# MultiTherm® REPLACEMENT COILS

**YOUR HEAT TRANSFER NEEDS ARE OUR ONLY CONCERN**

HVAC Coils | Industrial Coils | Heat Exchangers | Tube Bundles | Self Contained AC "T-Bar Units" | Replacement and New Coils

## For All Your Coil Needs

Commercial • Industrial • Replacement • New Applications

## We Specialize in QuickShip

## 3, 5 & 10 Day

*Available on most custom, new and replacement coils.*

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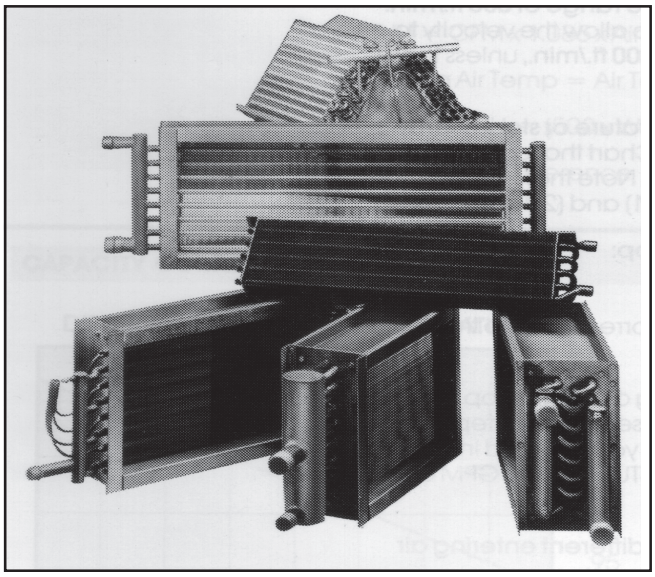
**800-339-7991**

**www.MultiThermCoils.com**

Direct: 610 408-8361 • Fax: 610-408-8365 • Email: Techinfo@MultiTherm.com • PO Box 579, Devault, PA 19432

# HVAC and Industrial System Coils

When it comes to building coils for any application Multitherm has the capability to meet your requirements. If you need a cooling or heating coil using water, steam, refrigerant or any other medium, Multitherm can build it for you. We build coils for replacement of existing coils or for new jobs, as well. We make standard copper tube / aluminum fin commercial coils and we build heavy industrial coils for process applications. You will be hard-pressed to come up with a job we can't handle.



**Commercial Coils**

The vast majority of coils that we build are for replacement of existing coils. Tube diameters vary from 3/8", 1/2", or 5/8" copper and almost all have aluminum or copper fins. Multitherm can match existing dimensions and functionally duplicate performance. Basically, all you have to do is slide out the old coil and slide in the new coil. We do all the work for you.

**Industrial Coils**

Some jobs require heavy duty construction and performance. Multitherm can build coils out of heavy wall copper, 90/10 cupro-nickel, carbon steel and even 304/316 stainless steel. We can build heavy duty casings, make them airtight, change fin materials, or even put coils inside boxes or transitions.

**Coil Sections**

Multitherm also builds coil sections for cooling coils, which are completely insulated and contain full drain pans. These units are perfect for chilled water or refrigerant coils that need to be installed in ductwork. You have access to the coils thru an access door, and can even add additional cooling and/or heating coils for supplemental cooling or dehumidification.

## *SPECIAL QUICK SHIP OPTIONS*

**Standard Ship**

Almost all coils ship in 4-5 weeks as standard. There are some exceptions, based on special materials, but 95% of all coils will ship in 4-5 weeks with no premium.

**10 Work Day Ship**

Most coils can ship in 10 work days (2 weeks) for a premium of 25%, based on the size of the job. We guarantee that the coil will ship on time or you don't pay the additional premium.

**5 Work Day Ship**

For major coil emergencies, you can have your coil ship in 5 work days (1 week). The required premium for this shipment is 50%. We guarantee shipment or you don't pay the premium.

**3 Work Day Ship**

For major coil emergencies, you can have your coil ship in 3 work days. The required premium for this shipment is 75%. We guarantee shipment or you don't pay the premium.

## *CROSS REFERENCE*

Multitherm has been building replacement coils for the HVAC Industry for over 40 years. During this time, we have built up a huge library of cross reference information on coils for replacement. There is a great possibility that we have built your coil at least once before. If you are replacing a coil built by a major manufacturer, we have a terrific chance of replicating it by the coil model number.

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REPLACEMENT COILS®

MultiTherm

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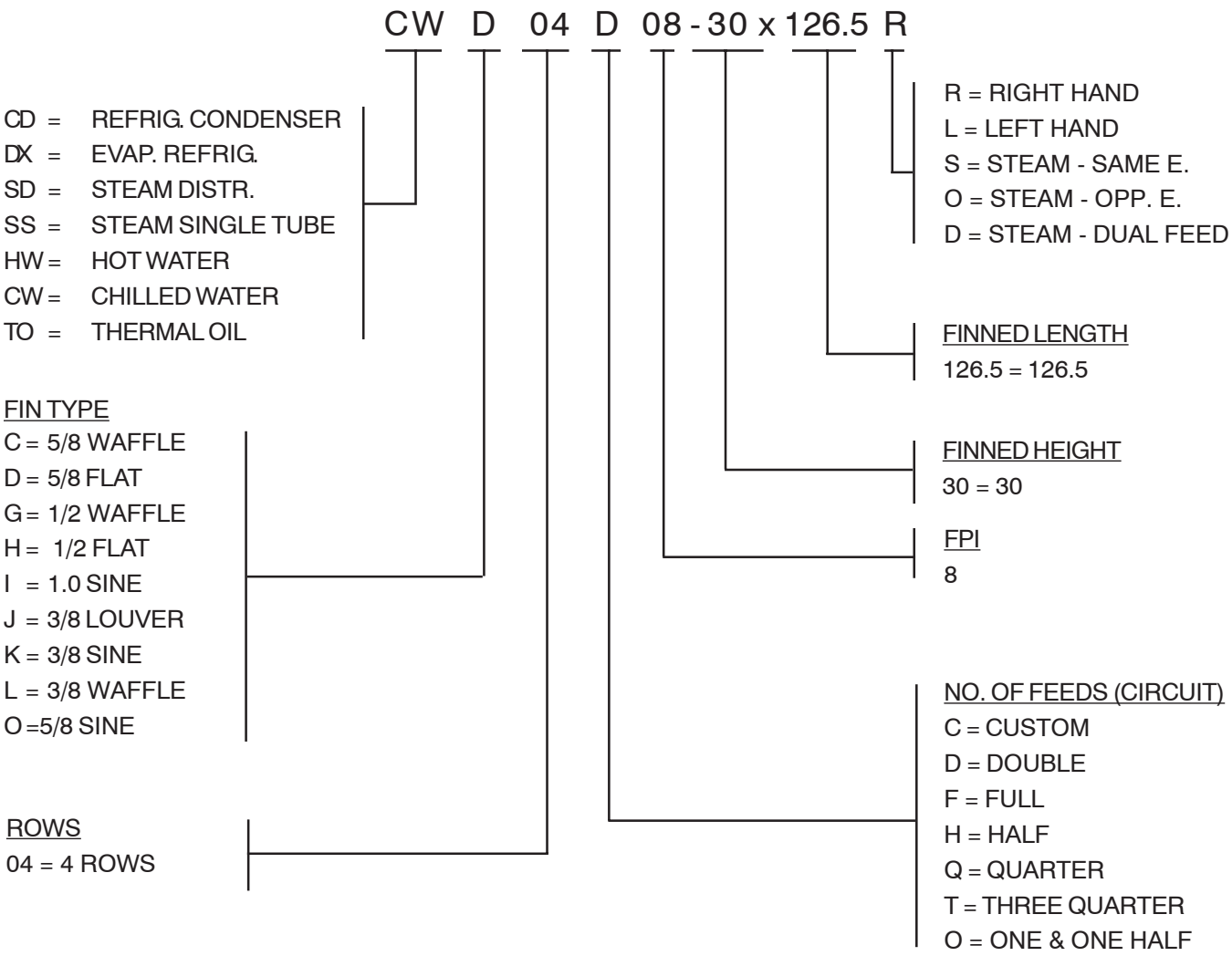
# COIL SPECIFICATION

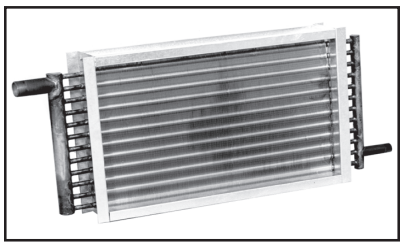
*Glossary of symbols for coil order/model information*

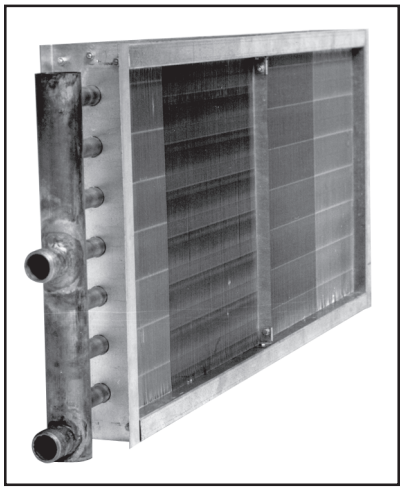



Coil casings will be plain carbon steel or zinc coated galvanized... unless specified otherwise.

# STEAM COILS

***FEATURES AND CONSTRUCTION***





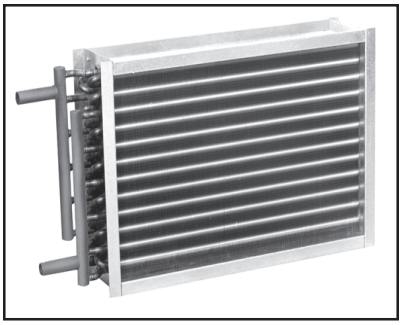
Multitherm builds both standard steam and steam distributing coils for HVAC and industrial process applications. Standard steam coils are used when entering air temperatures are 40ºF or above, and are constructed of 5/8" OD tubes. Tube thickness can vary from .025" wall to .049" wall, depending on the duty and steam pressure. Industrial applications might require 90/10 cupro-nickel or even steel or stainless steel tubes. The design of any steam coil is important, because it is imperative that condensate not collect in the coil. Most standard steam coils are opposite end connected and pitched within the casing to expedite condensate removal. It's also possible to build same end standard steam coils.

Steam distributing coils are tube within a tube design and are often referred to as "non-freeze" coils. This really is a misnomer, because under the right conditions, you can freeze any type of coil. Steam distributing coils are generally used when entering air temperatures to the coil are 40ºF or below. Steam distributing coils can be manufactured in 5/8" OD w/ 3/8" inner tube or 1" OD w/ 5/8" inner tube. Steam is distributed down the inner tube and released periodically to the outer tube where it is returned to the discharge header. The steam and condensate are distributed evenly across the face and tubes of the coil, and the steam in the inner tube keeps the condensate in the outer tube from freezing. 5/8" tubes can be .025" or .035" wall copper and 1" tubes can be .035" or .049" wall copper. When you have an application that requires a lot of outside air or very low air temperatures, you will generate lots of condensate (lbs./hr). Always use a 1" steam coil for preheat applications of this type, because there is more room between the outer and inner tube to evacuate the condensate.

| COIL COMPONENTS | STEAM COIL CONTRUCTION |
|---|---|
| Tubes | 5/8" OD or 1" OD copper, 90/10 cupro-nickel, steel or stainless steel |
| Tube Thickness | .025", .035", .049", .065" (Steel only) |
| Fins | Aluminum or copper |
| Fin Thickness | .006", .008", .010" |
| Casing | Galv. steel, stainless steel, aluminum, copper |
| Rows | 1 or 2 (5/8"), 1 (1") |
| Connections | Copper, steel, stainless steel (MPT, FPT, Flanged) |
| Fin Surface | Corrugated or flat |

# HOT WATER/CHILLED WATER COILS

*FEATURES AND CONSTRUCTION*



Multitherm has been a leader in the design of water coils for over 40 years. We build both hot water and chilled water coils for a wide variety of applications and duties. Multitherm builds 1 or 2 row hot water coils or 3 thru 12 row chilled water coils for both HVAC or process type jobs. The construction for any water coil is basically the same, except that hot water coils generally do not exceed 1 or 2 rows, while chilled water coils are required to be deeper and are usually 3 thru 12 rows.

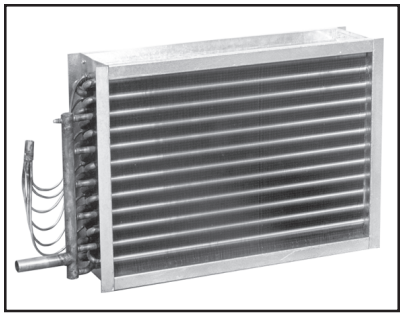
Multitherm is totally flexible in the design of water coils. We offer a wide range of circuiting patterns, fin spacings, rows and connection arrangements. The perfect coil design balances high efficiency performance with acceptable waterside and airside pressure drops. Multitherm engineers have a wealth of experience and will be pleased to assist you in achieving this balance of pressure drops and good performance. As always, we offer a wide variety of quick ships on any of our water coils.

