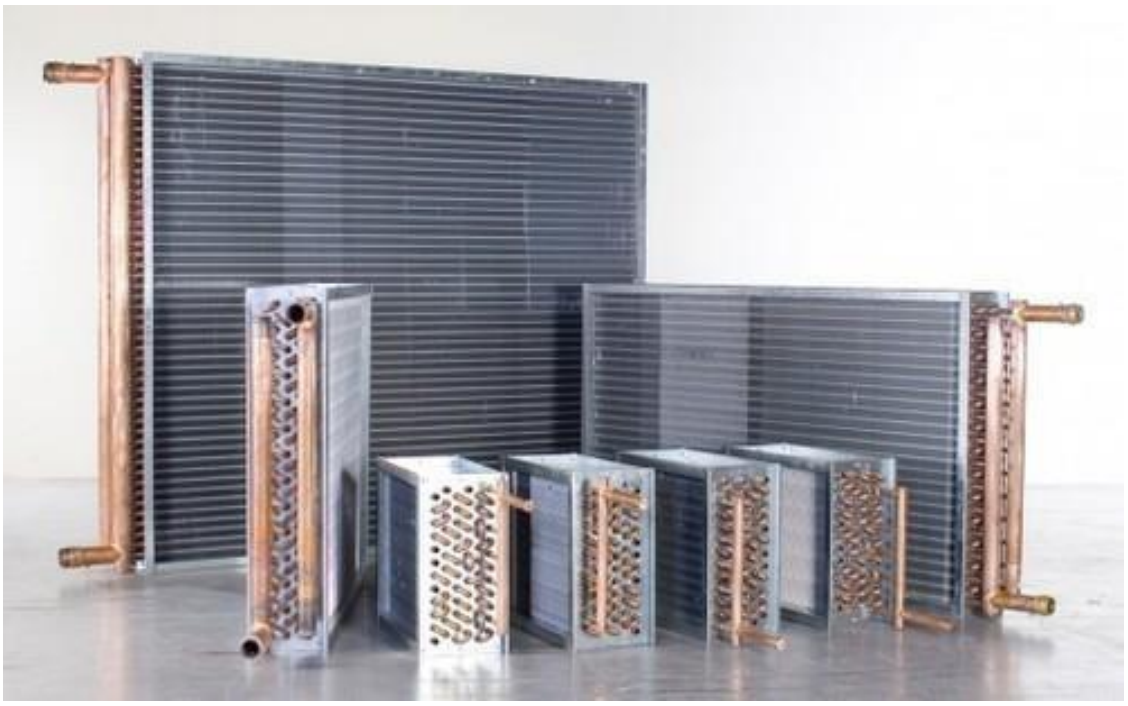

COOLING AND HEATING COILS

MTECH PHARMA SOLUTIONS

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ABOUT "MTECH COILS"

"MTECH COILS" was formed with the objective of establishing a sustainable and continually improving HVAC company which is able to deliver high quality and predictable products to our valuable customer with the shortest lead timepossible.

"MTECH COILS" is a cooling coil manufacturer, which is able to manage the technical specifications as well as the installation process from conception to completion.

Vision of "MTECH COILS"

"Our vision is to become a benchmark manufacturing company focused on providing world-class products to satisfy customers through continual improvement driven by integrity, teamwork, and creativity."

Mission of "MTECH COILS"

"Dedication to the highest level of Customer Service and company spirit. We will do this with warmth, friendliness, and dedication to the service required by our customers."

❖ APPLICATION OF COOLING AND HEATING COILS

1. **Air Handling Units**

AHU's supply fresh air to the room. The units take air from the outside, filter it and recondition it (cooled by a cooling coil or heated by a heating coil). Where hygienic needs for air quality are lower, the air from the rooms can be re-circulated for energy saving purposes.

2. **Split Air Conditioner Indoor & Outdoor Unit**

The most common type of home system is the split system air conditioner. This type consists of a main indoor air conditioning unit and outdoor unit that both connect together. The inside unit contains the evaporator coils and a filter, whereas the outdoor unit is home to the condensing coil, fan and compressor.

3. **Fan Coil Unit**

A fan coil unit (FCU) is a device that uses a coil and a fan to heat or cool a room without connecting to ductwork. Indoor air moves over the coil, which heats or cools the air before pushing it back out into the room…

4. **Refringent Based Dehumidifiers**

A dehumidifier is an electrical appliance which reduces and maintains the level of humidity in the air, usually for health or comfort reasons, or to eliminate musty odour and to prevent the growth of mildew by extracting water from the air. It can be used for household, commercial, or industrial applications

5. **Oil Cooled Chillers**

Cools and regulates the temperature of oil without any loss of cooling performance even in harsh environments.

