil connection, provided it is ordered at the same time as the coil.

QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

QMAZ-06 Supporting Sections
The QSAA coils for steam can be fitted with supporting sections for mounting on a horizontal surface. The supporting sections, 2 sections per coil, are supplied fitted to the coil.

Sizing

Use our product selection program Coils for sizing.
The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

Also material data, coil data and product codes.

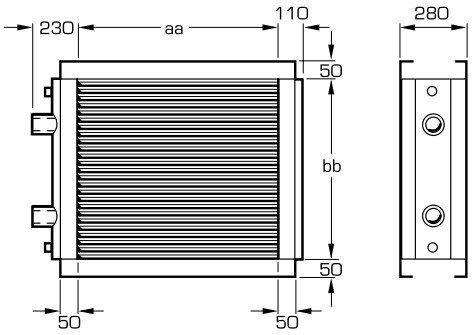
Maintenance

Operating and maintenance instructions can be obtained from our product selection program Coils or from our website on the Internet.

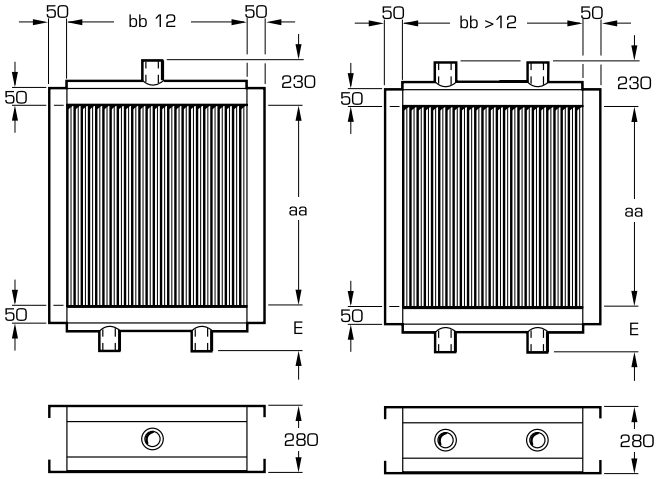
QSAA – Coils for Liquids/Steam, finless, galvanized steel

Dimensions, Weights and Volumes

QSAA Coil,variant for liquids (code suffix e = 1)



QSAA Coil, variant for steam (code suffix e = 2)



Dim. aa = code suffix aa, finned dimension in dm
Dim. bb = code suffix bb, finned dimension in dm

Coil Weights (excl. liquid) QSAA

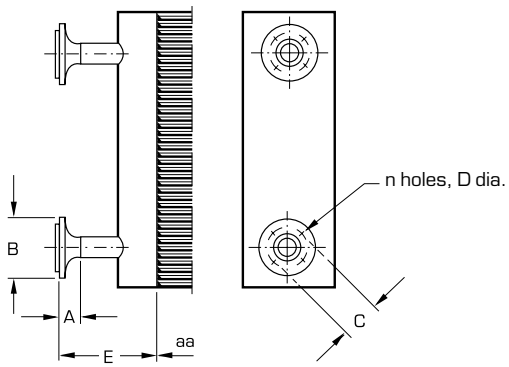
Weight, kg = 10 bb + aa · bb + 2 aa

Coil Volume

Volume, litre = 2.4 · bb + 0.24 · aa · bb

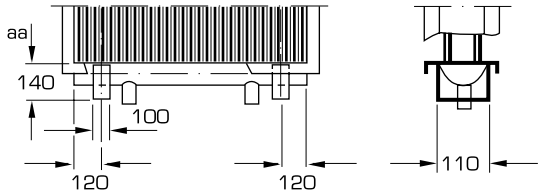
QMAZ-01 Flange (welded to the connection)
QMAZ-02 Flange (delivered loose as a counterflange)

Weld-on flanges with collars to DIN 2635



QMAZ-06 Supporting sections

(supplied fitted to the coil))

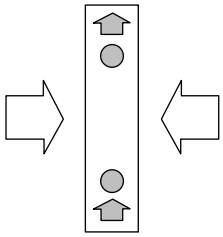


Code suffix g	Nom. Pipe size DN	A	B	C	D	n	E Code suffix c = 6	Weight, kg
1	32	42	140	100	18	4	≈ 280	1,9
2	50	48	165	125	18	4	≈ 285	2,8
3	80	58	200	160	18	8	≈ 295	4,8
5	100	65	235	190	22	8	≈ 300	6,5