In addition, Multitherm builds glycol coils for ethylene or propylene. Many of these applications are for process or heat recovery applications.

| COIL COMPONENTS | WATER COIL CONTRUCTION (GLYCOL) |
|---|---|
| Tubes | 3/8", 1/2", 5/8" OD copper |
| Tube Thickness | .016", .020", .025", .035", .049" |
| Fins | Aluminum or copper |
| Fin Thickness | .006", .008", .010" |
| Casing | Galv. steel, stainless steel, aluminum, copper |
| Rows | Hot water 1 or 2, chilled water 3-12 |
| Connections | Copper, steel, stainless steel (MPT, FPT, Flanged) |
| Fin Surface | Corrugated or flat |

# DX EVAPORATOR COILS

*FEATURES AND CONSTRUCTION*



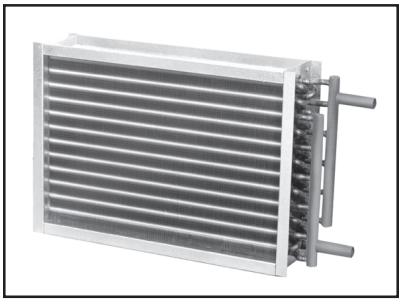
Multitherm builds DX evaporator coils with the widest range of circuiting control and splits available in the industry. DX Coils are often used in Air Handlers or built up systems or just stand alone in ductwork. Often, multiple compressors are connected to the same DX coil and require capacity control. Multitherm uses a unique intertwined circuiting arrangement to allow use of the full face area for distinct uniform refrigerant distribution. In addition, you can also select from face splits or row splits for 2, 3, or even 4 compressors on the same coil.

Our DX coils are available in 1/2" or 5/8" OD copper tubes with a pre-selected distributor based on the coil load and refrigerant used. As always, special quick ships are available on any coil that could be selected. Multitherm engineers are especially adept at figuring out performance for difficult systems.

| COIL COMPONENTS | DX EVAPORATOR COIL CONSTRUCTION |
|---|---|
| Tubes | 1/2" OD or 5/8" OD copper, stainless or carbon steel |
| Tube Thickness | .016, .020", .025", .035", .049" |
| Fins | Aluminum or copper |
| Fin Thickness | .006", .008", .010" |
| Casing | Galv. steel, stainless steel, aluminum, copper |
| Rows | 2 thru 12 |
| Connections | Copper SWT, distributor (No exp. valve) |
| Fin Surface | Corrugated or flat |

# CONDENSER COILS

*FEATURES AND CONSTRUCTION*



The vast majority of requests that Multitherm receives for condenser coils are to replace existing coils. Replacement condenser coils require a whole different set of criteria than other coils.

(1) Thin fin material - Fins tend to bend or be damaged during cleaning

(2) Fins too close - Fin spacing is often 14 fins/inch to 20 fins/inch. Coils easily blocked by dirt

(3) Excessive vibration - Prop fans are too close to coils and vibration causes tube sheets to cut into tubes.

(4) Electrolytic corrosion -Usually found in ocean areas from salt air. Bond between fin and tube disappears.

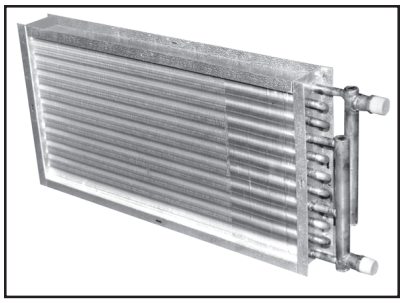
(5) General corrosion - Fins supply 70% of the heat transfer and fins are just damaged and fall apart.

Multitherm engineers have great experience in designing condenser coils that solve one or all of these problems. Simultaneously we can suggest alternative coil designs that eliminate practical problems in the field. Multitherm has seen just about every condenser coil problem that you could see over the last 40 years. We can vary tube diameter, fin thickness or fin spacing to help you solve your problem. We can coat coils or we can provide alternative materials of construction so that your condensate coils do not fail prematurely.

| COIL COMPONENTS | CONDENSER COIL CONSTRUCTION |
|---|---|
| Tubes | 3/8", 1/2", 5/8" OD copper, stainless or carbon steel |
| Tube Thickness | .016", .020", .025", .035", .049" |
| Fins | Aluminum or copper |
| Fin Thickness | .006", .008", .010" |
| Casing | Galv. steel, stainless steel, aluminum, copper |
| Rows | 2 thru 12 |
| Connections | Copper SWT, MPT. or Flanged |
| Fin Surface | Corrugated or flat |

# HOT WATER BOOSTER COILS

***FEATURES AND CONSTRUCTION***

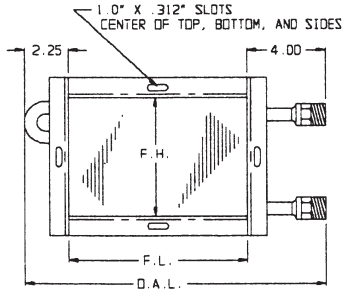


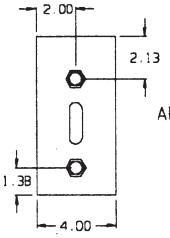
Multitherm stocks (36) sizes of (1) row coils and (36) sizes of (2) row coils for duct mounted Hot Water Booster Coils. These sizes range from 6" x 6" to 30" x 60" and are available from 8 fins/inch thru 14 fins/inch. Many are available on a 1 day shipment and all are available on 3-5 day shipments. Hot Water Duct Booster Coils are built with either 1" flanges on all four sides for easy duct mounting or slip & drive casings for insertion into duct. There are multiple feed patterns to match performance and pressure drop requirements.

Multitherm is a leader in building Booster Coils. We recognize that small coils are every bit as important as big coils and when you have a heating problem, it requires an immediate solution. Please see our website at www.MultiThermCoils.com for a complete list of all available sizes and tube feed choices. The following pages show casing alternatives.

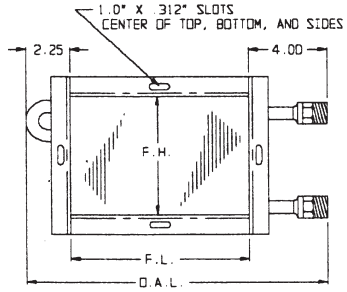
***5/8" tube 1 and 2 row boosters - 1" casing - All four sides***

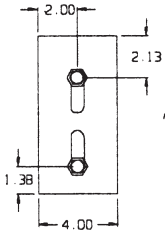
## 1 Row Coils



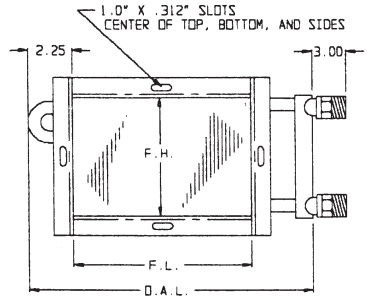



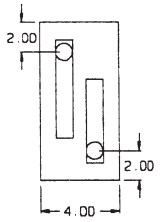

ARRANGEMENT A
SINGLE FEED



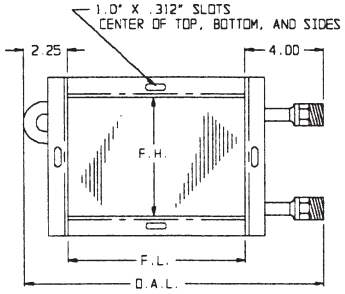

ARRANGEMENT B
TWO FEED

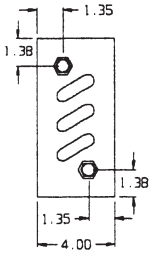


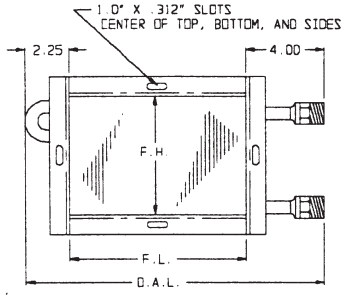



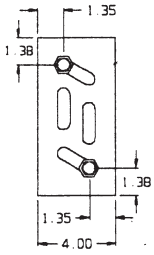

ARRANGEMENT C
HEADERED

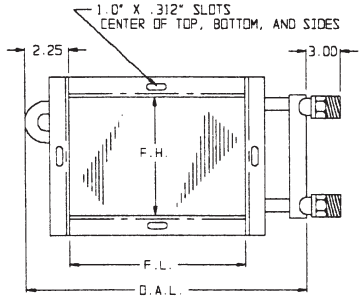
## 2 Row Coils

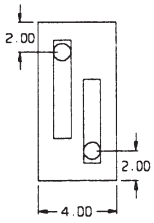



All dimensions are in inches.

**Non-headered Models**
**Overall length = Fin length +6.25"**

**Headered Models**
**Overall length = Fin length +Dimension from chart below**

| Connection Size | Add to F.L. |
|---|---|
| 3/4" M.P.T. or 7/8" O.D. Sweat | 6.25" |
| 1.0" M.P.T. or 1 1/8" O.D. Sweat | 6.50" |
| 1.25" M.P.T. or 1 3/8" O.D. Sweat | 6.75" |
| 1.5" M.P.T. or 1 5/8" O.D. Sweat | 7.00" |
| 2.00" M.P.T. or 2 1/8" O.D. Sweat | 7.50" |

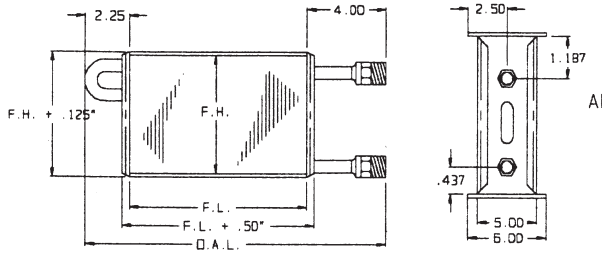
Construction Specifications
Coil tubes - All coils have 5/8" O.D. Copper tubes with .020" wall and staggered tube pattern.
Fins - All coils have .006 die-formed plate type aluminum fins.
Connections - Supply and return connections are available in copper M.P.T. or sweat.
Casing - All coils have 16 Ga. Galv. steel casing.
Testing - All coils are leak tested under water with 550 PSIG dry nitrogen.

# HOT WATER BOOSTER COILS

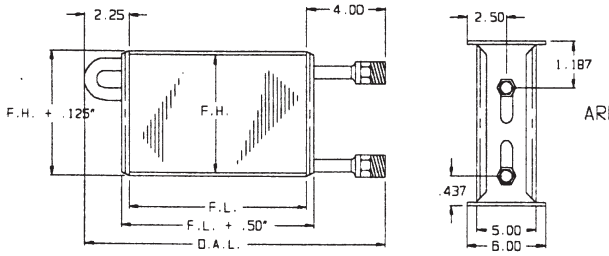
***FEATURES AND CONSTRUCTION***

***5/8" tube 1 and 2 row boosters - Slip and drive casing***

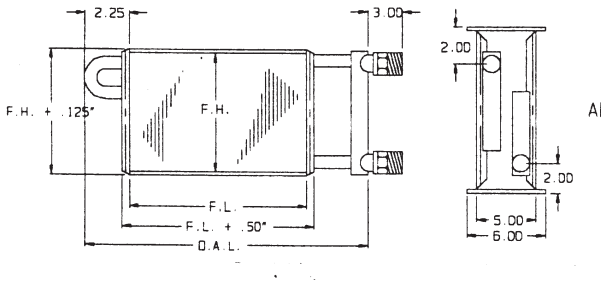
## 1 Row Coils




ARRANGEMENT A
SINGLE FEED

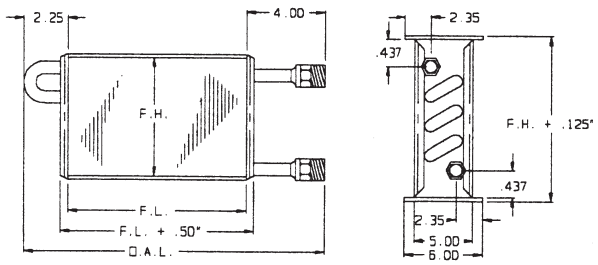


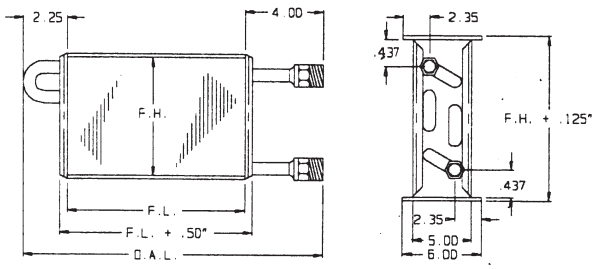

ARRANGEMENT B
TWO FEED

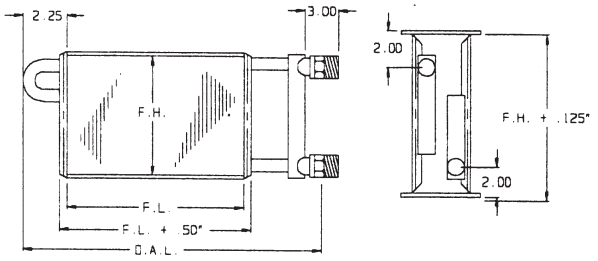



ARRANGEMENT C
HEADERED

## 2 Row Coils

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| Connection Size | Add to F.L. |
|---|---|
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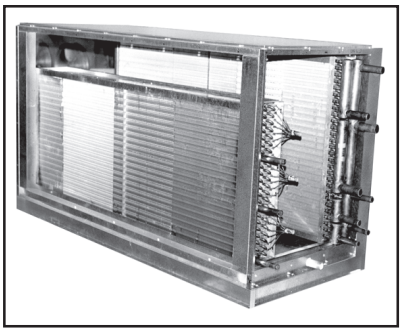
| 1.0" M.P.T. or 1 1/8" O.D. Sweat | 6.50" |
| 1.25" M.P.T. or 1 3/8" O.D. Sweat | 6.75" |
| 1.5" M.P.T. or 1 5/8" O.D. Sweat | 7.00" |
| 2.00" M.P.T. or 2 1/8" O.D. Sweat | 7.50" |

Construction Specifications
Coil tubes - All coils have 5/8" O.D. Copper tubes with .020" wall and staggered tube pattern.
Fins - All coils have .006 die-formed plate type aluminum fins.
Connections - Supply and return connections are available in copper M.P.T. or sweat.
Casing - All coils have 16 Ga. Galv. steel casing with 180 degree drive cleat flanges on tube sheets.
Testing - All coils are leak tested under water with 550 PSIG dry nitrogen.

