



4D COILS LIMITED

Heat Transfer Specialists

HEAT EXCHANGERS

**Quality, Reliability
& Innovation**

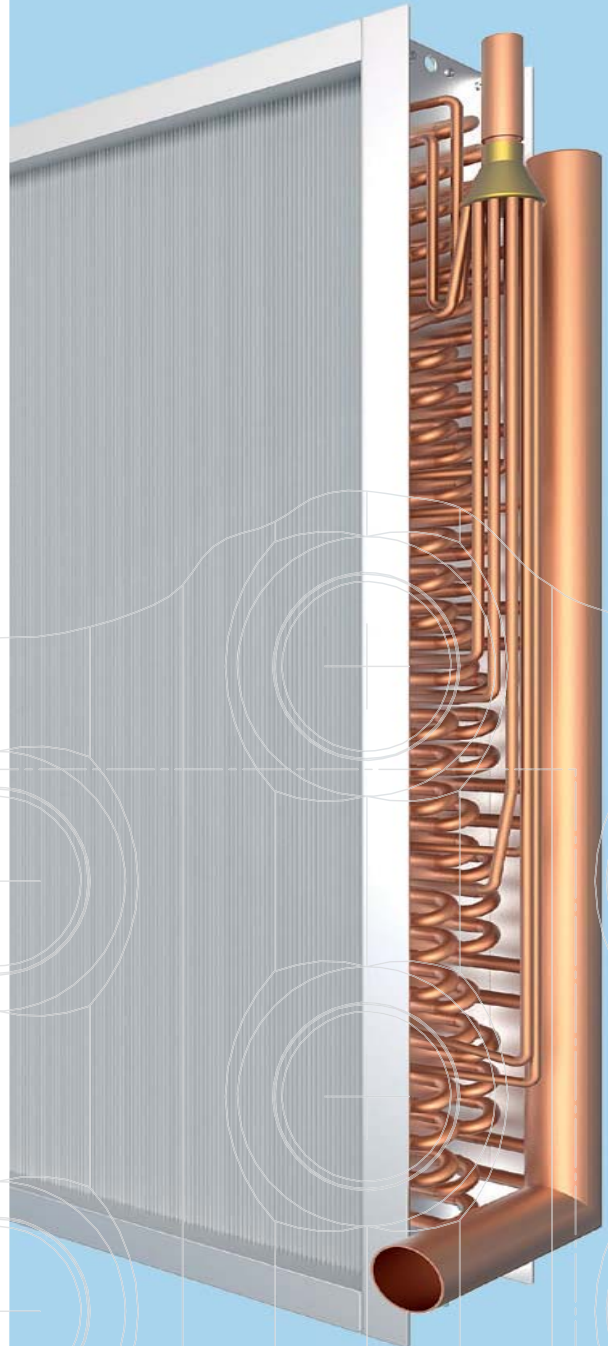
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COMPLETE SOLUTIONS

Maximum flexibility, from single coils to batch supply

With over 50 years experience within the HVAC Refrigeration & Heat Exchange industries, 4D Coils can assist with your coil requirements, from a straight forward replacement to specialised designs.



Maximum flexibility

In-House Design

Qualified Personnel



Experienced Service Engineers

Reliability

Advanced Machinery & Equipment

Quality



Product

We operate a 100% testing program meaning that we test each one of our products prior to despatch. Leak detection tests from 18 to 65 bar, as per PED specifications & Certifications in accordance with PED 97/23 CE, Eurovent & AHRI 410



System

Absolute quality is a fundamental part of our company & every stage from design, production and quality procedures are in compliance with ISO:9001 Certification Standards



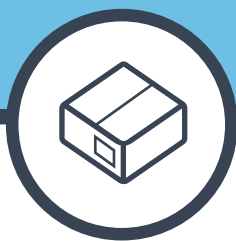
Coil selections & calculations made quick & easy ...