QSAA – Coils for Liquids/Steam, finless, galvanized steel

Installation

Liquid medium coils (Code suffix e = 1)



Coils for liquids should be connected in accordance with the adjacent figure. Each coil is provided with a corresponding instruction label.
These coils can normally not be equipped with an anti-freeze sensor in the finned tubes. The anti-freeze sensor can possibly be fitted to the outside.

Steam coils (Code suffix e = 2)

Since the right-hand and left-hand versions of steam coils are the same, they are fitted with a label for steam (IN) and for the condensate (OUT) only.

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program called Coils or from our website on the Internet.

Design Data

Table 1
Coils for higher pressures and temperature are avail-

Code suffix h	Max. operating pressure MPa	Test pressure MPa	Max. permissible operating temp. Internal medium, °C	External medium, °C
4	1,6	2,3	205	205
	0,9	1,3	300	300

able to special order.
The tables are applicable to both liquids and steam.
Designed and produced in accordane with the Pressure Equipment Directive 9723 EG (PED).

Nom. Pipe Size – Max. Permissible Liquid Flow

Table 2a. Variant for liquids.

Code suffix g	Nom. pipe size DN	Max. permissible liquid flow l/s	m^3/h
1	32	2,8	10
2	50	7	25
3	80	14	50
5	100	23,5	85

Table 2b. Variant for steam

Code suffix g	Nom. pipe size, steam (in)	Nom. pipe size, cond. (out)
2	50	2 x 32
3	80	2 x 50

Descriptive Text

Coiltech type QSAA Plain tube coil with 3/4″ tubes made of hot dipped galvanized steel mounted in a casing with connection flange. The coil for liquid shall be provided with plugged connections for venting and drainage.

Product Code

Coil **QSAA-0-4-aa-bb-c-e-ff-g**

Code suffix **(0)**
d = 0

Design Class **(4)**
See Table 1

Finned dimension along tubes, dm **(aa)**

Finned dimension across tubes, dm **(bb)**

Number of tube rows **(c)**
6 only

Design Variant **(e)**
1 = for liquids
2 = for steam

Number of liquid passes **(ff)**
For steam, specify 01

Size of connections **(g)**
See table 2

Accessories

Flange for connection to pipework **QMAZ-01-g-1**

Connection size **(g)**
See table 2

Counterflange **QMAZ-02-g-1**

Connection size **(g)**
See table 2

Supporting Sections **QMAZ-06-2-2**
(Only applicable to e = 2, steam)

QSAK – Coils for Liquids/Steam, finless, acid-proof steel

Plain tube coils made of acid-proof steel AISI 316.

Design

The **QSAK** coils with 3/4" tubes are designed for:
– heating of air or other gas by means of steam, water, oil or other liquid
– heating of water, oil or other liquid by means of air or other gas
– installations in which the medium on the outside of the tubes contains dust and in which the medium inside and/or on the outside of the tubes is corrosive.
– installations in which the medium inside and/or on the outside of the tubes has high temperature.

Features

The coils are available:
– for various pressure classes
– in sizes up to 8 x 2.4 m
– for horizontal and vertical gas flow.

QSAK – Coils for Liquids/Steam, finless, acid-proof steel

Design

The coil has tubes and headers made of acid-proof steel (AISI 316). As standard, the coil is mounted in a casing made of 2 mm thick acid-proof sheet steel (AISI 316). To special order, the connection flanges of the casing can be provided with 15 x 24 mm mounting holes. Plugged connections are provided for venting and drainage (for liquid only).

The coils designed for liquids have threaded connections for the nom. pipe sizes DN 32 and DN 50, whereas connections larger sizes than DN 50 are designed for welding to the connecting pipework.
On the steam coils, the pipe connections for all nom. pipe sizes are designed for welding to the connecting pipework.
A welding flange to DIN 2635 is available as an accessory.

Supporting sections are available as an accessory for steam coils which are to be mounted on a horizontal surface.