# COIL SECTIONS

***FEATURES AND CONSTRUCTION***



In addition to building free standing coils, Multitherm builds fully insulated coil sections for duct mounting. Coils are fully mounted inside a galvanized steel coil section that is built with double wall construction and 2", 1 1/2 lb. fiberglass insulation. Housing is 16 ga. galvanized steel with removable panels on each side for total coil access. Drain pans are 304 stainless steel.

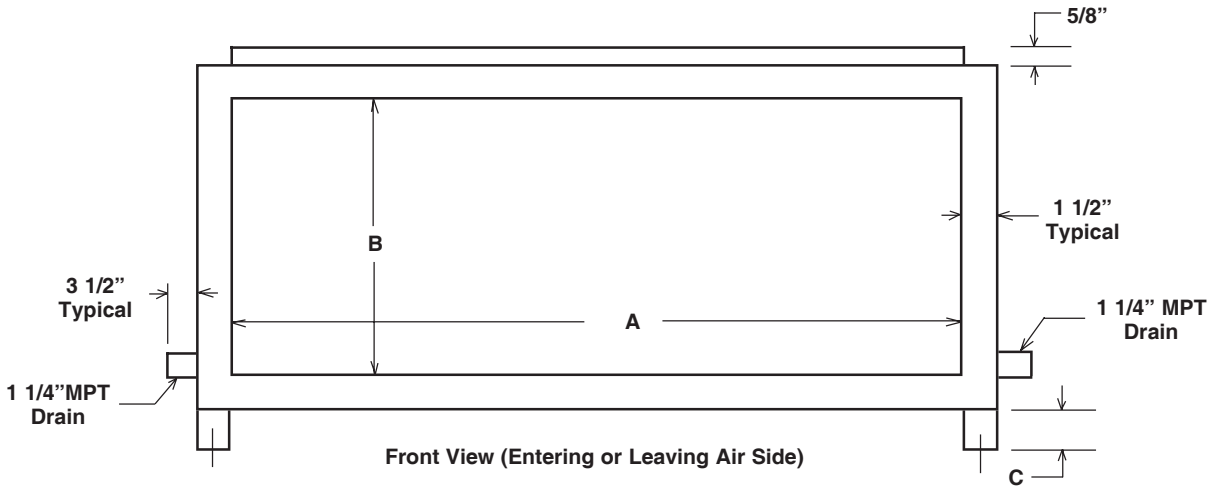
These units are great for duct mounting where you don't have to worry about your own drain pan or field insulating the unit. All the work is done at Multitherm. And the best part is that these units are available on Quickship just like any coil. See the table below for various sizes.

| Approximate CFM | Size | Coil Size | Available Coil Depth | |
|---|---|---|---|---|
| | | | Short | Long* |
| 1500 | 3 | 15 x 30 | 17 1/2 | 23 1/2 |
| 2250 | 4.5 | 21 x 30 | 17 1/2 | 23 1/2 |
| 3000 | 6 | 18 x 44 | 17 1/2 | 23 1/2 |
| 4000 | 8 | 24 x 48 | 17 1/2 | 25 1/2 |
| 5000 | 10 | 30 x 48 | 17 1/2 | 31 1/2 |
| 6000 | 12 | 30 x 57 | 17 1/2 | 31 1/2 |
| 7000 | 14 | 30 x 66 | 17 1/2 | 31 1/2 |
| 8500 | 17 | 36 x 69 | 17 1/2 | 37 1/2 |
| 10,500 | 21 | 36 x 84 | 17 1/2 | 37 1/2 |
| 12,500 | 25 | 42 x 84 | 17 1/2 | 37 1/2 |
| 15,500 | 31 | 42 x 108 | 17 1/2 | 37 1/2 |
| 18,000 | 36 | 48 x 108 | 17 1/2 | 37 1/2 |
| 20,500 | 41 | 54 x 108 | 17 1/2 | 37 1/2 |
| 25,000 | 50 | 66 x 108 | 17 1/2 | 37 1/2 |
| 32,500 | 65 | 87 x 108 | 17 1/2 | 37 1/2 |
| * Additional coil space can be used for pre-cooling coils, heating coils, dehumidifying coils, etc. | | | | |

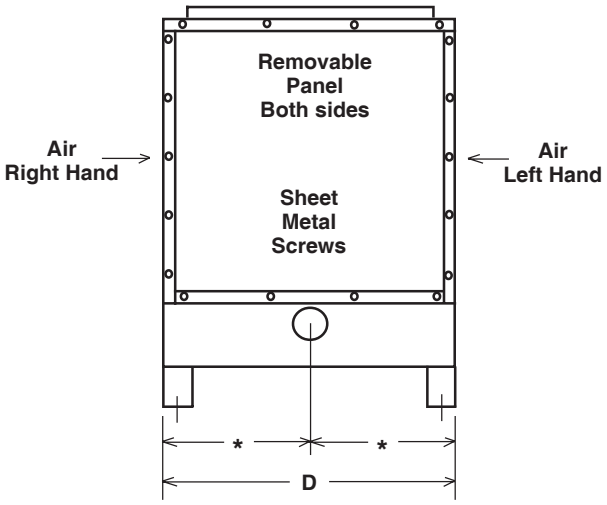
# COIL SECTIONS

***DIMENSIONS***

***Free standing coil sections***




Front View (Entering or Leaving Air Side)




Side View

***Construction:***

***16 gauge galvanized steel housing.***

***Removable panels on both sides.***

***16 gauge 304 stainless steel drain pan.***

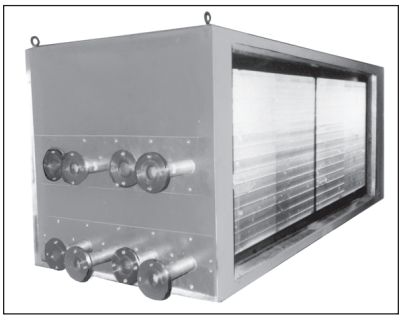
***2” double wall insulation.***

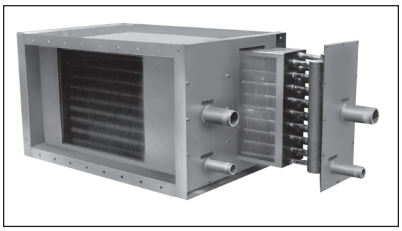
**** Drain connection located 11” from entering air side of section - short***

| Desig. | 3 | 4.5 | 6 | 8 | 10 | 12 | 14 | 17 | 21 | 25 | 31 | 36 | 41 | 50 | 65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 42 | 42 | 56 | 60 | 60 | 69 | 78 | 81 | 96 | 96 | 120 | 120 | 120 | 120 | 120 |
| B | 18 | 24 | 21 | 27 | 33 | 33 | 33 | 39 | 39 | 45 | 45 | 53 | 60 | 70.5 | 90.5 |
| C | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| D Short | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| D Long | 28 | 28 | 28 | 30 | 36 | 36 | 36 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |

# INDUSTRIAL COILS

***FEATURES AND CONSTRUCTION***





Multitherm has concentrated on industrial customers for years. We build and design a wide range of Heat Transfer and Air Handling Equipment that can be used in industrial applications for comfort heating/cooling or process jobs. Multitherm is set up to handle industrial customers better than any other company in our industry. We offer your company the following:

- **Quick shipments on almost all equipment.** Multitherm either stocks or offers expedited shipments on Coils, Air Handlers, and Space Coolers.
- **Flexibility in design and size.** Multitherm can replace most equipment that you require. We can duplicate size, duty and performance.
- **Competitive pricing.** Multitherm offers a host of great products that will save you time and money by dealing direct with the manufacturer. Multitherm is a nationwide source for HVAC equipment and our pricing is as good as anyone in the inductry.

**Multitherm specializes in emergency shipments.**

Three shipment programs are available to meet your needs.

1. Standard Shipment: Most coils ship in 4 to 5 weeks. Coils requiring special materials and construction can take 6 to 7 weeks.
2. Special 10 work day Shipment: Most HVAC and process coils can ship in 10 work days (2 weeks) for a premium of 25%.
3. Special 5 work day Shipment: Most HVAC and process coils can ship in 5 work days (1 week) for a premium of 50%.

**Multitherm has the tooling to build coils from all the materials and thicknesses in the following charts. Ocasionally some materials may not be available when needed. Please check with Multitherm before specifying materials that may be difficult to obtain.**

| MATERIALS OF CONSTRUCTION | | |
|---|---|---|
| TUBE MATERIALS | DIAMETER | THICKNESS |
| COPPER | 1/2" O.D. | .017", .025" |
| COPPER | 5/8" O.D. | .020", .025", .035", .049", .065" |
| COPPER | 5/8" O.D. Non-freeze Steam | .025", .035" |
| COPPER | 7/8" O.D. | .035", .049", .065", .109" |
| COPPER | 1" O.D. Non-freeze | .035", .049" |
| 90/10 CUPRO-NICKEL | 5/8' O.D. | .035", .049", .065" |
| 90/10 CUPRO-NICKEL | 7/8" O.D. | .035", .049", .065" |
| BRASS (RED/ADM.) | 5/8" O.D. | .035", .049", .065" |
| CARBON STEEL | 5/8" O.D. | .035", .049", .065" |
| CARBON STEEL | 7/8" O.D. | .049", .065", .109" |
| 304/316 STAINLESS | 5/8" O.D. | .035", .049", .065" |
| 304/316 STAINLESS | 7/8" O.D. | .049", .065", .109" |
| ALUMINUM | 5/8" O.D. | .049", .065" |

| FIN MATERIALS | THICKNESS |
|---|---|
| ALUMINUM | .006", .008", .010", .016", .030" |
| COPPER | .006", .008", .010" |
| CARBON STEEL | .012" |
| 304/316 STAINLESS | .010" |
| 90/10 CUPRO-NICKEL | .010' |

| CASING MATERIALS | THICKNESS |
|---|---|
| GALV. STEEL | 16 GA., 14 GA., 12 GA., 10 GA., 8 GA.<br>AVAILABLE FOR ALL |
| 304/316 STAINLESS | |
| ALUMINUM | |

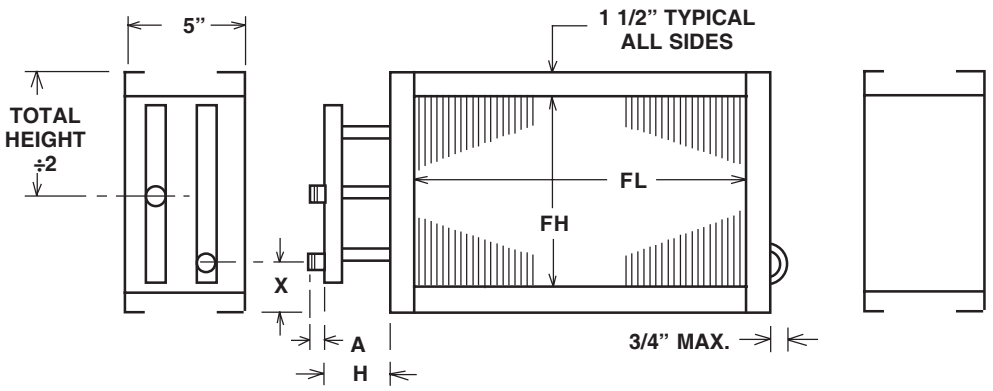
| CONNECTIONS | CONNECTION TYPES |
|---|---|
| COPPER<br>STEEL<br>90/10 CUPRO-NICKEL<br>BRASS<br>ALUMINUM | M.P.T.<br>F.P.T.<br>SWEAT<br>FLANGED |

# STEAM - STANDARD

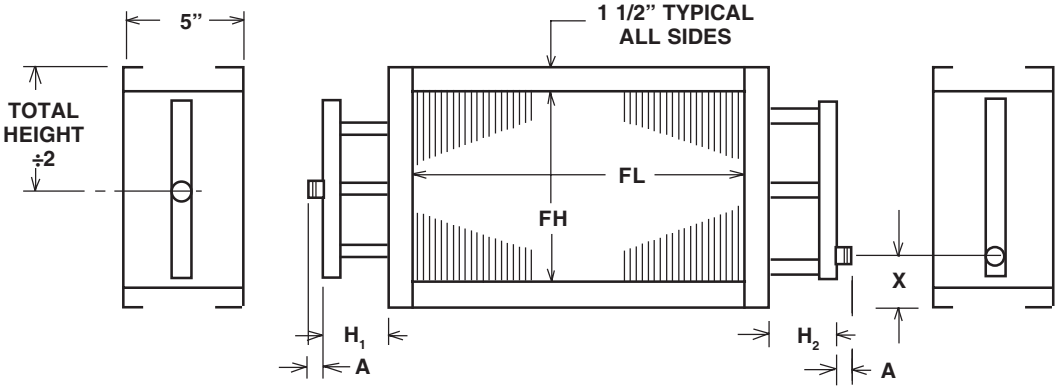
***STANDARD COIL DRAWINGS***

***Standard Steam Coils 5/8" O.D. Type***

***SAME END***




***OPPOSITE END***




***Coil Construction***

- ***5/8" O.D. x .025 copper tubes.***
- ***.006 thick aluminum tubes.***
- ***Heavy wall copper headers.***
- ***M.P.T. connections (copper).***
- ***16 Ga. galvanized steel casing supports.***