6. **Cold Room Indoor Units**

A refrigerating chamber or cold room is a warehouse in which a specific temperature is artificially generated. It is generally designed for storing products in an environment below the outside temperature

❖ COIL NOMENCLATURE

CT DIA	COIL TYPE	CIRCUTING TYPE	HEADER POSITION	FPI	NO. ROWS	FIN CONFIGARATION	FIN HEIGHT	FIN LENGTH
38	CC	FC	R	12	06	W	12	12

38-CC-FC-R-12-06-W-12-12

I. Copper Tube Dia
   a. 3/8”-9.52mm-0.28mm (t)-38
   b. 1/2”-12.7mm-0.28mm(t)-12
II. Coil type
   a. Chilled water -CW
   b. Hot water -HW
   c. Condensing coil-CC
   d. Evaporating coil-DX
      - Normal dx coil -DX-N
      - Face control dx coil-DX-FC
      - Row control dx coil-DX-RC
      - Interlaced coil dx coil-DX-IC
III. Circuiting design
   a. Normal - single circuit-SC
   b. Face control - multiple circuits-MC
   c. 1/4 serpentine -quarter circuit-QC
   d. 1/2 serpentine-half circuit -HC
   e. 1 serpentine-full circuit -FC
   f. 1 1/2 serpentine
   g. 2 serpentines-double circuit-DC
IV. Header location
   a. Right hand-R
   b. Left hand -L

V. Fins per inch
   a. FPI-12-13
VI. Number of rows
   a. 2,4,6,8,

VII. Fin configuration
   a. Corrugated (al)-w
VIII. Fin height (in or mm)
   a. Starting from 12 inches or 300 mm

IX. Fin length (in or mm)
   a. Starting from 12 inches or 300 mm

❖ COIL TYPE

➢ CHILLED OR HOT WATER COIL

TYPE- FC (FLUID COIL)

Elementary Surface

Round seamless copper tubes are expanded using hydropneumatics water expansion system into the fin collars of the secondary surface. The hydropneumatics water expansion system provides a permanent metal-to-metal bond for efficient heat transfer. Tubes are staggered in the direction of airflow.

Secondary Surface

Corrugated aluminum or copper plate type fin that is die-formed. Fin collars are full-drawn to provide accurate control of fin spacing and maximum contact with tubes.

Headers

Seamless copper with die-formed holes that provide a parallel surface to the coil tube for strong brazing joints. Standard 1/8” brass female pipe thread (FPT) vent and drain with optional 1/2” or 3/4”. All circuiting is designed to gravity-drain with the coil mounted vertically and tubes running horizontally.

Connections

Red Brass Schedule 40 male pipe thread (MPT) std. with optional copper female pipe thread (FPT), sweat and Victaulic Red Brass available.

Casing

Casing is die-formed with 1½” flanges to permit easy stacking and mounting. Intermediate tube supports are supplied on coils over 44” fin length with an additional support every 42”.

Testing and Performance

All coil assemblies are leak tested under water with nitrogen at 315 PSIG. Standard construction is suitable for 250 PSIG and up to 300 degrees F.

➢ CONDENSER COIL

Type CC

Elementary Surface

Round seamless copper tubes are expanded using hydropneumatics water expansion system into the fin collars of the secondary surface. The hydropneumatics water expansion system provides a permanent metal-to-metal bond for efficient heat transfer. Tubes are staggered in the direction of airflow.

Secondary Surface

Corrugated aluminum or copper plate type fin that is die-formed. Fin collars are full-drawn to provide accurate control of fin spacing and maximum contact with tubes.

Headers

Seamless copper with die-formed holes that provide a parallel surface to the coil tube for strong brazing joints.

Connections

Copper outside diameter (O.D.) Sweat with standard arrangement for one compressor circuit. FACE SPLIT circuiting available for two or more compressors.

Casing

Casing is die-formed with 1½" flanges to permit easy stacking and mounting. Intermediate tube supports are supplied on coils over 44" fin length with an additional support every 42".

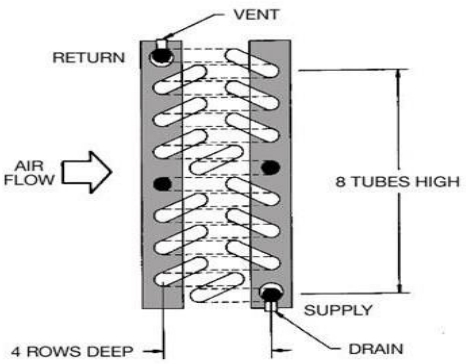
Testing

All coil assemblies are leak tested under water with nitrogen at 400 PSIG.