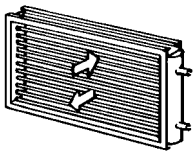
Materials and Surface Finish

The QSAK is made completely of acid-proof steel (AISI 316).

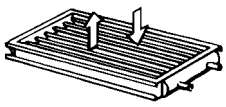
Design Variant – Installation

The QSAK is available in variants for liquid or steam and may be installed as follows:

Variant for liquids, code suffix e = 1



Horizontal airflow

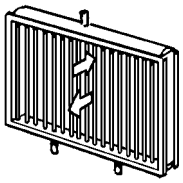


Vertical airflow

Important! The variant for vertical airflow is available to special order.

Variant for steam, code suffix e = 2

For horizontal airflow only



Accessories

QMAZ-01 Flange, (to DIN 2635 or Swedish Standard SMS 2035) for connection to the pipework. The flange is made of acid-proof steel (AISI 316). and is welded to the coil connection, provided it is ordered at the same time as the coil.

QMAZ-02 Counterflange is identical to the QMAZ-01, but is supplied as a separate item.

QMAZ-06 Supporting Sections
The QSAK coils for steam can be fitted with supporting sections for mounting on a horizontal surface. The supporting sections, 2 sections per coil, are supplied fitted to the coil. Material acid-proof steel (AISI 316).

Sizing

Use our product selection program **Coils** for sizing.

The program provides the following data:

Air side:	Outlet air temperature	°C
	Output	kW
	Air velocity	m/s
	Air pressure drop	Pa
Water side:	Return temperature	°C
	Liquid flow	l/s
	Liquid velocity	m/s
	Liquid pressure drop	kPa

Also material data, coil data and product codes.

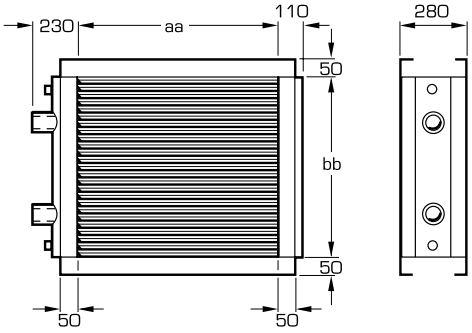
Maintenance

Operating and maintenance instructions can be obtained from our product selection program **Coils** or from our website on the Internet.

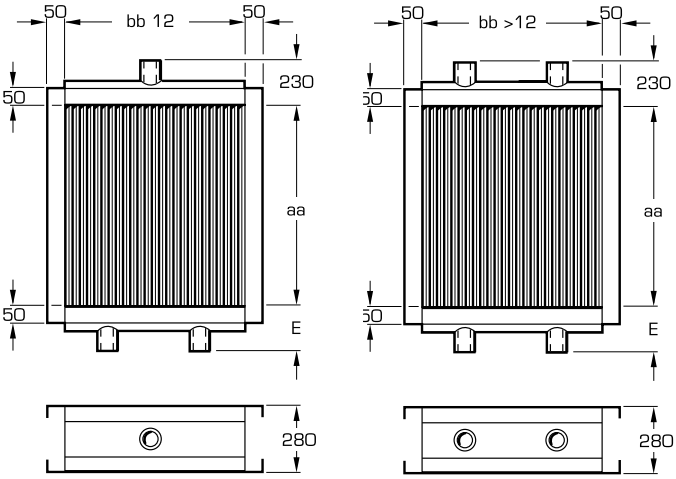
QSAK – Coils for Liquids/Steam, finless, acid-proof steel

Dimensions, Weights and Volumes

QSAK Coil, variant for liquids (code suffix e = 1)



QSAK Coil, variant for steam (code suffix e = 2)



Dim. aa = code suffix aa, finned dimension in dm
Dim. bb = code suffix bb, finned dimension in dm