***All connections M.P.T. (O.D.)***
***X = 5/8" + return connection size***

| Dimensions | | | | | |
|---|---|---|---|---|---|
| Conn's Sup. / Ret. | H Same End | 1 Row Opposite End | | 2 Row Opposite End | |
| | | $H_1$ | $H_2$ | $H_1$ | $H_2$ |
| 1 1/2 - 1 1/2 | 3 1/4 | 3 1/4 | 3 1/4 | 4 1/2 | 4 1/2 |
| 2 - 1 1/2 | 3 3/4 | 3 1/2 | 3 1/2 | 4 1/2 | 4 1/2 |
| 2 1/2 - 1 1/2 | 4 1/4 | 3 3/4 | 3 3/4 | 4 1/2 | 4 1/2 |
| 2 1/2 - 2 | 4 1/4 | 4 | 4 | 4 1/2 | 4 1/2 |
| 3 - 2 1/2 | 4 3/4 | 4 1/2 | 4 1/2 | 5 | 5 |

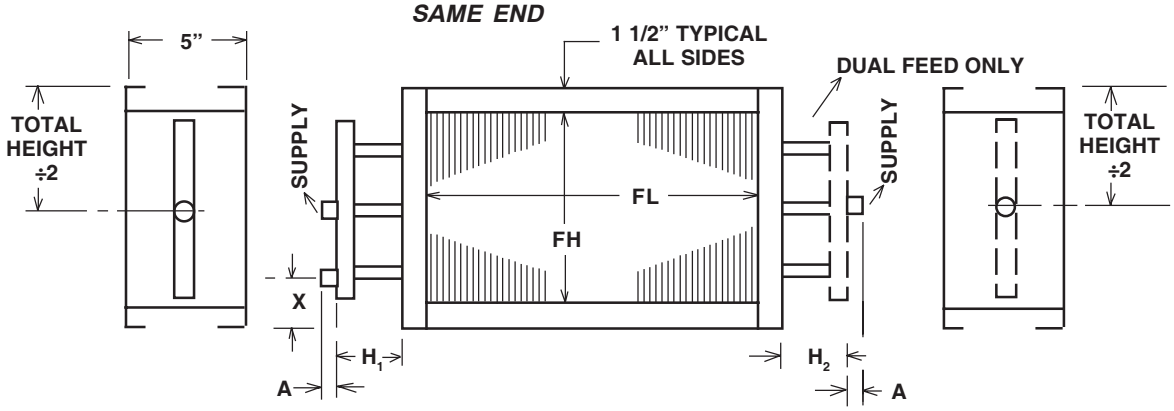
| Connection Sizes - All Coils | | | | |
|---|---|---|---|---|
| Coil FH | Supply | | Return | |
| | 1R | 2R | 1R | 2R |
| Up to 24 | 1 1/2 | 2 | 1 1/2 | 1 1/2 |
| 24 - 27 | 2 | 2 | 1 1/2 | 1 1/2 |
| 30 - 33 | 2 | 2 1/2 | 1 1/2 | 1 1/2 |
| 36 & up | 2 1/2 | 3 | 2 | 2 1/2 |

# STEAM - DISTRIBUTING

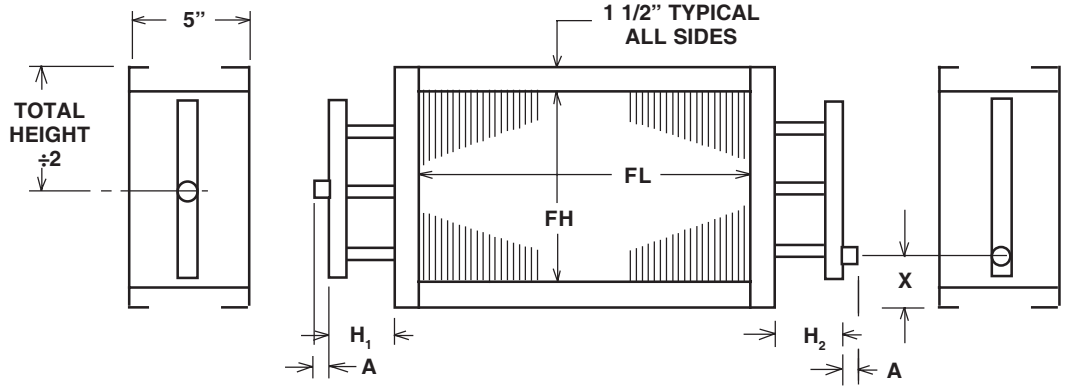
***STANDARD COIL DRAWINGS***

***Steam Distributing Coils (non-freeze) 5/8" or 1" O.D. Types***

***SAME END***




***OPPOSITE END***




***Coil Construction:***

- *5/8" O.D. x .025 outer, 3/8" O.D. inner copper.*
- *1" O.D. x .035 outer, 5/8" O.D. inner copper.*
- *.006" thick aluminum fins (5/8" O.D. tubes).*
- *.008" thick aluminum fins (1" O.D. tubes).*
- *Heavy wall copper headers, M.P.T. copper connections.*
- *16 Ga. galvanized steel casing & supports.*
- *Coil connections to be copper MPT type.*

***Application note:***

***Any coil over 72" finned length, same end connections, in conjunction with outside air, should have dual supply connections (one supply each end). See arrangement 'B' showing two supplies.***

***All connections M.P.T. (O.D.).***
***X = 5/8 + Return Conn. Size.***

| Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Conns | | 1 Row - 5/8" O.D. | | | 2 Row - 5/8" O.D. | | | 1 Row - 1" O.D. | | |
| Sup | Ret | $H_1$ | $H_2$ | A | $H_1$ | $H_2$ | A | $H_1$ | $H_2$ | A |
| 1 1/2 | 1 1/2 | 4 1/4 | 2 1/4 | 3 1/2 | 4 3/4 | 3 3/4 | 4 | 3 1/2 | 3 1/2 | 3 |
| 2 | 1 1/2 | 4 1/4 | 2 3/4 | 3 1/2 | 4 3/4 | 3 3/4 | 4 | 3 3/4 | 3 1/2 | 3 |
| 2 1/2 | 1 1/2 | 4 1/4 | 3 1/4 | 3 1/2 | 4 3/4 | 3 3/4 | 4 | 4 1/4 | 3 1/2 | 3 1/4 |
| 2 1/2 | 2 | 4 1/4 | 3 3/4 | 3 1/2 | 4 3/4 | 3 3/4 | 4 | 4 1/4 | 3 1/2 | 3 1/4 |
| 3 | 2 1/2 | 4 3/4 | 4 1/4 | 4 | 4 3/4 | 4 1/4 | 4 | 4 3/4 | 4 | 3 1/4 |

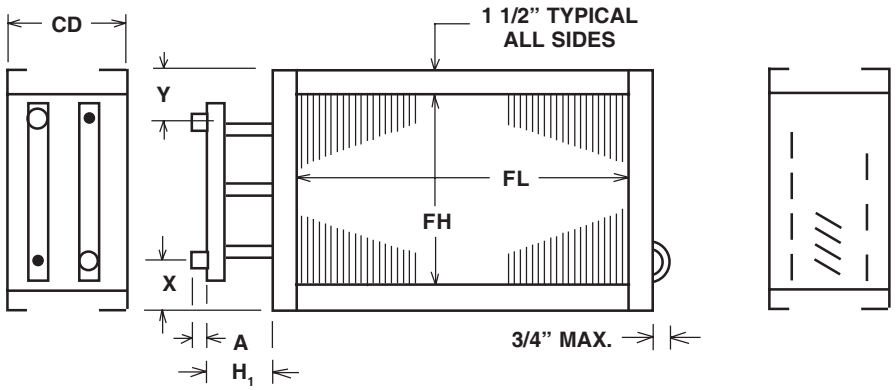
| Connection Sizes - All Coils | | | | |
|---|---|---|---|---|
| Coil FH | Supply | | Return | |
| | 1R | 2R | 1R | 2R |
| Up to 24 | 1 1/2 | 2 | 1 1/2 | 1 1/2 |
| 24 - 27 | 2 | 2 | 1 1/2 | 1 1/2 |
| 30 - 33 | 2 | 2 1/2 | 1 1/2 | 1 1/2 |
| 36 & Up | 2 1/2 | 3 | 2 | 2 1/2 |

# HOT WATER

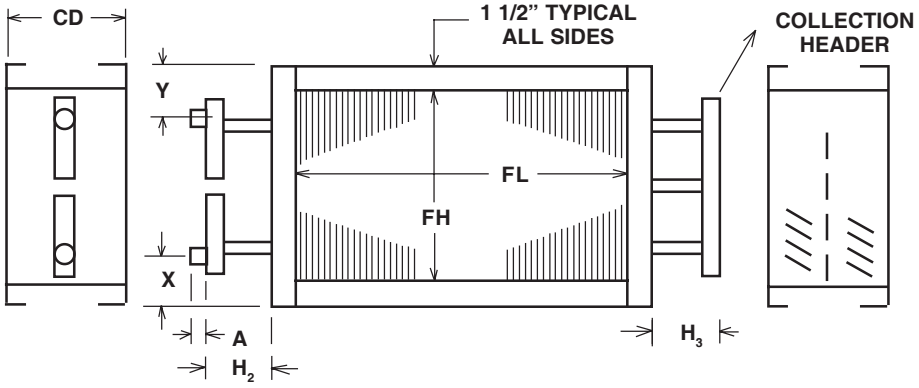
***STANDARD COIL DRAWINGS***

***Hot Water Coils - 5/8" O.D. Type***

**Arrg't "A"**




**Arrg't "B"**




***Coil Construction***

- ***5/8" O.D. x .025 copper tubes.***
- ***.006 thick aluminum tubes.***
- ***Heavy wall copper headers.***
- ***M.P.T. connections (copper).***
- ***1/4" IPS vent and drain.***
- ***All coils have 1/2" turned-over flanges.***
- ***Top supply-bottom return.***
- ***Tolerance ± 1/4" (except as noted).***

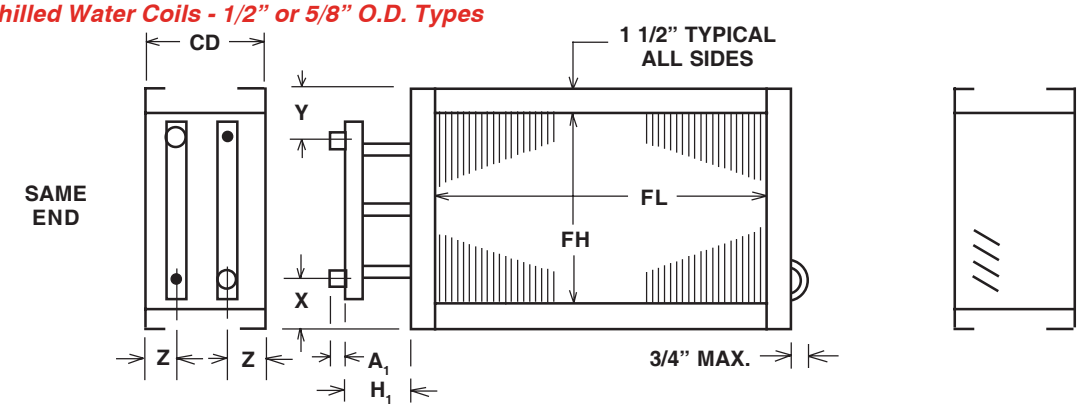
| GPM Range | Suggested Copper Conn. MPT | A | 1 or 2 Row Arrg't "A" | 1 Row Arrg't "B" | | 2 Row Arrg't "B" | | X | Y | CD | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $H_1$ | $H_2$ | $H_3$ | $H_2$ | $H_3$ | | | 1 Row | 2 Row |
| 1-5 | 3/4 | 1 1/2 | 2 3/4 | 2 7/8 | 2 7/8 | 4 3/8 | 4 3/8 | 1 1/2 | 1 1/2 | 5 | 6 1/2 |
| 6-10 | 1 | 2 | 2 3/4 | 2 7/8 | 2 7/8 | 4 3/8 | 4 3/8 | 1 3/4 | 1 3/4 | 5 | 6 1/2 |
| 11-20 | 1 1/4 | 3 | 3 | 3 1/8 | 3 1/8 | 4 3/8 | 4 3/8 | 2 | 2 | 5 | 6 1/2 |
| 21-30 | 1 1/2 | 3 | 3 1/4 | 3 3/8 | 3 3/8 | 4 3/8 | 4 3/8 | 2 | 2 | 5 | 6 1/2 |
| 31-50 | 2 | 3 | 3 3/4 | 3 7/8 | 3 7/8 | 4 3/8 | 4 3/8 | 2 | 2 | 5 | 6 1/2 |
| 51-80 | 2 1/2 | 3 1/4 | 4 1/4 | 4 3/8 | 4 3/8 | 4 3/8 | 4 3/8 | 2 1/4 | 2 1/4 | 5 | 6 1/2 |
| 81-140 | 3 | 3 3/4 | 4 3/4 | 4 7/8 | 4 7/8 | 4 5/8 | 4 5/8 | 2 1/4 | 2 1/4 | 5 | 6 1/2 |