4D Coils proprietary software for thermodynamic calculations has been developed and is continually updated for maximum ease of use, this ideal tool allows quick and simple calculations for all products of the 4D range; evaporators, condensers and water coils



EQUIPMENT SELECTION

After receiving your enquiry with your specifications, our applications department will make the selection & supply you with a detailed quotation and product specification so that you may place your order.



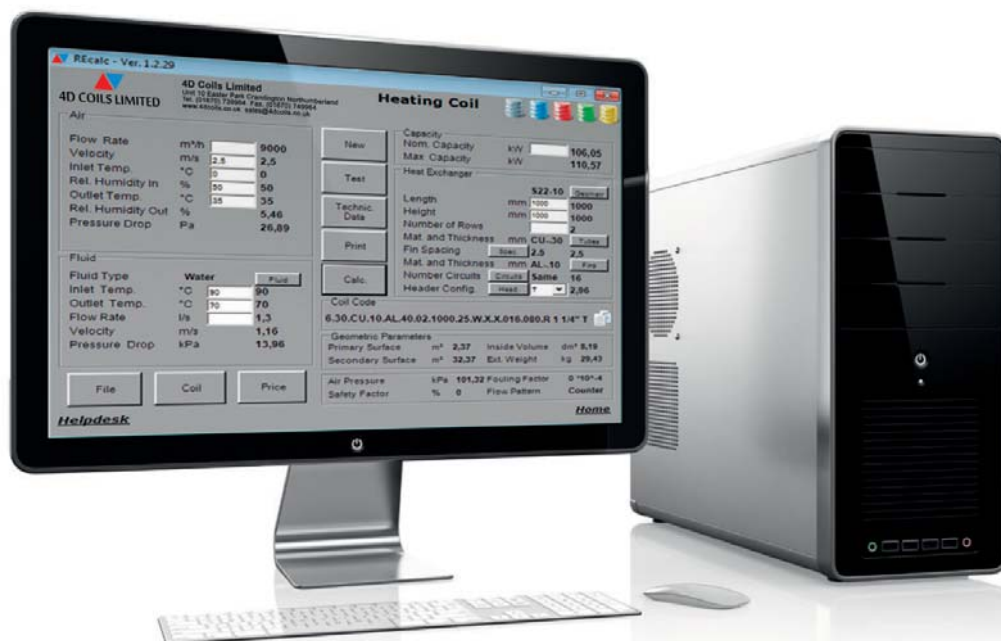
ORDER PROCESS

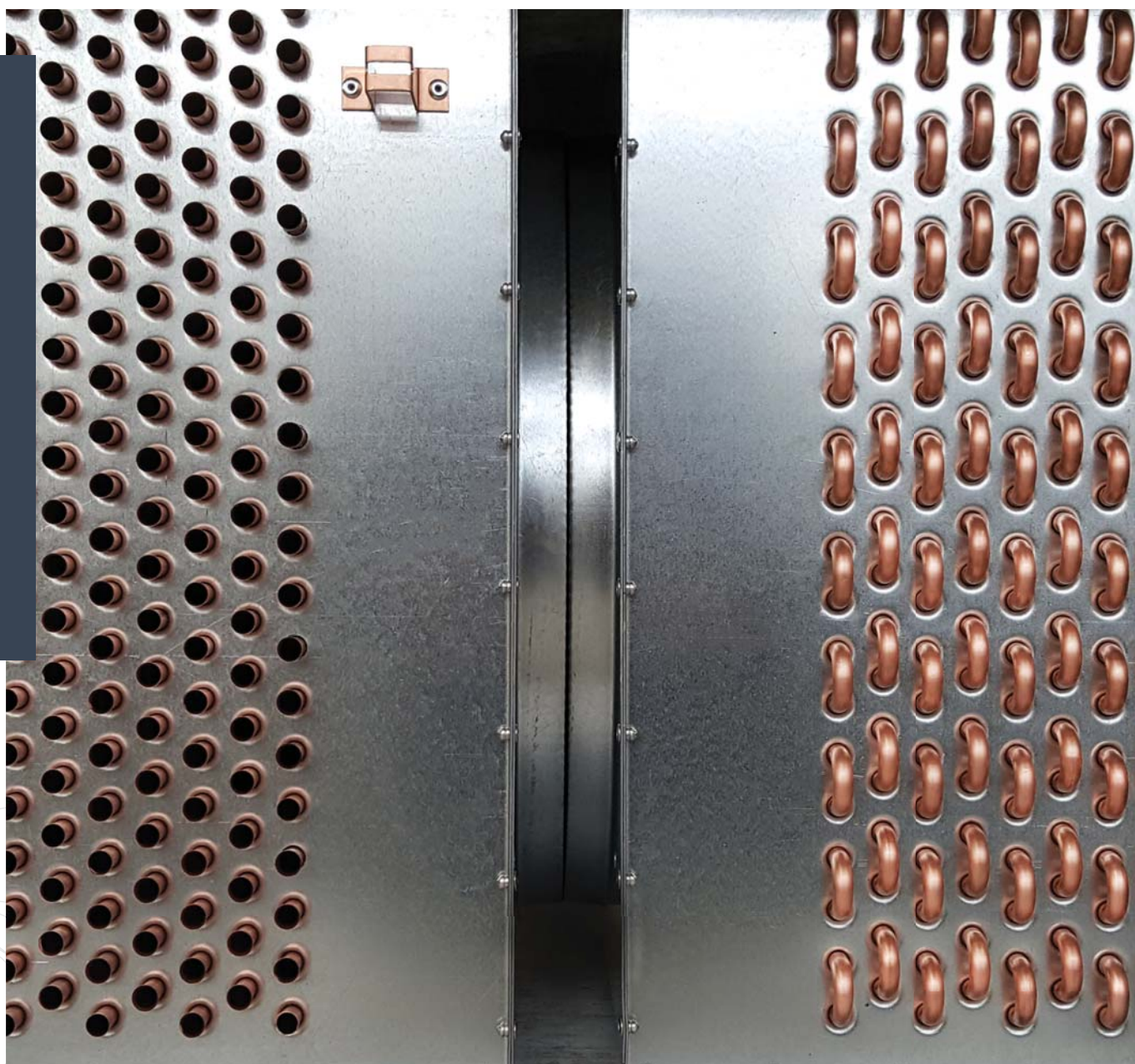
After receiving your order fully detailed drawings will be sent for your approval. Upon completion of manufacture we carefully package the coils to prevent from any transit damage, so it arrives in the same condition that it left us.



DELIVERY

We deliver anywhere within the UK and Ireland. For export enquiries please call us with your requirements so that we can factor in any export packing or crating that may be needed.





Heat Exchanger Coils

Three geometries available

Maximum construction flexibility

Suitable for all existing refrigerants

Protective surface treatments

100% product inspection

Reliable production & deliveries

With 3 diameters available in 3 geometries **S22-7**, **S22-8** and **S22-10** 4D Coils Limited can optimize heat exchangers for your specific application. The 4D range effectively meets every heat exchange requirement; water coils, evaporators, and condensers.

TECHINICAL & FEATURES

Our product range meets all your heat exchange needs

FINNED PACK

The finned pack consists of drawn tubes mechanically expanded into fins provided with self-spaced collars. This ensures optimal heat exchange between tubes and fins, and regular spacing between fins.

FINS

Created by high precision molding of aluminium, pre-painted aluminium, hydrophilic aluminium, and copper strips. The manufactured fins are corrugated so as to improve the secondary heat transfer coefficient without heavily affecting the air pressure drops. Furthermore, this type of structure allows for condensate drainage and prevents dirt from obstructing the finned pack. Also available are high precision molded louvered fins, the structure of which increases heat exchange efficiency.

HEADERS

Headers are made of carbon steel or copper drawn tubes. The header collects all of the coil's parallel circuits into one tube that will be connected to the main circuit of the equipment.

REFRIGERANTS

In light of its long-standing commitment to product improvement and sustainability, 4D Coils Limited uses materials that are compatible with new generation refrigerants, which ensure lower environmental impact and excellent performance.