Coil Weights (excl. liquid) QSAK

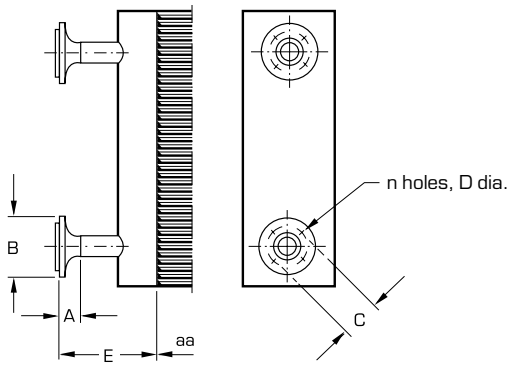
Weight, kg = 9 bb + 0.6 aa · bb + 2 aa

Coil Volume

Volume, litre = 2.4 · bb + 0.30 · aa · bb

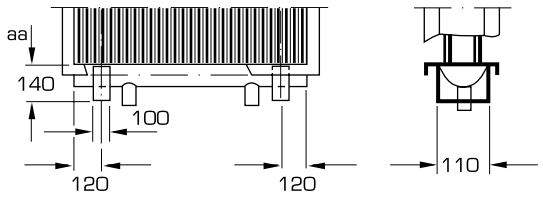
QMAZ-01 Flange (welded to the connection)
QMAZ-02 Flange (delivered loose as a counterflange)

Weld-on flanges with collars to DIN 2635



QMAZ-06 Supporting sections

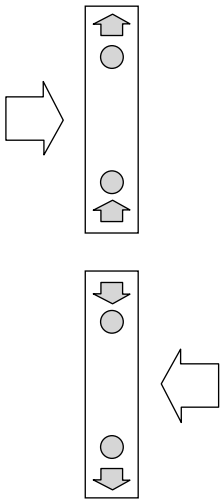
(supplied fitted to the coil)



Code suffix	Nom. Pipe size DN	A	B	C kod	D	n c = 6	E Code suffix g	Weight, kg
1	32	42	140	100	18	4	≈ 275	1,9
2	50	48	165	125	18	4	≈ 280	2,8
3	80	58	200	160	18	8	≈ 290	4,8
5	100	65	235	190	22	8	≈ 295	6,5

QSAK – Coils for Liquids/Steam, finless, acid-proof steel

Installation



Liquid coils (Code suffix e = 1)

Coils for liquids should be connected in accordance with the adjacent figure. Each coil is provided with a corresponding instruction label.
These coils can normally not be equipped with an anti-freeze sensor in the finned tubes. The anti-freeze sensor can possibly be fitted to the outside.

Steam coils (Code suffix e = 2))

Since the right-hand and left-hand versions of steam coils are the same, they are fitted with a label for steam (IN) and for the condensate (OUT) only .

Environment

An Environmental and Building Product Declaration can be obtained from our product selection program Coils or from our website on the Internet.

Design Data

Table 1

Code suffix h	Max. operating pressure, MPa	Test pressure MPa	Max.permissible operating temp. Internal medium °C	External medium °C
2	1,0	1,4	205	205
4	1,3 1,6	1,9 2,3	300 275	300 275

Coils for higher pressures and temperature are available to special order.
The tables are applicable to both liquids and steam.
Designed and produced in accordance with the Pressure Equipment Directive 9723 EG (PED).

Table 2a. Variant for liquids

Code suffix g	Nom. pipe size, DN	Max. permissible liquid flow l/s	m^3/h
1	32	2,8	10
2	50	7	25
3	80	14	50
5	100	23,5	85

Nom. Pipe Size – Max. Permissible Liquid Flow

Table 2b. Variant for steam

Code suffix g	Nom. pipe size, steam (in)	Nom. pipe size, cond. (out)
2	50	2 x 32
3	80	2 x 50

Descriptive Text

Coiltech type QSAK Plain tube coil with 3/4" tubes and headers made of acid-proof steel (AISI 316), mounted in a casing made of the same material and with connection flanges. The coil for liquid shall be provided with plugged connections for venting and drainage.