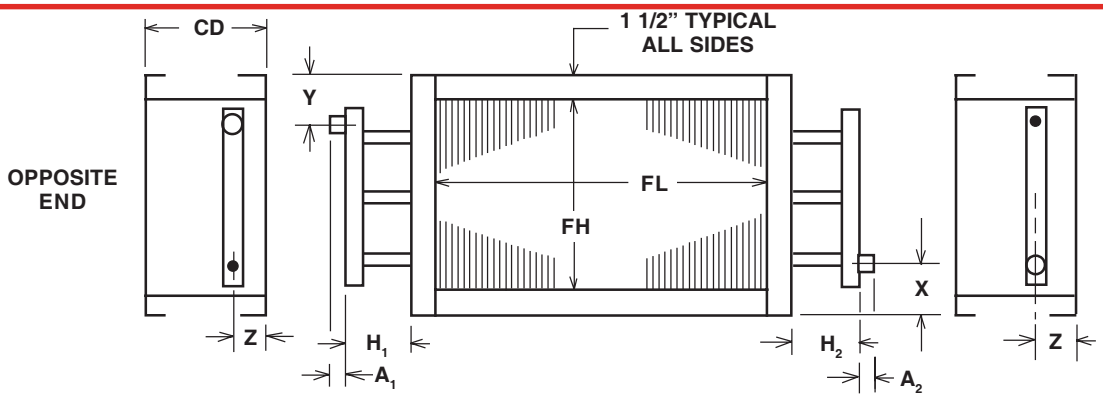
***$H_2$ tolerance ± 1/2***

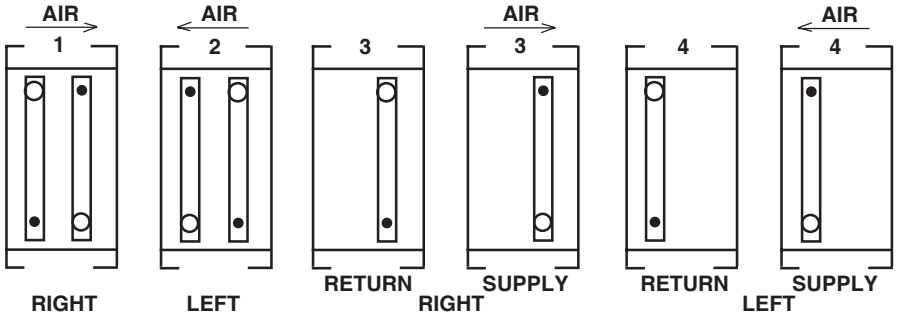
# CHILLED WATER

***STANDARD COIL DRAWINGS***

***Chilled Water Coils - 1/2" or 5/8" O.D. Types***




***Standard Construction:***

- ***5/8" O.D. x .020 wall copper tubes.***
- ***.006 thick plate aluminum.***
- ***Heavy wall copper headers.***
- ***MPT copper connections.***
- ***1/4" I.P.S. vent and drain.***
- ***All coils have 1/2" turned-over flanges for stacking purposes.***
- ***Bottom supply - top return.***
- ***Tolerance ± 1/4"***

*Circuit description:*

*Q=Quarter circuit (1/4 of tubes fed in 1 row).*

*H=Half circuit (1/2 of tubes fed in 1 row).*

*F=Full circuit (all of tubes fed in 1 row).*

*O=One and half circuit (1 1/2 times fed vs. number of tubes in 1 row.*

*D=Double circuit (2 times fed vs. number of tubes in 1 row.*

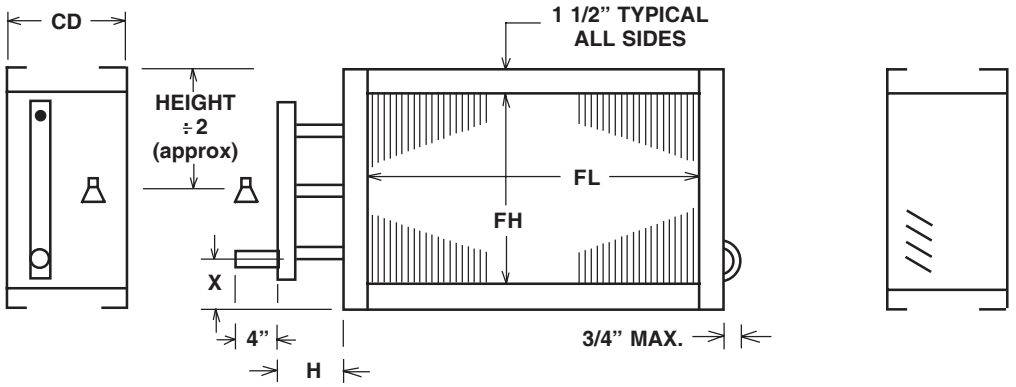
| GPM Range | Suggested Conns MPT |
|---|---|
| 1 -5 | 3/4 |
| 6 - 10 | 1 |
| 11 - 20 | 1 1/4 |
| 21 - 30 | 1 1/2 |
| 31 - 50 | 2 |
| 51 - 80 | 2 1/2 |
| 81 - 140 | 3 |

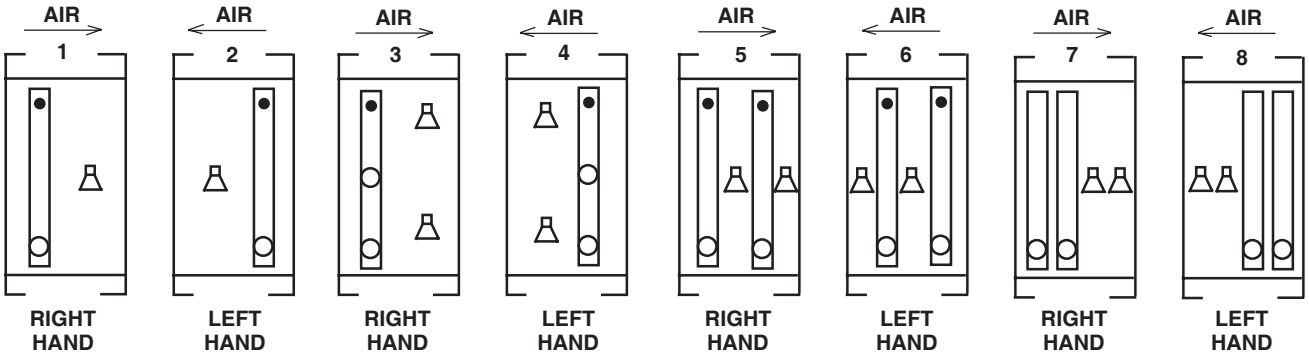
| Conn Size | H | A | X | Y |
|---|---|---|---|---|
| 3/4 | 2 3/4 | 1 1/2 | 1 1/4 | 1 1/4 |
| 1 | 2 3/4 | 2 | 1 1/2 | 1 1/2 |
| 1 1/4 | 3 | 3 | 1 1/2 | 1 1/2 |
| 1 1/2 | 3 1/4 | 3 | 1 1/2 | 1 1/2 |
| 2 | 3 3/4 | 3 | 1 3/4 | 1 3/4 |
| 2 1/2 | 4 1/4 | 3 1/4 | 2 | 2 |
| 3 | 4 3/4 | 3 3/4 | 2 1/4 | 2 1/4 |

| "Z" Connection | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rows | CD | 3/4" to 1 1/2" connections | | | 2" to 3" connections | | | 3/4" to 1 1/2" | | 2' to 3" | |
| | | Q | H | F | Q | H | F | O | D | O | D |
| 3 | 6 1/2 | 2 | 2 | 2 | 1 1/4 | 1 1/4 | 1 1/4 | - | - | - | - |
| 4 | 7 1/2 | 1 13/16 | 1 13/16 | 1 13/16 | 1 13/16 | 1 13/16 | 1 13/16 | - | 2 1/2 | - | - |
| 5 | 10 | 2 1/16 | 2 1/16 | 2 1/16 | 2 1/16 | 2 1/16 | 2 1/16 | - | - | - | - |
| 6 | 10 | 1 3/4 | 1 3/4 | 1 3/4 | 1 3/4 | 1 3/4 | 1 3/4 | 2 3/8 | 2 3/8 | 2 3/8 | 2 3/8 |
| 8 | 12 1/2 | 1 3/4 | 1 3/4 | 1 3/4 | 1 3/4 | 1 3/4 | 1 3/4 | - | 2 3/8 | - | 2 3/8 |
| 10 | 15 | 1 5/8 | 1 5/8 | 1 5/8 | 1 5/8 | 1 5/8 | 1 5/8 | - | 2 3/8 | - | 2 3/8 |
| 12 | 18 | 1 13/16 | 1 13/16 | 1 13/16 | 1 13/16 | 1 13/16 | 1 13/16 | 2 1/2 | 2 1/2 | 2 1/2 | 2 1/2 |

# DX EVAPORATOR

***STANDARD COIL DRAWINGS***
***Direct Expansion Cooling Coils - 5/8" O.D. Type***




***Coil Construction:***

- ***5/8" O.D. x .020 wall copper tubes.***
- ***.006 thick plate aluminum.***
- ***Heavy wall copper headers.***
- ***16 Ga. galvanized steel casings and supports.***
- ***O.D. copper sweat connections.***

***Tonnage vs. connection size based on each circuit. Connections O.D. sweat type - suction distributor size based on performance.***

| R-22 Tonnage | Conn. Size | H | X |
|---|---|---|---|
| 2 - 4 | 7/8 | 2.75 | 1 1/4 |
| 5 - 7 | 1 1/8 | 2.75 | 1 1/2 |
| 8 - 13 | 1 3/8 | 3 | 1 1/2 |
| 14 - 20 | 1 5/8 | 3.25 | 1 1/2 |
| 21 - 39 | 2 1/8 | 3.75 | 1 3/4 |
| 40 - 63 | 2 5/8 | 4.25 | 2 |
| 64 - 99 | 3 1/8 | 4.75 | 2 1/4 |

| Rows | CD |
|---|---|
| 3 | 6 1/2 |
| 4 | 7 1/2 |
| 5 | 10 |
| 6 | 10 |
| 8 | 12 1/2 |
| 10 | 15 |
| 12 | 18 |