TUBES

4D heat exchangers are manufactured with high quality tubes, which can be smooth or internally grooved on all available diameters:

7 mm, 5/16" (7.94mm) and 3/8" (9.54 mm)

The tubes are resistant to the vast majority of primary fluids, in heating and cooling applications alike.

FRAME

The frame can be of galvanized steel, aluminium, copper, brass, or stainless steel, and is manufactured through a process of punching and deep drawing. The frame protects the finned pack and fastens the heat exchanger to the rest of the system.

DISTRIBUTORS

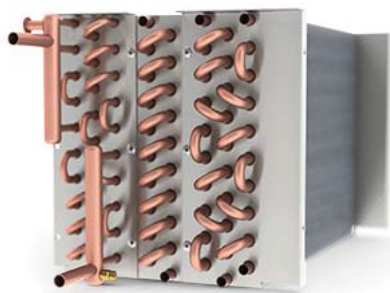
4D offers brass Venturi-type distributors. Along with the brazed copper capillary tubes, these distributors optimize coolant distribution in the parallel circuits of evaporators.

QUALITY ASSURANCE

We inspect for proper mechanical expansion of tubes into the fins; brazing of bends, connections & headers in an inert atmosphere; final pressure leak test in a water bath. During final inspection, the coil is checked against the customer's specifications to ascertain its compliance.

FLEXIBILITY

4D Coils are Highly Customisable to suit your specifications



FRAME & HEADER OPTIONS

HEADERS; Choice of materials & diameters
HIGHLY CUSTOMIZABLE FRAME;

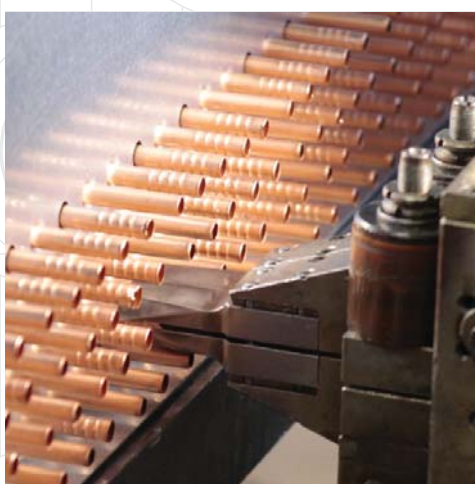
Fe Zn

Al

Aisi

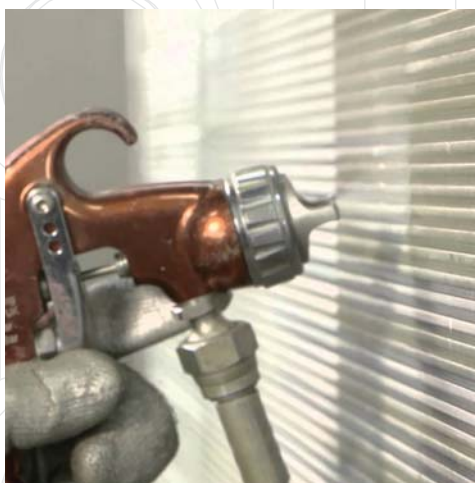
Cu Zn

Cu



FIN & TUBE OPTIONS

Fin configuration options;
Materials (copper, aluminium)
Multiple geometries
Special treatments (hydrophilic, prepainted)
Tube configuration options
Materials (copper, aluminium)



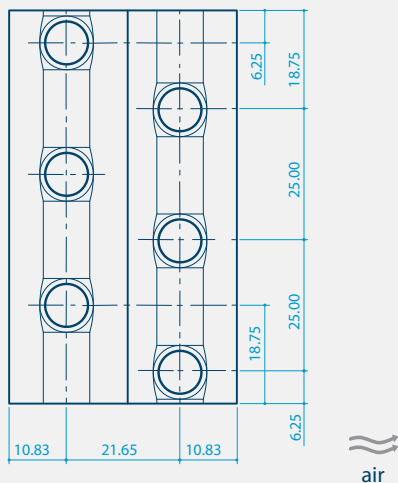
SURFACE TREATMENTS

Protective surface treatment options include;
Epoxy or epoxy polyester coatings
Hydrophilic
Non-toxic and antimicrobial coatings
Tinplating
Blygold treatment
Heresite treatment