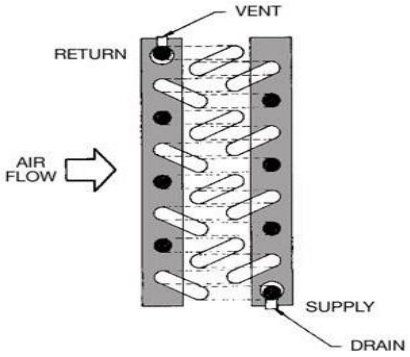
Circuiting

Coil circuiting options include: full face (std.) and horizontal (face) split.

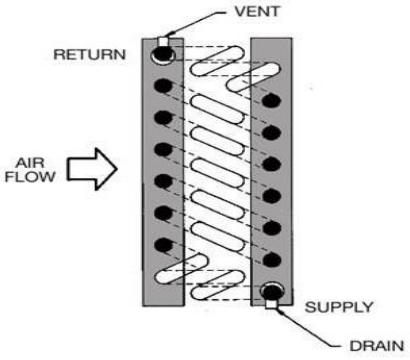
TYPICAL CIRCUITING ARRANGEMENTS



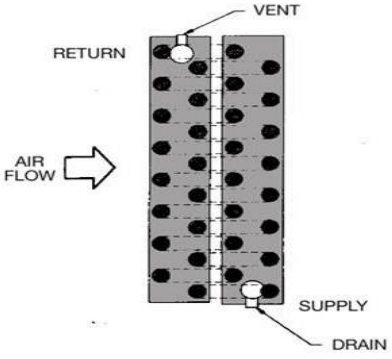
QUARTER CIRCUIT (25)



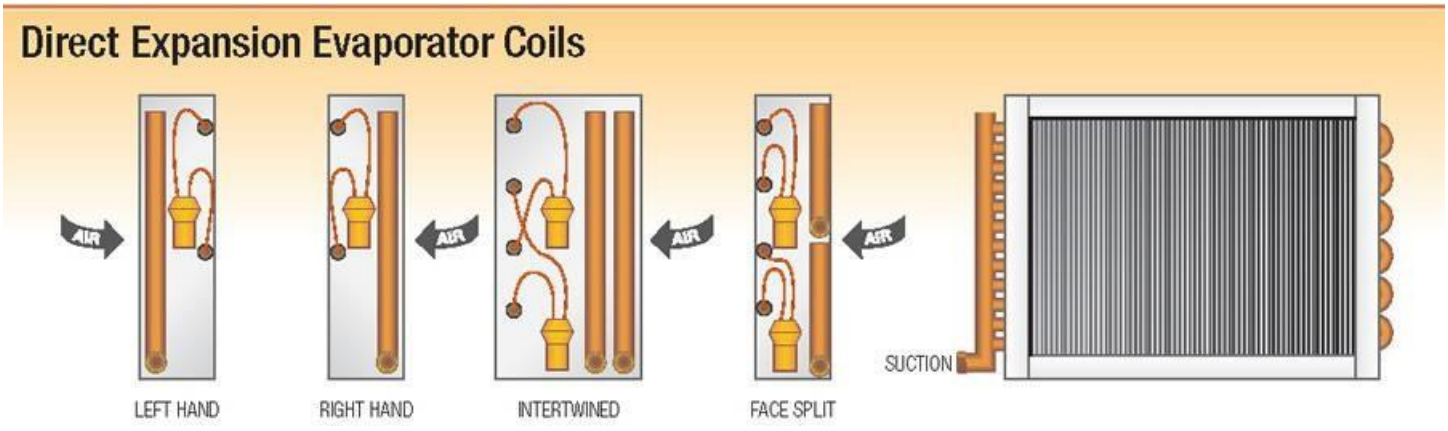
HALF CIRCUIT (50)



FULL CIRCUIT (10)



DOUBLE CIRCUIT (00)



➢ DIRECT EXPANSION COIL

Type DX

Elementary Surface

Round seamless copper tubes are expanded using hydropneumatics water expansion system into the fin collars of the secondary surface. The hydropneumatics water expansion system provides a permanent metal-to-metal bond for efficient heat transfer. Tubes are staggered in the direction of airflow