# COIL WEIGHTS

| Rows | Fin Width | Fin Length (Inches) 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 | 78 | 84 | 90 | 96 | 102 | 108 | 114 | 120 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 17 | 20 | 23 | 27 | 30 | 34 | 37 | 41 | 44 | 47 | 51 | 54 | 58 | 61 | 64 | 68 | 71 | 75 | 78 |
| | 15 | 19 | 23 | 27 | 31 | 34 | 38 | 42 | 46 | 50 | 53 | 57 | 61 | 65 | 69 | 72 | 76 | 80 | 84 | 88 |
| | 18 | 22 | 26 | 30 | 34 | 38 | 43 | 47 | 51 | 55 | 59 | 64 | 68 | 72 | 76 | 80 | 84 | 89 | 93 | 97 |
| | 21 | 27 | 32 | 36 | 41 | 45 | 50 | 54 | 59 | 64 | 68 | 73 | 77 | 82 | 86 | 91 | 96 | 100 | 105 | 109 |
| | 24 | 30 | 35 | 40 | 45 | 50 | 55 | 59 | 64 | 69 | 74 | 79 | 84 | 89 | 94 | 99 | 104 | 109 | 114 | 119 |
| | 27 | 33 | 38 | 43 | 49 | 54 | 59 | 65 | 70 | 76 | 81 | 86 | 92 | 97 | 102 | 108 | 113 | 118 | 124 | 129 |
| | 30 | 42 | 48 | 54 | 60 | 65 | 71 | 77 | 83 | 88 | 94 | 100 | 106 | 111 | 117 | 123 | 129 | 134 | 140 | 146 |
| | 33 | 46 | 52 | 58 | 64 | 70 | 76 | 83 | 89 | 95 | 101 | 107 | 113 | 119 | 126 | 132 | 138 | 144 | 150 | 156 |
| | 36 | 49 | 56 | 62 | 69 | 75 | 82 | 88 | 95 | 102 | 108 | 115 | 121 | 128 | 134 | 141 | 147 | 154 | 160 | 167 |
| 2 | 12 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 64 | 69 | 74 | 79 | 84 | 89 | 94 | 99 | 104 | 109 |
| | 15 | 23 | 29 | 35 | 40 | 46 | 52 | 58 | 63 | 69 | 75 | 81 | 86 | 92 | 98 | 104 | 109 | 115 | 121 | 127 |
| | 18 | 26 | 33 | 39 | 46 | 52 | 59 | 66 | 72 | 79 | 85 | 92 | 98 | 105 | 111 | 118 | 124 | 131 | 137 | 144 |
| | 21 | 32 | 40 | 47 | 54 | 62 | 69 | 76 | 84 | 91 | 98 | 106 | 113 | 120 | 127 | 135 | 142 | 149 | 157 | 164 |
| | 24 | 36 | 44 | 52 | 60 | 68 | 76 | 84 | 93 | 101 | 109 | 117 | 125 | 133 | 141 | 149 | 157 | 165 | 173 | 181 |
| | 27 | 40 | 49 | 57 | 66 | 75 | 84 | 93 | 102 | 111 | 120 | 128 | 137 | 146 | 155 | 164 | 173 | 182 | 190 | 199 |
| | 30 | 50 | 60 | 69 | 79 | 89 | 98 | 108 | 118 | 127 | 137 | 147 | 156 | 166 | 176 | 185 | 195 | 205 | 214 | 224 |
| | 33 | 54 | 65 | 75 | 86 | 96 | 107 | 117 | 127 | 138 | 148 | 159 | 169 | 180 | 190 | 200 | 211 | 221 | 232 | 242 |
| | 36 | 59 | 70 | 81 | 92 | 103 | 115 | 126 | 137 | 148 | 160 | 171 | 182 | 193 | 204 | 216 | 227 | 238 | 249 | 260 |
| 4 | 12 | 28 | 37 | 45 | 54 | 62 | 71 | 79 | 88 | 96 | 105 | 113 | 122 | 130 | 139 | 147 | 155 | 164 | 172 | 181 |
| | 15 | 33 | 43 | 53 | 63 | 73 | 83 | 93 | 103 | 114 | 124 | 134 | 144 | 154 | 164 | 174 | 184 | 194 | 204 | 214 |
| | 18 | 38 | 50 | 61 | 73 | 85 | 96 | 108 | 119 | 131 | 143 | 154 | 166 | 178 | 189 | 201 | 212 | 224 | 236 | 247 |
| | 21 | 46 | 59 | 72 | 86 | 99 | 112 | 125 | 138 | 151 | 165 | 187 | 191 | 204 | 217 | 230 | 244 | 257 | 270 | 283 |
| | 24 | 51 | 66 | 81 | 95 | 110 | 125 | 140 | 154 | 169 | 184 | 199 | 213 | 228 | 243 | 258 | 272 | 287 | 302 | 316 |
| | 27 | 57 | 73 | 89 | 106 | 122 | 138 | 155 | 171 | 187 | 203 | 220 | 236 | 252 | 269 | 285 | 301 | 318 | 334 | 350 |
| | 30 | 69 | 87 | 105 | 123 | 140 | 158 | 176 | 194 | 212 | 230 | 248 | 265 | 183 | 301 | 319 | 337 | 355 | 373 | 390 |
| | 33 | 75 | 94 | 114 | 133 | 153 | 172 | 191 | 211 | 230 | 250 | 269 | 289 | 308 | 327 | 347 | 366 | 386 | 405 | 424 |
| | 36 | 81 | 102 | 123 | 144 | 165 | 186 | 207 | 228 | 249 | 270 | 291 | 312 | 333 | 354 | 375 | 396 | 417 | 438 | 459 |
| 6 | 12 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 121 | 133 | 145 | 157 | 169 | 181 | 193 | 205 | 217 | 229 | 241 | 253 |
| | 15 | 43 | 58 | 72 | 86 | 101 | 115 | 129 | 144 | 158 | 172 | 187 | 201 | 216 | 230 | 244 | 259 | 273 | 487 | 302 |
| | 18 | 50 | 67 | 83 | 100 | 117 | 133 | 150 | 167 | 184 | 200 | 217 | 234 | 250 | 267 | 284 | 301 | 317 | 334 | 351 |
| | 21 | 60 | 79 | 98 | 117 | 136 | 155 | 174 | 193 | 212 | 231 | 250 | 269 | 288 | 307 | 326 | 345 | 364 | 383 | 402 |
| | 24 | 67 | 88 | 109 | 131 | 156 | 174 | 195 | 216 | 238 | 259 | 280 | 302 | 323 | 345 | 366 | 387 | 409 | 430 | 451 |
| | 27 | 74 | 98 | 121 | 145 | 169 | 193 | 216 | 240 | 264 | 287 | 311 | 335 | 359 | 382 | 406 | 430 | 453 | 477 | 501 |
| | 30 | 88 | 114 | 140 | 166 | 192 | 218 | 244 | 270 | 296 | 322 | 349 | 375 | 401 | 427 | 453 | 479 | 505 | 531 | 557 |
| | 33 | 96 | 124 | 152 | 181 | 209 | 238 | 266 | 294 | 323 | 351 | 380 | 408 | 436 | 465 | 493 | 522 | 550 | 578 | 607 |
| | 36 | 103 | 134 | 165 | 196 | 226 | 257 | 288 | 319 | 349 | 380 | 411 | 442 | 472 | 503 | 534 | 565 | 595 | 626 | 657 |
| 8 | 12 | 45 | 60 | 76 | 91 | 107 | 122 | 138 | 153 | 169 | 185 | 200 | 216 | 231 | 247 | 262 | 278 | 293 | 309 | 325 |
| | 15 | 53 | 72 | 91 | 109 | 128 | 147 | 165 | 184 | 203 | 221 | 240 | 259 | 277 | 296 | 315 | 333 | 352 | 371 | 389 |
| | 18 | 62 | 84 | 105 | 127 | 149 | 171 | 193 | 214 | 236 | 258 | 280 | 301 | 323 | 345 | 267 | 389 | 410 | 432 | 454 |
| | 21 | 73 | 98 | 123 | 148 | 173 | 198 | 223 | 248 | 272 | 297 | 322 | 347 | 372 | 397 | 422 | 447 | 472 | 497 | 522 |
| | 24 | 82 | 110 | 138 | 166 | 194 | 222 | 250 | 278 | 306 | 334 | 362 | 390 | 418 | 446 | 474 | 502 | 530 | 558 | 586 |
| | 27 | 91 | 122 | 153 | 184 | 216 | 247 | 278 | 309 | 340 | 371 | 403 | 434 | 465 | 496 | 527 | 558 | 589 | 621 | 652 |
| | 30 | 107 | 141 | 175 | 210 | 244 | 278 | 312 | 347 | 381 | 415 | 449 | 484 | 518 | 552 | 587 | 621 | 655 | 689 | 742 |
| | 33 | 116 | 154 | 191 | 228 | 266 | 303 | 341 | 378 | 415 | 453 | 490 | 528 | 565 | 602 | 640 | 677 | 715 | 752 | 789 |
| | 36 | 126 | 166 | 207 | 247 | 288 | 328 | 369 | 409 | 490 | 490 | 531 | 571 | 612 | 652 | 693 | 734 | 774 | 815 | 855 |

Notes: Weights are at 10 FPI, and are standard water, standard steam, DX and condenser coils. Multiply the following factors for other type of coils:

| | | | |
|---|---|---|---|
| 6 FPI | - 0.95 | Copper Fins (.006" thick) | - 1.35 |
| 8 FPI | - 0.98 | Steam Distribution (SD) | - 1.40 |
| 12 FPI | - 1.02 | Extra Heavy Tube Walls | - 1.1 |
| 14 FPI | - 1.05 | Stainless Steel Casing | - 1.02 |
| | | 1/2" Tube Coils | - 0.95 |

* Weights are approximate

** To find wet coil operating weight add to above (1.32 x sq. ft. x rows)

# REPLACEMENT COIL WORKSHEET

This is a simple worksheet consisting of twelve steps on how to measure your existing coils. Provide this to MultiTherm with the proper information in order for insure the quotations are correct and accurate. Please fill out the worksheet and fax it back to MultiTherm at **610-408-8365**. We need the following information from you to adequately provide budget or exact pricing. This is so we have specific information to actually fabricate the coil(s). Below is our replacement coil worksheet that you will need to complete. The information requested can be obtained from the front views and connection arrangement views shown on the following pages.

**Company Name:** _____ **Project Name:** _____

**Contact:** _____ **Phone:** _____

**Plant Location:** _____ **Fax:** _____

**Date:** _____ **Email:** _____

| Coil Item | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Tag | | | | |

#1. We need the Unit Manufacturer, Unit and Coil Model Number.

| | | | | |
|---|---|---|---|---|
| Unit Manufacturer | | | | |
| Unit Model Number | | | | |
| Coil Model Number | | | | |

#2. Coil Type (Standard Steam, Steam Distributor, Hot Water, Chilled Water, DX Cooling or Condenser) and tube diameter, connections on same or opposite ends, and the quantity.

| | | | | |
|---|---|---|---|---|
| Coil Type / Tube Dif. | | | | |
| Same or opposite end | | | | |
| Quanty | | | | |

#3. Face View and Coil Connection View arrangements:

- Face View is either exposed or concealed headers and select coil closest to E1 thru E6 or C1 thru C6. We do not show the actual coil connection stubs for ease of selection.
- Coil Connection arrangement is by looking at connection end (both ends if opposite end). Select the view closest to your coil to be replaced.

| | | | | |
|---|---|---|---|---|
| Face View Arrangement | | | | |
| Connection View Arrangement | | | | |

#4. Rows, Fins per inch, Number of tubes in each row:

- Rows are rows of tubing in direction of airflow. Usually one row to eight rows but can be more.
- Fins per inch are just the number of fines within one inch.
- Number of tubes high is the number you can count in one row. An example would be a 5/8" Tube Coil with a fin height of 30" and there are 20 tubes/row.

| | | | | |
|---|---|---|---|---|
| Rows (in direction of air flow) | | | | |
| Fins per inch | | | | |
| No. of Tubes (in each row) | | | | |

#5. Selection of finned area (FH x FL), Casing Height x Casing Length x Casing Depth *(very important)*.

- FH (Fin Height) x FL (Fin Length) is finned area where air passes through the coil.
- Casing dimensions are always outer frame dimensions. Casing Height is always perpendicular to tubes. Casing Length in tube run direction. Casing Depth is always measured in direction of airflow.

| | | | | |
|---|---|---|---|---|
| FH (Fin Height) x FL (Fin Length) | | | | |
| CH (Casing Height) x CL (Casing Length) | | | | |
| CD (Casing Depth in direction of air flow) | | | | |

# REPLACEMENT COIL WORKSHEET

#6. Overall Length (OL) and Stub Length (SL) is very important because the OL might be the most important length dimension measured since it is usually fitting snug within the walls of the unit. Always remember that OL should always be longer then CL (casing length). Stub Length is just the distance of the connection stub from header out to end including thread.

| | | | | |
|---|---|---|---|---|
| OL (Overall Length including bends/headers) | | | | |
| SL (Stub Length includes connection length) | | | | |

#7. Connection sizes are easy but connection types are usually MPT, FPT, Sweat or Flanged.

| | | | | |
|---|---|---|---|---|
| SC (Supply Connection size / type) | | | | |
| RC (Return Connection size / type) | | | | |

#8. Top and Bottom (T/B) Flange sizes and Flanges at connection and return bend ends (EF) are important to properly build channels so that coils can fit into unit. Remember FH (Flange Height) + TB + TB = CH (Casing Height) and FL (Flange Length) + EF + EF = CL (Casing Length).

| | | | | |
|---|---|---|---|---|
| T/B Flanges (Top & Bottom Flanges) | | | | |
| EF End Flanges (connection & return bend End) | | | | |

#9. This is the connection location area. Connections are always measured from the very edge (top or bottom of coil casing) to centerline of connection. A is always bottom to lowest connection. B is always from top to highest connections. C is always the horizontal measuring between connections or from side of coil casing.

| | | | | |
|---|---|---|---|---|
| A (connection located bottom up) | | | | |
| B (connectiion location top down) | | | | |
| C (connection location horizontally between) | | | | |

#10. Construction of coil is important because we need to know to make sure special materials are used when required. If you cannot tell, then give us temperature / pressure ratings and corrosive data, in lieu of actual construction.

| | | | | |
|---|---|---|---|---|
| Tube O.D. / Construction | | | | |
| Fin Construction | | | | |
| Header / Connection Construction | | | | |
| Casing / Frame Construction | | | | |

#11. This section is actually giving us the circuitry on the coils. Determining the circuitry is as simple as counting the number of tubes fed from each header.

| | | | | |
|---|---|---|---|---|
| Number of Tubes connected to inlet | | | | |
| Number of Tubes connected to outlet | | | | |

#12. Comments: Our intention is not to duplicate your existing problem but to provide a better solution to fix your problem and your input is needed to make this happen. We will also need information such as coatings, your application, etc., that will help up provide a better solution.

| | |
|---|---|
| Item #1: | |
| Item #2: | |
| Item #3: | |
| Item #4: | |

**P.O. Box 579**
**Devault, PA 19432**
**Toll Free: 800.339.7991**
**Fax 610.408.8365**
**www.MultiThermCoils.com**

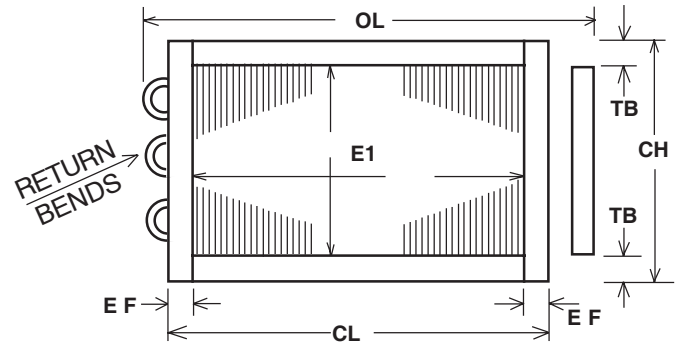
MultiTherm® REPLACEMENT COILS
YOUR HEAT TRANSFER NEEDS ARE OUR ONLY CONCERN