COIL GEOMETRIES

4D Coils are available with the following configurations

S22-7

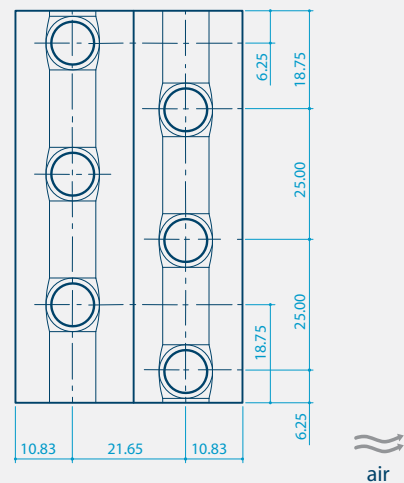


7 mm tubes, in the staggered geometry 25.00 x 21.65 mm with corrugated fins. Ideal solution for small condensers & heat exchangers requiring lower internal volumes.

Ø 7 mm

Geometry 25.00 x 21.65

S22-8



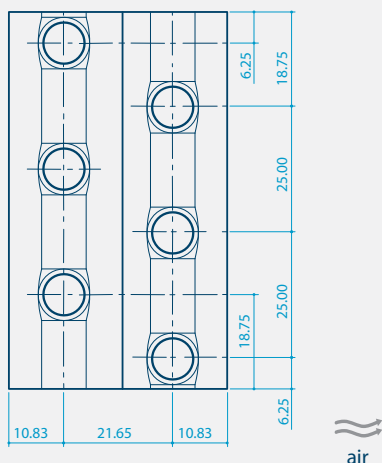
5/16" tubes in the staggered geometry 25.00 x 21.65 mm with corrugated & louvered fins. Ideal solution for small condensers with capacities upto 12 kW, fan coils, & air heaters.

Ø 7.94 mm

5/16"

Geometry 25.00 x 21.65

S22-10



With 3/8" (9.52 mm) tubes, in the staggered geometry 25.00 x 21.65 mm with corrugated and louvered fins, an ideal solution for medium sized condensers and fan coils.

Ø 9.52 mm

3/8"

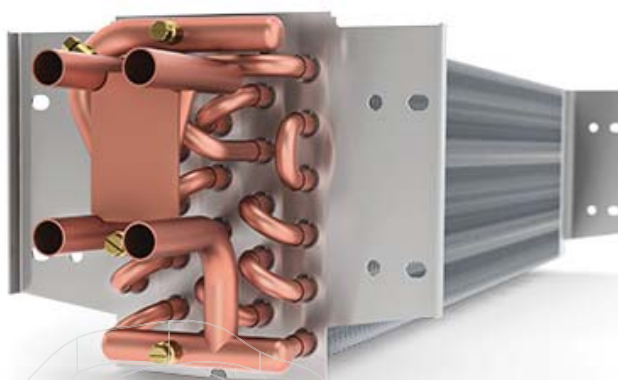
Geometry 25.00 x 21.65



CONFIGURATIONS

Coil Specifications

The key components of heat exchange; focusing upon 3 diameters available with 3 geometries, we can optimize heat exchangers for any specific application. The 4D range effectively meets every heat exchange requirement: water and oil coils, evaporators, and condensers.



Materials of Construction

Each coil is individually designed, with the fin material selected to take into account the environment in which it is to be located.

Tube material, diameter and wall thickness is selected with the medium, temperature and refrigerant or working pressure in mind and to customers specifications.