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Secondary Surface

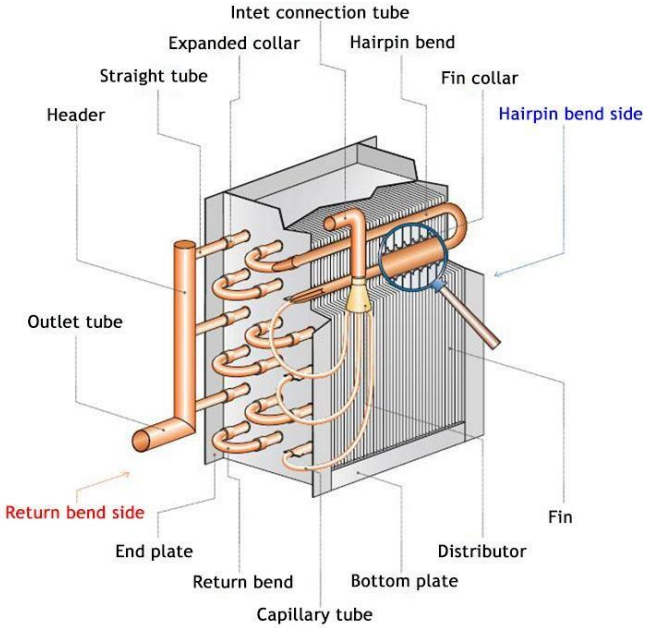
Corrugated aluminum or copper plate type fin that is die-formed. Fin collars are full-drawn to provide accurate control of fin spacing and maximum contact with tubes.

Headers

Seamless copper with die-formed holes that provide a parallel surface to the coil tube for strong brazing joints.

Connections

Interchangeable nozzle type refrigerant distributors are brass and suction connections are copper sweat. Standard coil has one distributor for one compressor circuit. An INTERTWINED coil has two distributors that provide full face control using two compressor circuits. A FACE SPLIT coil has two or more distributors for multiple compressor circuits.



Casing

Casing is die-formed with 1½" flanges to permit easy stacking and mounting. Intermediate tube supports are supplied on coils over 44" fin length with an additional support every 42".

Testing and Performance

All coil assemblies are leak tested under water with nitrogen at 315 PSIG

Circuiting

Coil circuiting options include full face (std.), intertwined, horizontal (face) split, and face split / intertwined.

➢ STEAM COIL

Type SS

Elementary Surface

Round seamless copper tubes are expanded using hydropneumatics water expansion system into the fin collars of the secondary surface. The hydropneumatics water expansion system provides a permanent metal-to-metal bond for efficient heat transfer. Tubes are staggered in the direction of airflow

Secondary Surface

Corrugated aluminum or copper plate type fin that is die-formed. Fin collars are full-drawn to provide accurate control of fin spacing and maximum contact with tubes.

Headers

Seamless copper with die-formed holes that provide a parallel surface to the coil tube for strong brazing joints.

Connections

Red brass Schedule 40 male pipe thread (MPT) is standard with optional copper female pipe thread (FPT) and sweat available. Maximum fin length of 108” with same end connections. Steam pressure above 50 PSIG will have opposite end connections.

Casing

Casing is die-formed with 1½” flanges to permit easy stacking and mounting. Coil as shown above must be mounted level (NO pitched case). Opposite end connection coils can be supplied with pitched casing. Intermediate tube supports are supplied on coils over 44” fin length with an additional support every 42”.

Testing and Performance

All coil assemblies are leak tested under water with nitrogen at 315 PSIG. Standard construction is suitable for 25 PSIG steam pressure. Heavier wall construction is available for steam pressures up to 100 PSIG.

- **COIL OPTIONS FOR ALL COILS**

TYPE OF COIL	ALL TYPES
COPPER TUBE DIA	3/8" x0.23 to 0.28 (t) (Both Plan & IG)
FIN MATERIAL	Aluminum Foil-0.15 mm Thickness