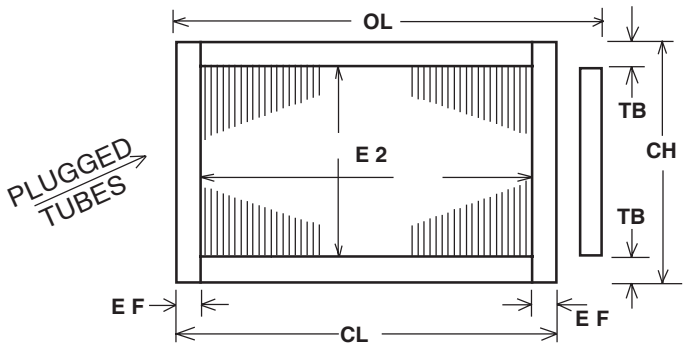
# INSTRUCTIONS

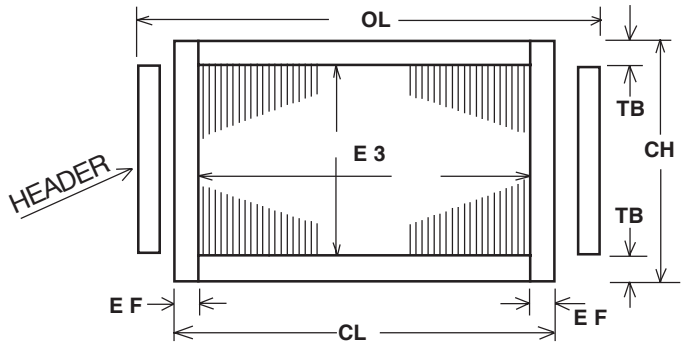
*MASTER COIL REPLACEMENT FORM*

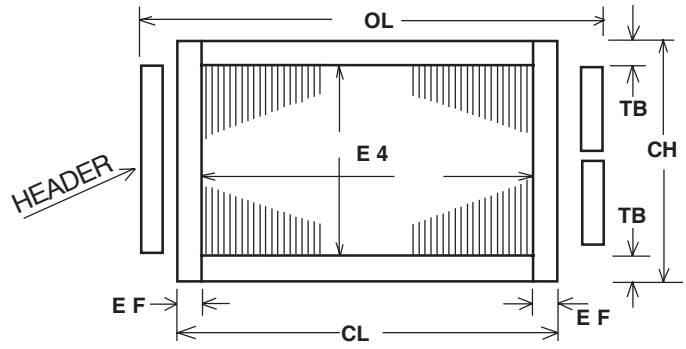
## FACE VIEW ARRANGEMENTS

### Exposed Ends

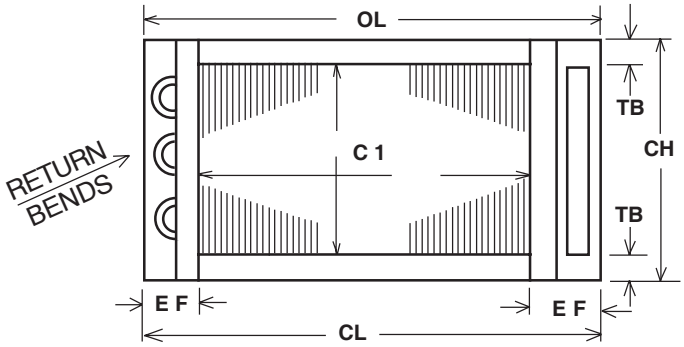


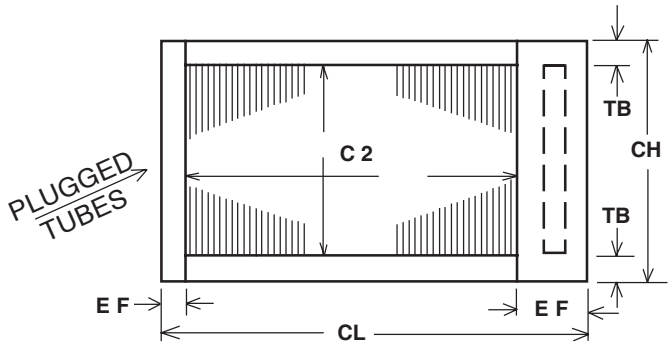



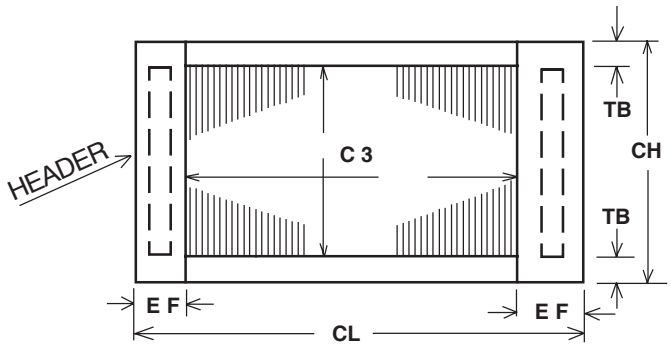



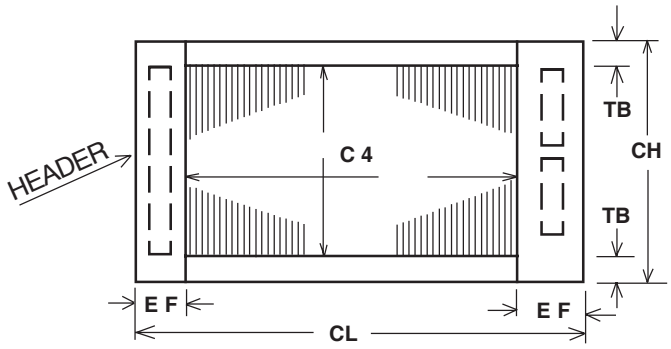




### Concealed Ends



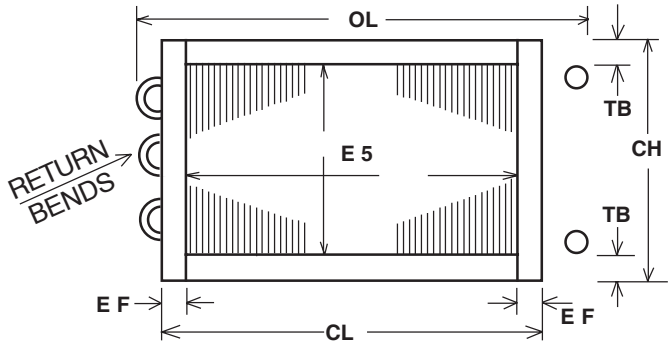



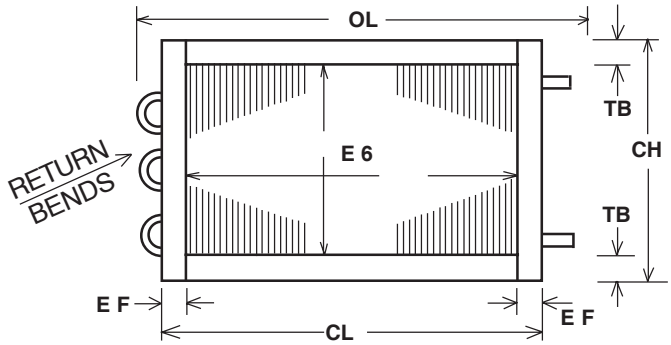



# INSTRUCTIONS

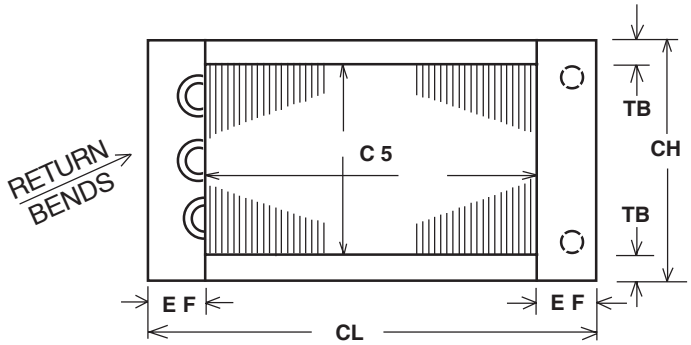
*MASTER COIL REPLACEMENT FORM*

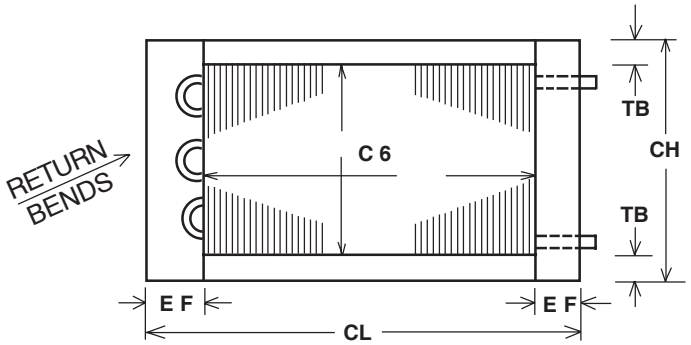
### Exposed Ends



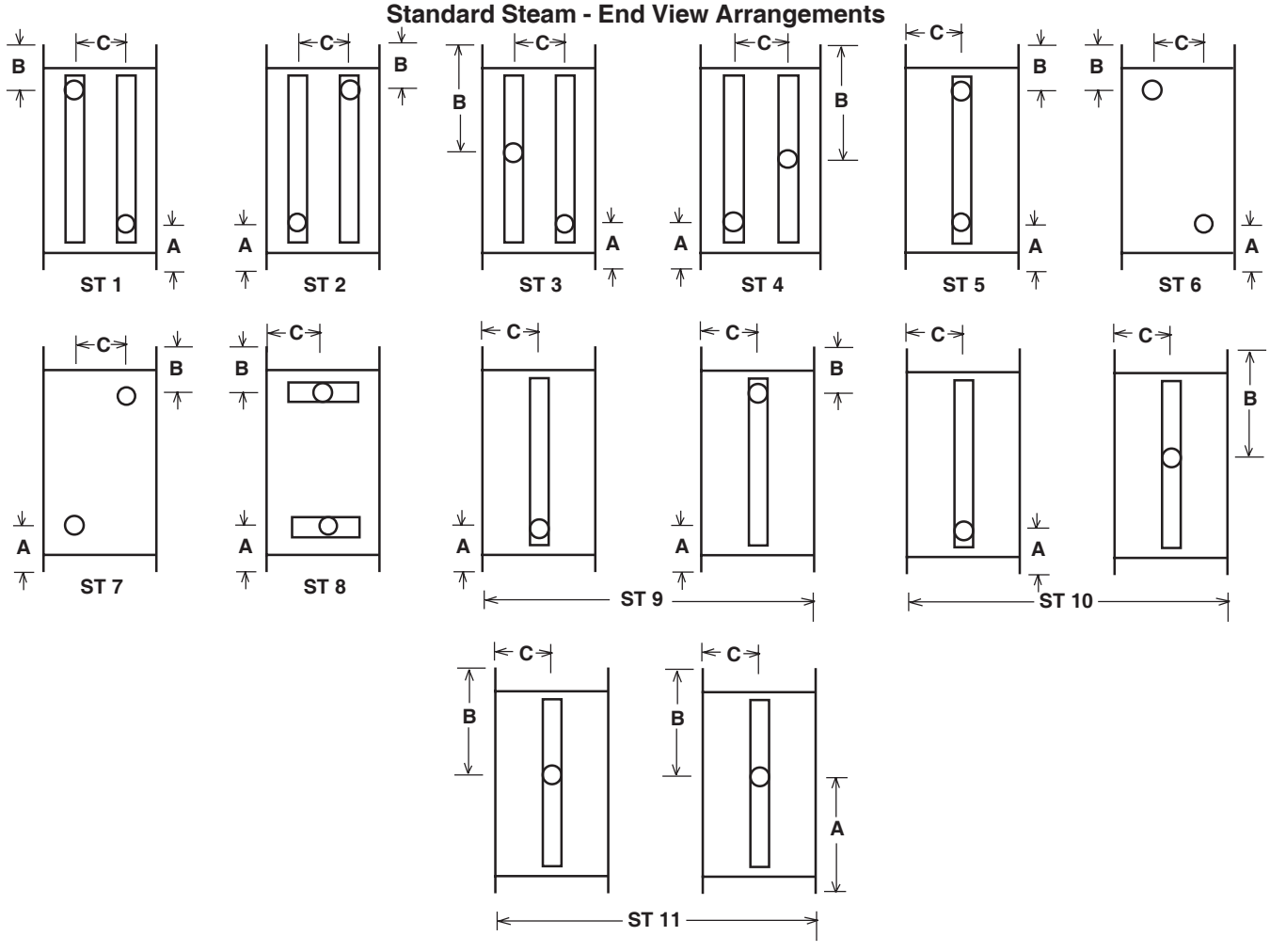




### Concealed Ends



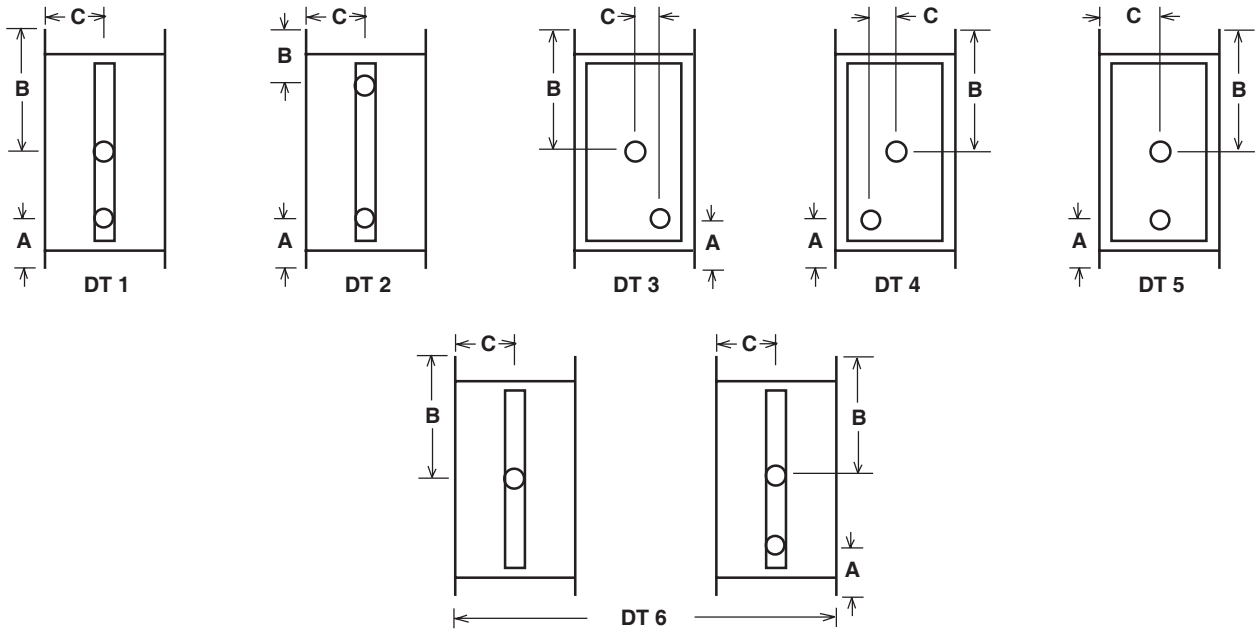

### Standard Steam - End View Arrangements



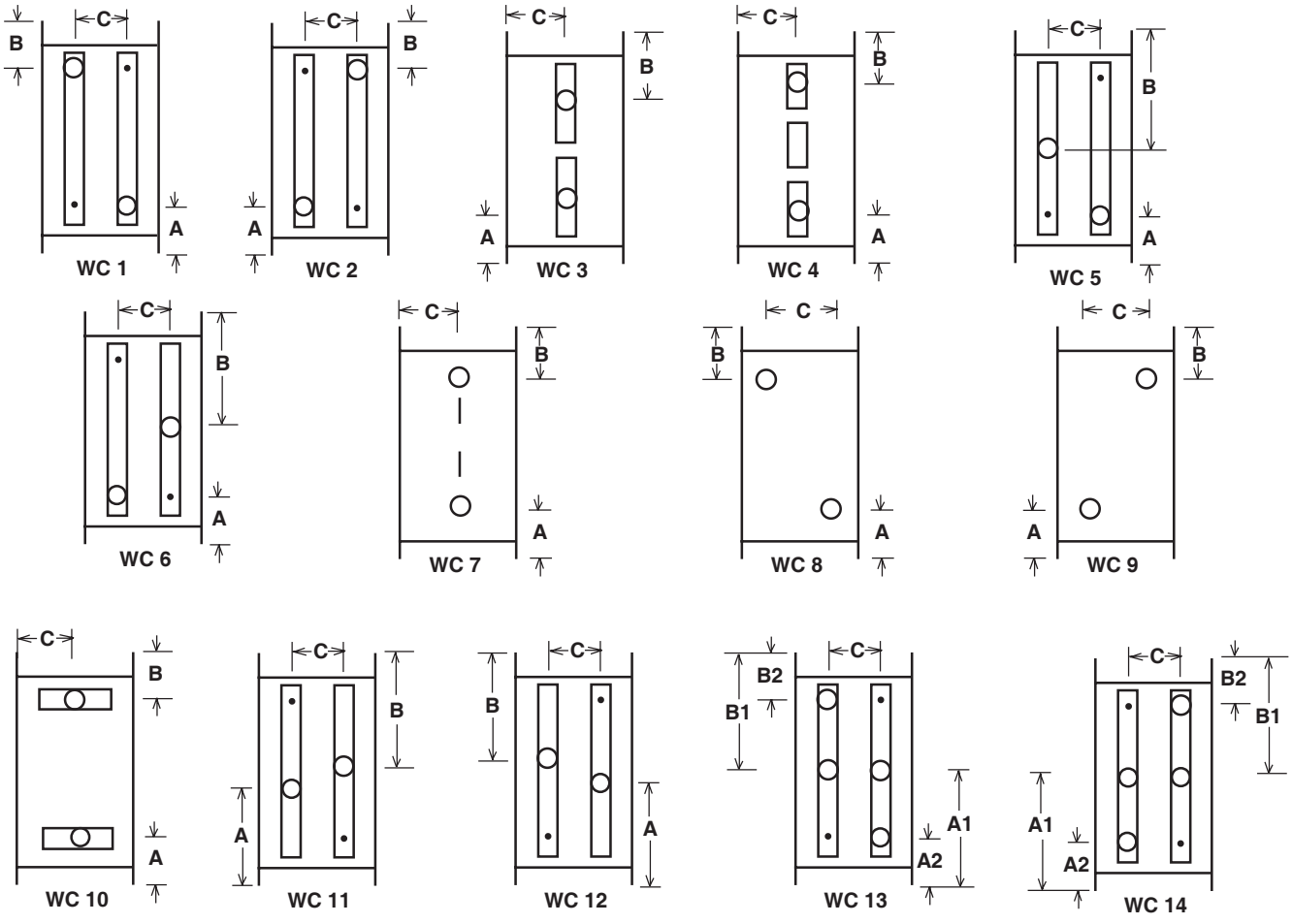
# INSTRUCTIONS

*MASTER COIL REPLACEMENT FORM*

## Steam Distributing - End View Arrangements

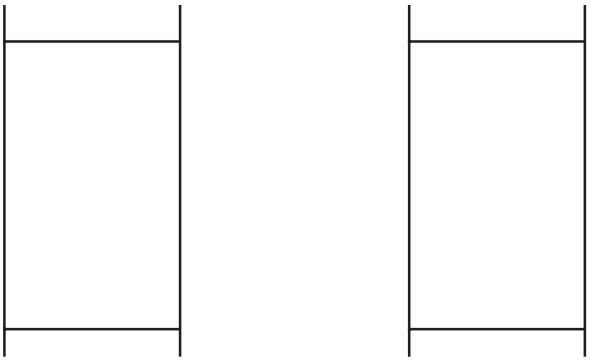



## Chilled Water and/or Hot Water - End View Arrangements

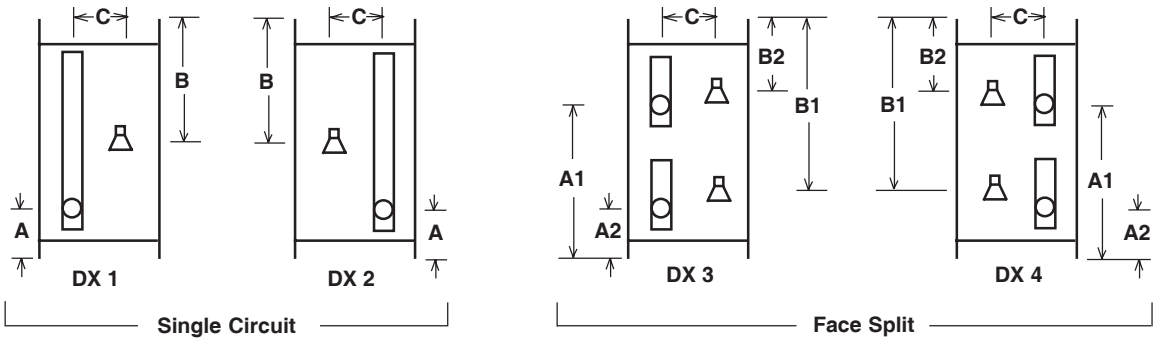


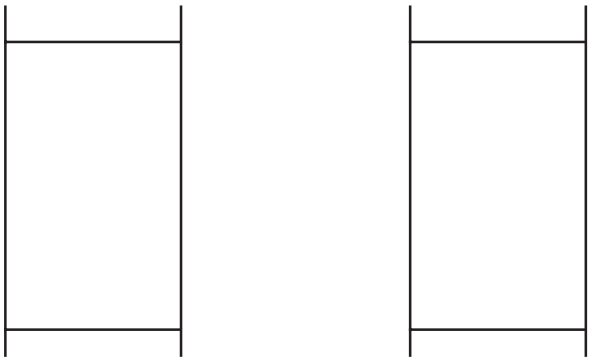
# INSTRUCTIONS

*MASTER COIL REPLACEMENT FORM*



## Evaporator (DX) - End View Arrangements

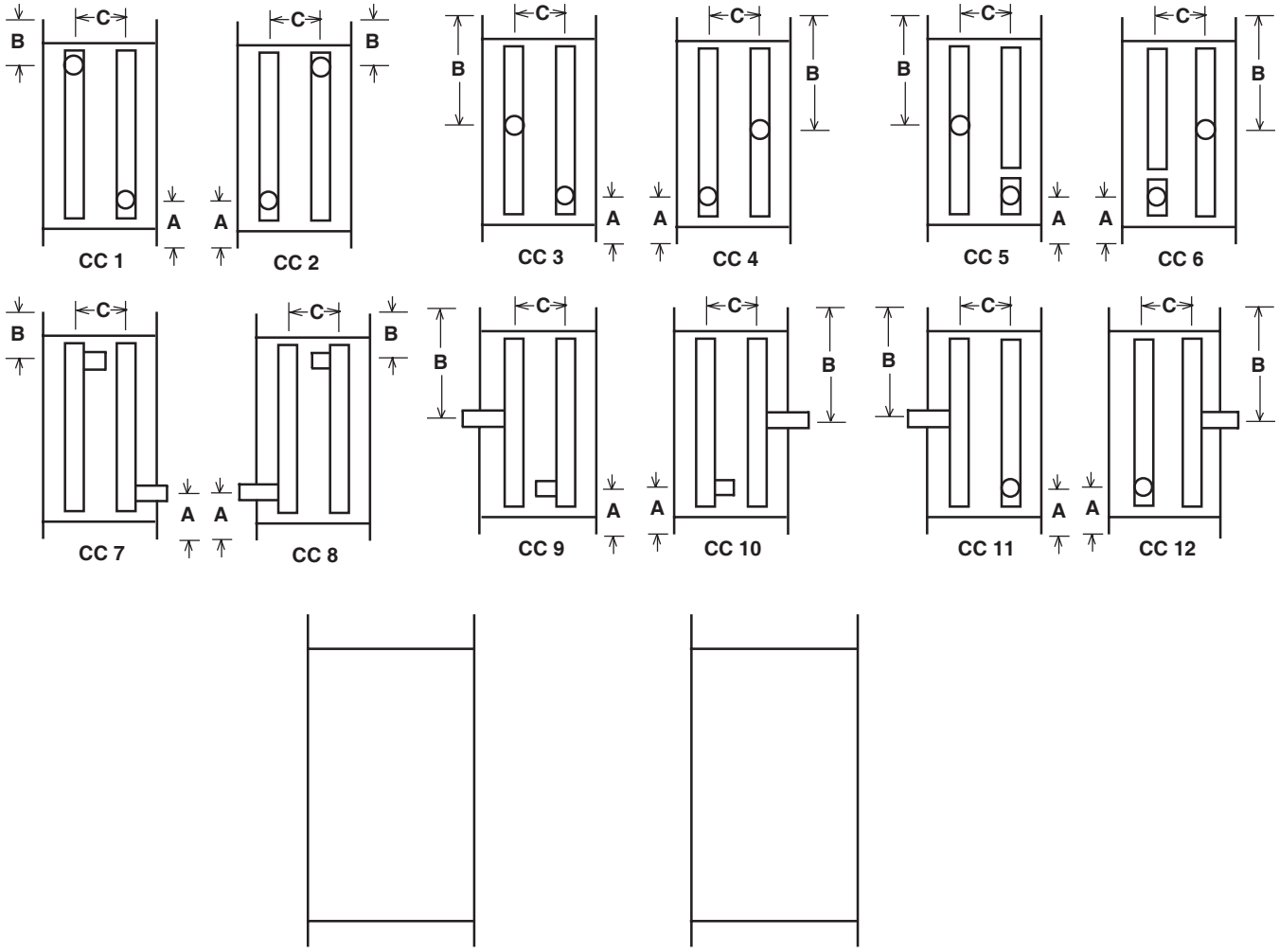


# INSTRUCTIONS

*MASTER COIL REPLACEMENT FORM*

**Condenser - End View Arrangements**



# WARRANTY

## Multitherm Standard Material & Workmanship 1 Year Warranty

### Basic Warranty - Material and Workmanship

Seller warrants, to the original buyer only, that any equipment manufactured by it will be free of defects in material and workmanship, under normal use and service, for one year from the date of shipment. Seller's obligation under this warranty shall be strictly and exclusively limited to repairing or replacing parts and materials, free of charge, f.o.b. our plant, which, in seller's judgement are defective. Seller cannot control the environment nor the manner in which the equipment is used; therefore this warranty does not cover corrosion of equipment during use, or the deterioration caused by conditions of use, or that applications of finishes supplied by others is sufficient, or that finishes applied are suitable for the Buyer's environment. Seller assumes no responsibility for reimbursing repair or replacement expenses incurred without its prior written authorization.