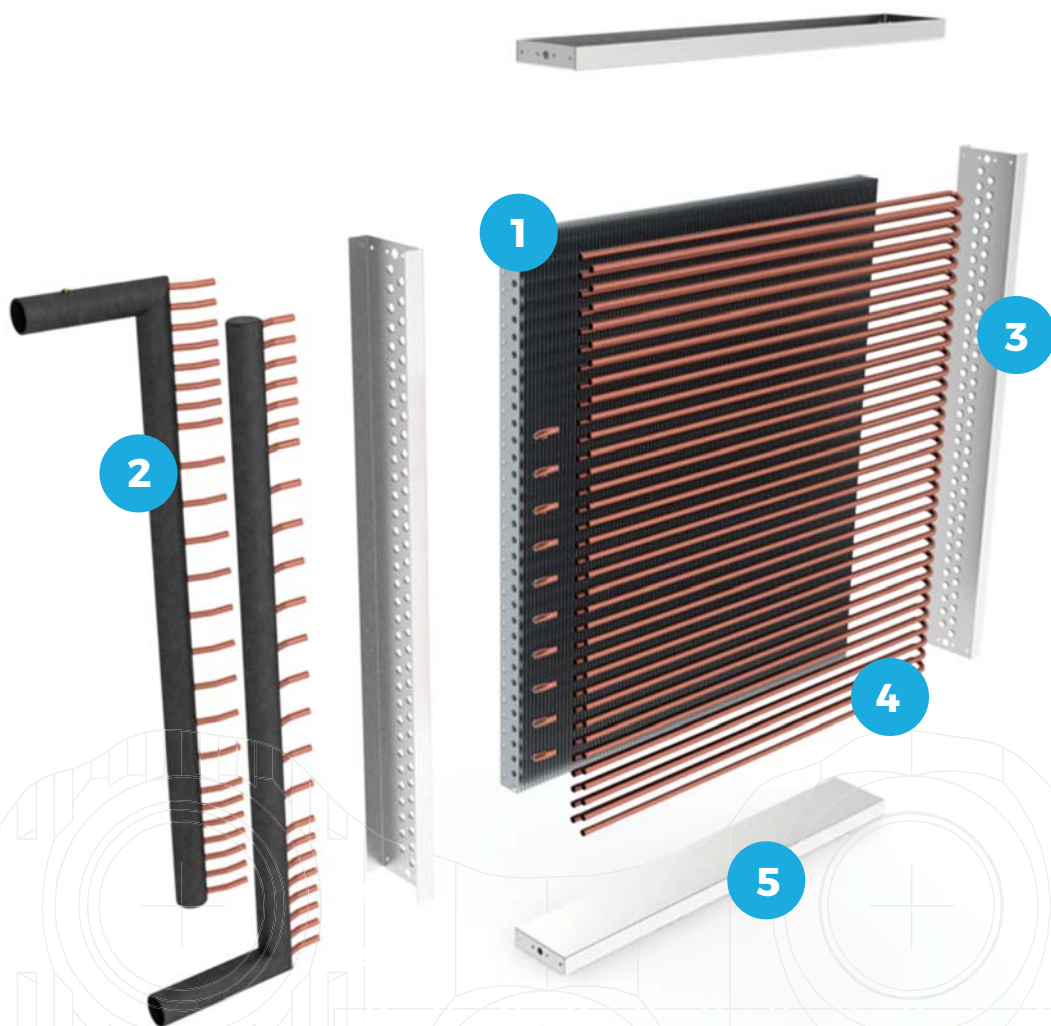
Casing material can be galvanised or stainless steel to suit harsher operating environments.

S22-7

S22-8

S22-10

Tube Diameter	Geometry Code	Geometry Type	Length	Tube Type	Thickness of smooth tubes	Thickness of grooved tubes	Thickness of fins	Fin space
mm	-	mm	mm	-	mm	mm	mm	mm
7 mm	7.	25x21.65	90-1000	Smooth/ Grooved	0.25	0.31	0.10/0.12/0.15/0.18	1.6/3.2
5/16" 7.94 mm	5.	25x21.65	90-4600	Smooth/ Grooved	0.28/0.41	0.33	0.10/0.12/0.15/0.18	1.6/6.0
3/8" 9.52 mm	6.	25x21.65	100-7350	Smooth/ Grooved	0.28/0.35/0.50	0.33/0.4	0.10/0.12/0.15/0.18	1.6/6.0