Product Code

Coil **QSAK-0-h-aa-bb-c-e-ff-g**

Code suffix **(0)**
d = 0

Design Class **(h)**
See Table 1

Side parallel to finned tubes, dm **(aa)**

Side perpendicular to finned tubes, dm **(bb)**

Number of tube rows **(c)**
6 only

Design Variant **(e)**
1 = for liquids
2 = for steam

Number of liquid passes **(ff)**
For steam, specify 01

Size of connections **(g)**
See table 2

Accessories

Flange for connection to pipework **QMAZ-01-g-5**

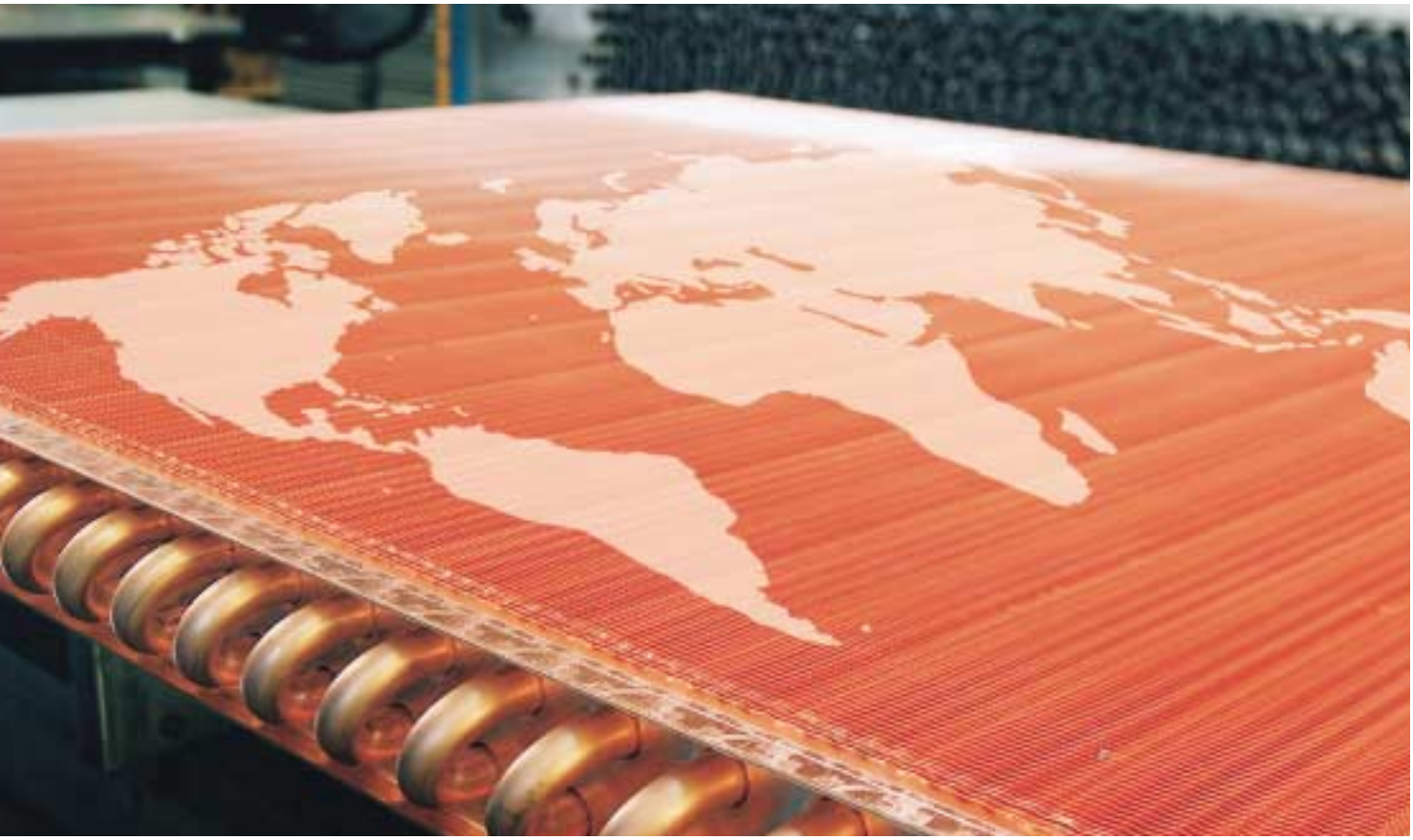
Connection size **(g)**
See table 2

Counterflange **QMAZ-02-g-5**

Connection size **(g)**
See table 2

Supporting Sections **QMAZ-06-2-5**
(Only applicable to e = 2, steam)

Heat exchangers for the whole world



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