Buyer shall be responsible for all labor costs incurred in connection with repair or replacement at installation site. Buyer shall also be responsible for all costs in removing, packing and shipping defective equipment back to seller. Seller shall be responsible for freight charges back to its factory and Buyer shall use the Seller's designated means of transportation. It is the total responsibility of the Buyer to send back equipment samples quickly (if requested by Seller) to determine possible warranty claims.

### Disclaimer of Warranties and Limitation of Remedies

Seller makes no other warranties, expressed or implied with regard to goods and services provided by seller other than those set forth herein. Any implied warranty of merchantability or fitness for a particular purpose of buyer which exceeds the foregoing warranty is hereby disclaimed by Seller.

Seller will not be liable for any defect or indirect consequential or incidental damages, losses or expenses, including, but not limited to; commercial losses, business interruption, or damages resulting to property other than that which is the subject of the sales transaction, nor shall Seller be liable for any personal injuries arising in connection with the sale, resale of operation of its goods or inability of the buyer to use the goods of Seller for any reason whatsoever.

Limitation of remedy here stated shall apply to ALL warranties arising out of the sale here subject. It is understood between the parties that damage to the contents of the product herein vended, ineffectiveness of the product, or other unintended consequences may result because of many factors including the manner of use of application of the product, all of which are beyond the control of Seller. All such risks shall be assumed by the Buyer. Sellers maximum liability shall not, in any case, exceed the price of the goods claimed to be defective. Seller will not be liable for the infringement of any patents by the Buyer's use of any materials delivered herein.

No promise, representation or affirmation of fact, written or oral, of the Seller or its agent or employees, other than as stated herein, shall constitute a warranty of Seller or give rise of any liability or other obligation of Seller, unless specifically agreed to in writing by Seller.

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