1

Fin Material Options

Materials; copper, aluminium
Different geometries
Special treatments including hydrophilic
& pre-painted

2

Customisable Headers

Materials
Diameters
Various types of construction

3

Surface Treatments

Cataphoresis
Blygold
Heresite

4

Tube Configuration Options

Materials;
copper, aluminium, stainless steel
Diameters;
ø7 ø7.94 ø9.52

5

Highly Customisable Frame

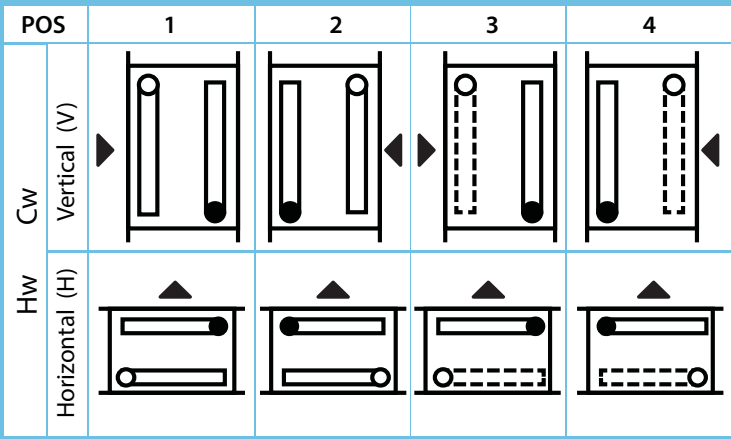
Fe Zn	Al	Aisi
Cu Zn	Cu	

CONNECTIONS

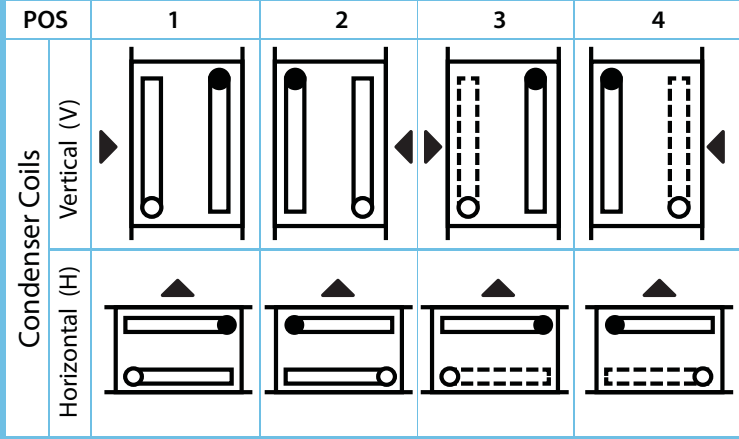
Generally the design of a coil is based upon the counterflow principle and needs to be installed as shown in the illustrations below to achieve the design duty.