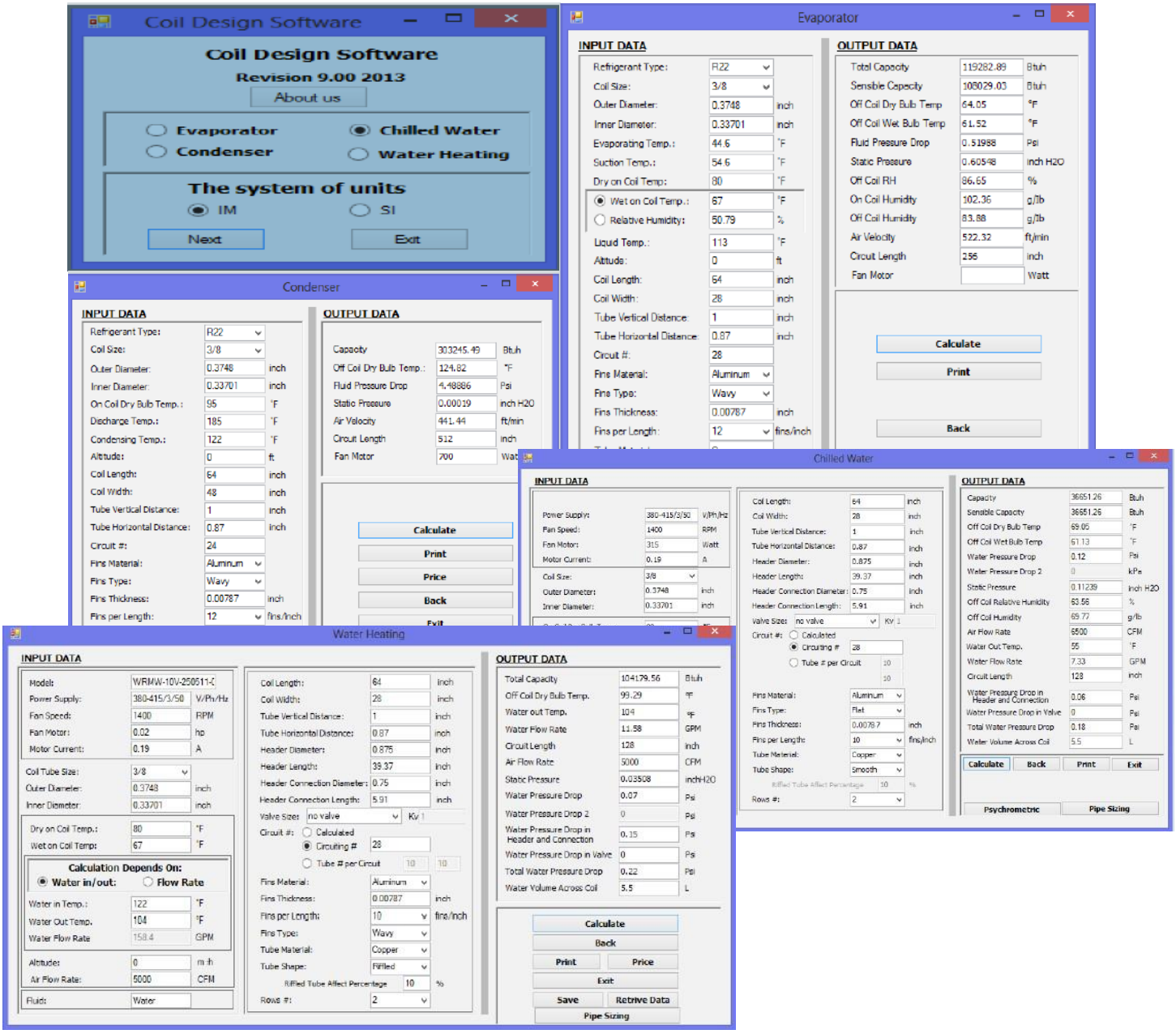
ROWS	FIN HEIGHT	FIN LENGTH	FIN SPACING	TUBE SPACING FACE x ROW	CASING	MAX STD OPERATING CONDITION
1,2,4,6,8	6" TO 40"	12" TO 40"	10 & 12 FPI	1"x 0.866"	16 or 14 GA Galvanized Steel	250 PSIG 300° F
	152.4 mm TO 1016 mm	304.8 mm TO 1016 mm		25.40 mm x 22 mm	304, 316 Stainless Steel	

TYPE OF COIL	ALL TYPES
COPPER TUBE DIA	1/2" x0.32 to 0.48 (t) (Both Plan & IG)
FIN MATERIAL	Aluminum Foil-0.15 mm Thickness

ROWS	FIN HEIGHT	FIN LENGTH	FIN SPACING	TUBE SPACING FACE x ROW	CASING	MAX STD OPERATING CONDITION
1,2,4,6,8	6" TO 40"	12" TO 40"	6 TO12 FPI	1.25"x 1.083"	16 or 14 GA Galvanized Steel	250 PSIG 300° F
	190.5 mm TO 1270 mm	381 mm TO 1270 mm		31.75 mm x 27.50 mm	304, 316 Stainless Steel	

❖ CH COILS SELECTION SOFTWARE

Using our coil selection software, we can calculate the performance of currently used coils and make intelligent choices for the most appropriate coils for any project.



If you have any queries, please free to contact us,

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THANK YOU.....!