▶ = Airflow direction ● = Media Inlet ○ = Media Outlet

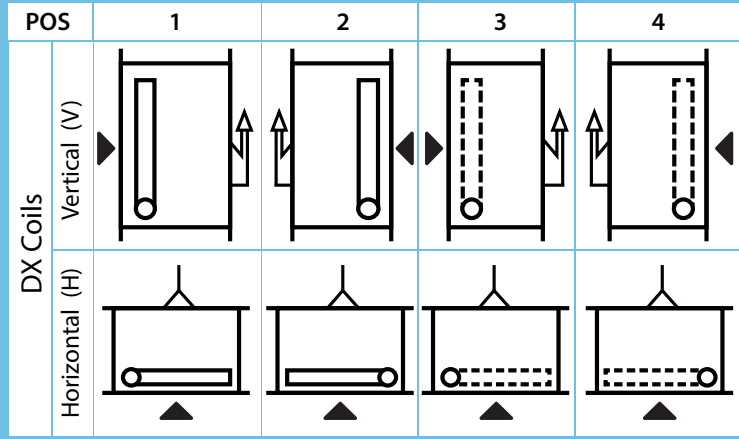
Chilled Water & Hot Water Coils

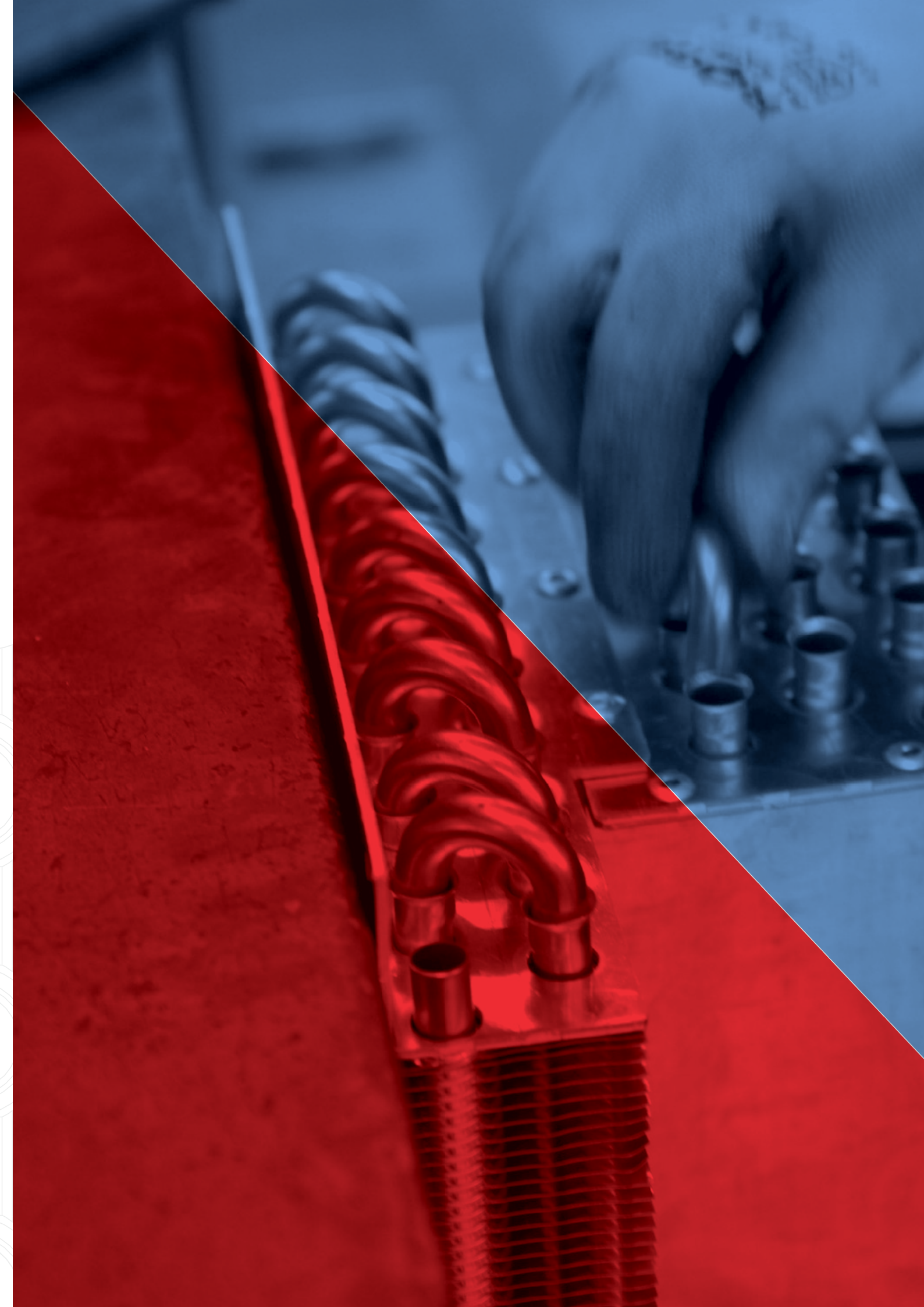


Condenser Coils



DX Coils







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Heat Transfer Specialists



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